UNITED STATES DEPARTMENT OF AGRICULTURE

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NATIONAL ORGANIC STANDARDS BOARD

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PUBLIC COMMENT WEBINAR

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TUESDAY,
OCTOBER 24, 2017

The National Organic Standards Board convened via webinar at 1:00 p.m. Eastern Time, Tom Chapman, Chair, presiding.

BOARD MEMBERS PRESENT:

TOM CHAPMAN, Chair
ASHLEY SWAFFAR, Vice Chair
JESSE BUIE, Secretary
FRANCIS THICKE, Crops Subcommittee Chair
SUE BAIRD
HARRIET BEHAR
ASA BRADMAN
LISA DE LIMA
STEVE ELA
DAVE MORTENSEN

JOELLE MOSSO

EMILY OAKLEY

SCOTT RICE

A-DAE ROMERO-BRIONES

DAN SEITZ

ALSO PRESENT:

PAUL LEWIS, Director, Standards Division

MICHELLE ARSENAULT, Advisory Committee Specialist, NOSB

LISA BRINES, National List Manager

SHANNON NALLY YANESSA, Assistant Director, Standards Division

MATT PAVONE, Policy Analyst, Standards Division

DEVON PATTILLO, Materials Specialist, Standards Division

BRIDGET McELROY, Policy Analyst, Standards Division

C-O-N-T-E-N-T-S

P-R-O-C-E-E-D-I-N-G-S

(1:04 p.m.)

MR. LEWIS: Thank you, Michelle. And welcome, everyone, to today's National Organic Standards Board webinar. I'm Paul Lewis, Director of Standards Division of the National Organic Program.

I would like welcome NOSB members and the public to today's Board public comment webinar. And I appreciate NOSB member participation as called, and for all your work serving on the Board.

This webinar provides the opportunity for the public to provide comments to the National Organic Standards Board as part of the Board's upcoming public face-to-face meeting scheduled for October 31 to November 2.

And at that time, at that meeting, the National Organic Program will also be providing an update on NOP activities. Please consult the National Organic Program website for further information about the face-to-face meeting.

This meeting, like other meetings of the National Organic Standards Board operates under the auspices of the Federal Advisory Committee Act. I am looking forward to hearing comments from the public to assist the National Organic Standards Board in preparing their recommendations to USDA.

I also want to thank my National Organic Program Standards Division colleagues for their help and their tireless work behind the scenes to bring us to today's teleconference.

I would like to now turn to the chair of the National Organic Standards Board, Tom Chapman. Tom, thank you for chairing today's meeting.

MR. CHAPMAN: Thank you, Paul. Sorry it took me a moment to find my own unmute button, so following my own advice. On behalf of the Board, I would like to welcome everyone to the public comment webinar prior to our Fall meeting, which will be our sixth meeting with a webinar, and I think everyone sees the tremendous value

and increased access with these web meetings given, so much that we're going to be doing two sessions this time with another session on Thursday.

Let me please ask for some forgiveness up front from everybody as we're having IT issues, and I know it's hard, and I've said it a couple times, but most importantly, please remember to keep yourself on mute. Star 6 to mute, star 7 to unmute, or use the handy mute button on your hand-held device. But don't put us on hold, no matter how lovely your hold music may be.

So after the introductory formalities, we'll be beginning public comment period, and then we'll go in order. If someone is not present at the time they are called upon, and there is time remaining at the end of the comment period, I'll run through the list again of those missed.

I will be calling on the next speaker as well as the next one or two on deck so you'll

have a little bit of a heads-up if you're coming up. If you cannot find your phone number on the list of phone numbers here, we may ask for a specific commenter to message us with your phone number. Also be sure that you're not muted.

When called upon, commenters are asked to give your name and affiliation for the record. We ask that you disclose all relevant affiliations pertaining to matters or business before the Board. I encourage anyone that is with us be, and if you want further clarification, to ask questions after the public commenter finishes their comments.

The initial comment time will be three minutes per commenter. We'll hear a buzzer at that three minute mark, and I ask our respective Board and all the other commenters that you try to finish your sentence as soon as you hear that buzzer.

At that point we'll field questions, if there are any, from the Board, and then move on to the next commenter. There will be

transcripts of this call, and that will be bundled with the transcripts for the entire meeting when they are available.

With that, I think we're about ready to get started. Michelle, would you be so kind to do a roll call of the Board present.

MS. ARSENAULT: Indeed. Thank you Tom. All right. Sue Baird. Sue, I know you're online, I can see you.

MS. BAIRD: I'm sorry. Here.

MS. ARSENAULT: That's okay. Harriet Behar?

MS. BEHAR: I'm here.

MS. ARSENAULT: Hi Harriet. Asa Bradman?

MR. BRADMAN: I'm here.

MS. ARSENAULT: Hey, Asa. Jesse Buie?

MR. BUIE: Present.

MS. ARSENAULT: Hello Jesse. Tom Chapman, we know you're here, but would you like to say it?

MR. CHAPMAN: Present.

MS. ARSENAULT: Lisa De Lima?

MS. DE LIMA: Here.

MS. ARSENAULT: Hello there. Steve Ela?

MR. ELA: I'm here.

MS. ARSENAULT: Hi Steve. Dave Mortensen?

MR. MORTENSEN: I'm here.

MS. ARSENAULT: Hi Dave. Joelle Mosso?

MS. MOSSO: Here.

MS. ARSENAULT: Welcome Joelle. Emily Oakley?

MS. OAKLEY: Present.

MS. ARSENAULT: Hi Emily. Scott Rice?

MR. RICE: Present, thanks.

MS. ARSENAULT: Thanks Scott. A-Dae Romero-Briones?

MR. ROMERO-BRIONES: I'm here.

MS. ARSENAULT: Hey A-Dae. Dan Seitz?

MR. SEITZ: Present.

MS. ARSENAULT: Hello Dan. Ashley

Swaffar?

MS. SWAFFAR: Here.

MS. ARSENAULT: Hi there. And Francis Thicke? Francis, I know you're on. If you're talking, we can't hear you. No, still not. So I know you're present because I can see you on my screen.

MR. CHAPMAN: I unmuted you Francis. You were muted on yours, not on ours.

MS. ARSENAULT: Not there? All right. He's talking? So Francis, can you try again? Okay, well hopefully we'll work that out Tom, and get his audio working. Thank you.

MR. CHAPMAN: All right. With that, we'll get started. First up we have Steve Etka. Following Steve will be Harold Austin and Ruth Watts. Steve, if you could start with your name and relevant affiliation.

MR. ETKA: Thank you. My name is Steve Etka and I'm with the National Organic Coalition. The funding process is in full swing in Congress and NOC and its member organizations

and D.C. partners are very much in the middle of those discussions.

NOC's focus has been on funding for organic research and certification cost-share programs, expanding farmer access to regionally adapted feeds, and strengthening NOC resources, and enforcement to deal with fraudulent organic imports.

But unfortunately, there is also a debate taking place about the NOSB itself, with some congressional critics of organic posing questions about possible statutory changes in the Board.

My belief is that the current statutory structure of the Board is sound and most carefully crafted by NOC to insure full participation by all sectors of organic. While pure added changes to the NOSB process can be made administratively, it is dangerous unarguably to be making changes to the statutory NOSB structure and authority.

We value your work in the transparent

and inclusively your undertaking. NOC continues to appreciate NOSB's work to put together research priorities, and the growing list is a great example of why we are pushing for more organic research funding.

Some of these priorities relate to challenges regarding sunset decisions. In the state of the NOC's comments, we support the relisting of 6-copper and copper sulfate because they are critical to us for farmers and are near viable alternatives.

Yet, we also strongly support research targeted to finding alternatives because of the negative effects of these formulations on soil health. We appreciate the addition of organic livestock breeding to the research priority list and emphasize its importance to the integrity of organic poultry in particular.

More studies are needed, but investigating our way of management and feeding practices that can provide adequate total protein and thiamine for bird health and well-being, as

well as breeding for traits in a more suitable, thriving and organic outdoor and pasture systems.

We'd also like to see research priority focus on the integrity of breeding lines used in organic plant breeding and seed production, and identifying the best methods for preventing and mitigating unwanted GE material in seed used by organic operations.

In the better data, to better understand the extent of the problem and research that evaluates the effectiveness of methods for preventing the problem.

In closing, I want to thank NOSB and NOP for setting up the open dockets for the public to dialogue with the Board on an ongoing basis. It's our hope that that process can be a two-way dialogue for the Board to interact in real time with the public.

And that would include posting documents on key issues early to get feedback throughout the process instead of waiting just before the meeting when there's a time crunch.

Right now we have a one-way docket, and we need to make sure that the open docket doesn't simply become an empty docket. Thank you.

MS. ARSENAULT: Wow, great timing.

MR. CHAPMAN: Thank you, Steve. Any questions for Steve? Being none, we'll be moving on to our next speaker. Next up is Harold, followed by Ruth Watts, and after Ruth is Jeanette Hanna. Harold, are you with us?

MR. AUSTIN: I am.

MR. CHAPMAN: Can you start with your name and relevant affiliations please.

MR. AUSTIN: Good day everyone. Harold Austin, past member of the NOSB. I would like to thank the NOP for allowing us the opportunity to provide oral public comment via the webinar process. This is a great use of today's technology for the benefit of organics and the various stakeholders that comprise it.

I would also would like to thank each of you currently on the NOSB for taking the time out of your busy schedules to serve your

stakeholder group as well as the organic community. Thank you guys. I know the time that it takes.

I support the CACS's proposal on eliminating incentive to convert native ecosystems to organic production. This needs to be done.

I support the renewal of those materials for handling that are currently up for sunset vote at this upcoming meeting. These materials remain important to those handing operations that currently use them in their daily operations and production process.

I fully support the re-listing of the chlorine materials currently up for sunset review for both handling and crop production uses. These various chlorines, along with other types of sanitizers and disinfectants and other various controlled measures, are used in a variety of steps in organic crop production and handling.

These materials are most often used in different steps of process in order to avoid a

resistance build-up to one specific material or substance by the various pathogens being treated for. Thus having different forms of chlorine, along with other sanitizing materials, is important to insure proper steps have been taken to see that consumer expectations have been met and that food safety is always our number one goal.

The implementation of the Food Safety Modernization Act has made meeting these expectations now a legal requirement for crop producers and handlers alike.

I support the re-listing of those materials up for sunset review and vote for use in organic crop production. I would like to stress the importance of maintaining coppers on the national list.

With the removal of the oxytetracycline and streptomycin, copper has now become our number one material for control of various blight, such as fire blight and Coryneum blight that attack our crops. Without this

material on the national list, we would not be able to farm many of the varieties that we currently farm.

And we do implement a lot of horticultural practices along with these materials, so it's not just like this is a panacea. We are doing everything we can and we still have to use the copper in order to control fire blight and Coryneum blight.

Finally, while not perfect, the National Organic Program has helped to grow consumer and organic stakeholder confidence in the organic label and the integrity that it represents and stands for. That includes not just here in our country, but globally.

Miles McEvoy, during his eight years as of the head of the NOP, accomplished some amazing things that were for the good of the organic community and its various stakeholder groups. If anybody thinks otherwise, you truly do not know Miles and how strongly committed to organics he was and always has been.

He is the reason we have organics in our state, and we will always be appreciative of his embodiment of what organics truly represent and stand for. A way of life. Our way of life.

MR. CHAPMAN: Thank you Harold. Any questions for Harold? I've got one. Ashley.

MS. SWAFFAR: Hi Harold. Thank you for your comments. I just want to talk a little bit about the chlorine materials, and you mentioned how they're important to rotate through for resistance. Can you kind of maybe go into that a little bit more? I would like to hear your thoughts on that.

MR. AUSTIN: Sure. For us, particularly as a tree fruit, we use the different materials, the sanitizers and the disinfectants. We use them out in the field to treat our equipment when we are treating or cutting the limbs for fire blight control. We'll treat them with a lot of things, maybe it's with chlorine, maybe it's with peracetic acid, something like that, or hydrogen peroxide.

We treat our bins. We rinse our bins out. When coming to the packing facility, we also have to disinfect and clean and sanitize our storages. And when coming to our packing lines, our bins get dumped and immersed into water that has chlorine added to it. It gets transported through brushes, across some conveyor belts, maybe through some sizer cups or belts.

So there's a multitude of different areas where our foods get contacted with various surfaces. So we can't rely on just one material. We've got to rely on different materials so that we're breaking up the cycle of contact with the different pathogens so we're managing the systems management and control.

So for us, you know, having one or two materials isn't going to be adequate because of the different various control points where we're treating to control these pathogens.

And now the implementation of the Food Safety Modernization Act, it's now a legal requirement that we have to ensure that we're

providing a good, safe product for the consumer to buy and to give to their families and their children.

So sanitizers, especially the chlorines, are extremely important to us. We use the chlorines in our dip tanks. We use them in multiple other steps, but we intermix it with some of the other materials, such as ozone for example.

So we need them. Without them, I think we'd have a real tough time meeting compliance with the Food Safety Modernization Act to be honest.

MR. CHAPMAN: Thank you very much Harold.

MR. AUSTIN: Thank you guys.

MR. CHAPMAN: All right. Up next we have Ruth Watts followed by Jeanette Hanna, with Zea Sonnabend on deck. Ruth, are you guys hooked up?

MS. WATTS: Yes, thank you. This is Ruth Watts. I'm with BASF Biopolymers, and I

focus primarily on development of agriculture opportunities. I want to acknowledge and thank the NSOB and the NOP for the opportunity to speak at this time and for all the commitments that you guys have toward soil and environments to enrich it.

Slide 1 please. As citizens, we are all responsible for the health and safety of this planet. As professional stewards of the agriculture industry, we have a responsibility to not only be good stewards of water and energy usage, but we are also responsible for managing our resources efficiently by minimalizing and managing our waste.

Slide 2 please. Since the early 1960's, the benefits of polyethylene mulch film have been known. Particularly for organic farmers, the benefits of increased yield to meet the increasing demand of organic produce, reduction or elimination of herbicides for wheat management, and reduced water consumption.

Despite all these great benefits which

already have been realized with polyethylene film, farmers are still -- they are prevented from being good stewards of the planet due to the end-of-life challenges of polyethylene mulch film.

Slide 3 please. Due to the high soil content of the used film, recyclers and land-fillers will not accept this material. Or if they do, the high keeping fees are extremely high.

Therefore, many do not have an outlet for the film, so it sits on the side of the fields. In some cases it is burned. So the question that has been proposed to me: Why are we putting our trash in somebody else's back yard?

Did you know that in order to get polyethylene mulch film out of the field at the end of the growing season, it requires a film thickness greater than 30 to 40 percent of what's really needed to provide those benefits that we previously mentioned.

This is necessary just to be able to extract the film from the field, including the fragments which are created due to the loss of mechanical properties.

Slide 4 please. We've discussed that the current commercial biodegradable mulch films not only deliver the same benefits for the farmers as the PE mulch film, but it addresses the end-of-life issues in a safe and efficient manner.

What may not be discussed yet is the biodegradable mulch films can meet these performances as PE at very lower film thickness since it does not have to be removed from the film.

This reduction in film thickness demonstrates better use of input materials, and past and present studies both from the industry and academia show that there's no harm to the soil or plant growth.

At BASF, we are responsible for stewardship of all of our technologies, including

those which are used in biodegradable mulch films. As good stewards, we all continue with research in access of biodegradable mulch technologies.

We would ask the Board, the NSOB, to vote not to sunset biodegradable mulch films. And we also ask the Board to recommend that the NOP remove the Memo 15-1. Thank you very much.

MR. CHAPMAN: Thank you. Any questions for Ruth?

MR. BRADMAN: This is Asa Bradman. I have a question. You can email this to me. Could you send me the weight per square meter of the biodegradable mulch? And I want to look at that in relation to the mass of the soil in making --.

MS. WATTS: Sure.

MR. BRADMAN: If you could send me that, that would be great. Just the, you know, grams or milligrams whatever per square meter of the different materials.

MS. WATTS: Sure. Of the different

types or what's needed for the actual application, because it depends on the type of film and what's required based on the, you know, the environmental condition. So I can give you a range. Would that be helpful?

MR. BRADMAN: A range. Yes, different types for different materials. Different types of film.

MS. WATTS: Yes, I'll be glad to do that.

MS. ARSENAULT: And Ruth --

MS. WATTS: Should I send that through you Michelle? Is that what I should do?

MS. ARSENAULT: That's exactly what I was about to tell you. So yes, send them to me and I'll distribute them. Thanks.

MS. WATTS: Yes, absolutely. Thank you guys.

MR. CHAPMAN: Also a question from Harriet.

MS. BEHAR: Hi Ruth.

MS. WATTS: Hi Harriet.

MS. BEHAR: Hi. My understanding is is the bioplastic that you have, when it biodegrades, it is recognized by the microbes as a food and they consume it.

But there are other petroleum products that are sold as synthetic fertilizers that have the same characteristic. That they are synthetic fertilizers, but are picked up by plant roots and used by microbes to fertilize plants.

So perhaps again, something you can send to us is explaining how your biopolymer is different than the petroleum-based fertilizers that we don't allow in organics.

MS. WATTS: Okay. I'll ask Dr. Schlegel, with whom you guys met last time, to see if she can address this for you.

MS. BEHAR: Thank you.

MS. WATTS: Okay, thank you.

MR. CHAPMAN: Up next I have Jeanette Hanna with Zea Sonnabend on deck, followed by Guernina Hamza and Brian Filipowich. All right, Jeanette, if you could start with your name and

affiliation.

MS. HANNA: Sure, my name is Jeanette Hanna and I work in Market Development for the biopolymers business at BASF. I'd like to thank the Board for taking the time to listen to the input from the participants in today's webinar, and today I wish to address the topic of biodegradable mulch film.

My role in market development is to work with all the stakeholders throughout the agricultural and composting industries to help identify where more sustainable practices might be possible, and then insure these practices are successfully implemented along with the proper tools.

The goal is that these collaborations will result in a more sustainable future for all of us. As the certification body, your work is essential for supporting developments toward this sustainable future, and as an organization which defines its standards based on ideals supporting healthy and safe farming practices to insure

stewardship of our planet, you are an important influencer and gatekeeper for the introduction of new technologies.

One of the most valuable features of the Organic Program is it has the liberty of taking a holistic view of the program. The benefit of viewing from 50,000 feet is that we can insure successful long-term outcomes, but also, perhaps unexpectedly, in some cases a high-level view also adds clarity to the details taking place at 5,000 feet.

In one example at 50,000 feet, there have been no shortages of publications demonstrating the impact of organic farming on soil health and global warming. This is, after all, the priority to insure that organics is a leader in materials and practices for a more sustainable future.

And as such an example, I see the discussion document for field and greenhouse container production is also from a high-level viewpoint. Here, the consideration includes the

resources required for farming by this method, and end-of-life outcomes for the materials used.

In particular, for the use of polyethylene film, some of the challenges that they pose for sustainable farming are described. We see here that biodegradable mulch films would either eliminate or reduce these pain points for farmers using mulch films for their crops.

Finally, as we take a look at the big picture, I would like to address the topic of feedstocks. This is not only an issue for biodegradable mulch film with regard to Memo 15-1, but it is relevant for current petitions and future discussions in organics.

For example, I reviewed some of the public comments on the Anaerobic Digestion petition. The comments expressed an urgency to define feedstocks for the AD process. I challenge this public perception by saying it is not the feedstock into the AD process which must be defined. It is the final output of the reactor which much be specified.

Anaerobic digestion processes transform incoming feedstocks. It is the resulting product which is then considered as an organic farming input based on its performance and merits alone.

I therefore propose that it is not the feedstocks that are important. The important thing is to define a performance standard for farm input.

In the case of biodegradable mulch films, the standard for performance has already been defined and is written into the regulation.

To conclude, I thank you for your time and request that you vote to keep biodegradable mulch film on the list and recommend that you request the NOP remove Memo 15-1.

MR. CHAPMAN: Thank you Jeanette. Any questions from the Board? I see A-Dae.

MR. ROMERO-BRIONES: Sorry, I just pressed the wrong button.

MR. CHAPMAN: Okay. Any other questions from the Board? Being none, thank you

Jeanette for your comment. Up next we have Zea Sonnabend, followed by Guernina Hamza. Guernina, if you can message us with your phone number, we're not finding you on the webinar, and are followed by Brian Filipowich. And after Brian is Donald Lusk. So up next is Zea Sonnabend, if you could start with your name and affiliation for the record.

MS. SONNABEND: Am I --

MR. CHAPMAN: Zea, can you start over. We just unmuted you.

MS. SONNABEND: Okay, you can hear me?

MR. CHAPMAN: I can hear you, yes.

MS. SONNABEND: Okay, thank you. Good morning everyone. Zea Sonnabend, former NOSB member representing CCOF and from Fruitilicious Farm.

I'm pretty sure I'm not going to speak on every single subject today. I am going to speak just on four of the subjects.

First of all, an excluded message. As one of the main instigators of this effort, I

really do appreciate forward movement on it, but we feel that the proposal as put out needs a little more specificity to explain exactly what's being prohibited here.

We would like to see each of the terms defined and a particular statement about the distinction between the term cisgenesis in this context and the cell fusion within plant families that's the subject of the 2013 NOP memo.

There was a lot of confusion even amongst ourselves who know this stuff about it, and we do think that it would be stronger if that was clarified.

Next is the impurity discussion document. During the April 2016 comment period, the input was almost unanimously in favor of creating an impurity task force. All of the other ideas put forward in that last discussion document would be addressed by such a task force and a possible testing pilot program would emerge.

So we were disappointed that we didn't

see any mention of the task force in your discussion document, and we urge you to take this under consideration.

Next, the non-certified handler operation. We understand the problem and we appreciate your efforts to try and deal with the handlers that are not certified. However, farmers also use a lot of non-certified operations such as storage facilities; both cold storage and not cold storage.

An example such as apple and berries, watermelons, and winter squash, nuts, olive oil in drums and many other things. The storage is almost always, but not exclusively, for the farmer who has been taking the products back when they're ready to sell it.

This proposal places an excessive amount of new language on bulk containers for farmers who are just trying to put their own products somewhere in a designated storage. So this will be a significant burden on farmers, and we do urge you to modify the proposal to exempt

that situation.

Last of all, converting native ecosystems. CCOF appreciates the efforts to protect native ecosystems and we appreciate the NOSB trying to do something towards it. But we are very concerned that this proposal is unrealistic for certifiers to enforce.

Official maps and imaging services are not always reliable, and the CCOF written comments give some examples of this. Ten years of verifiable information is not achievable and will hold up a lot of eligible land from certification. And the law now is only for three years, so we question the legal authority to make it longer. Thank you very much.

MR. CHAPMAN: Thank you Zea. Any questions for Zea? I see one from Harriet.

MS. BEHAR: Hi Zea.

MS. SONNABEND: Hi.

MS. BEHAR: Just so you know, we have been working with the NOP in trying to get something, a seed purity task force is on our

agenda almost every subcommittee call. But with all the changes in the administration, and now changes here within the NOP, things have been on hold. But, just so you know, I am still carrying that torch for you and for everyone else.

MS. SONNABEND: I understand and we just have to keep pushing. I want to especially thank you for my ability to now go farm and not have to stay here and listen to the whole webinar.

MS. BEHAR: We give you permission for that, too.

MS. SONNABEND: Thank you.

MR. CHAPMAN: I also have a question from Ashley.

MS. SWAFFAR: Hi Zea.

MS. SONNABEND: Hi.

MS. SWAFFAR: I've got a question for you on the non-certified handler operation where you talked about, you know, like farmers going to cold storage and just other storage. Do you think there's any risk factors there that we

really should address? Or should we just exempt them all?

MS. SONNABEND: No, because as an inspector it's very easily auditable. We have what's called an affidavit that the cold storage operator signs. And they have to have a designated organic area within it, and only keep organic products in there. And yes, it's fairly easily auditable. And if it came up in inspection that there might be a problem, we could always go visit. The inspector could visit each storage facility.

MR. CHAPMAN: Any other questions for Zea? So Zea, this is Tom. I also have a question on food operations. Two questions, or a question and a statement really.

So the first question is, do you think it's an unreasonable burden to require small farmers to have a label on their products being sent to the third-party storage that specifies what's organic, who certified it as organic, and who they are?

MS. SONNABEND: Yes. I mean right now we only, we have to label things of course, but bin tag labels for instance only say organic, and the name of the farm, and what the product is. We don't have to say who certifies it or who's going to handle it later because it's us. The name of the firm is already the handler.

And then the size of the bin tag, you know, then you'd have to design it like a professional label and CCOF would have to approve it, or you know, whoever certify it. It's a pain.

And one other thing to that is sometimes when a farmer puts it into storage, they don't know who's going to handle it. If I have apples that aren't sold yet, and I might send them out for juice or packing, I don't know who's handling it.

MR. CHAPMAN: The name wouldn't be the future handler. The name would be the last handler, which in this case would be your operation in your example.

MS. SONNABEND: Oh, well that's not clear from the proposal.

MR. CHAPMAN: So any future labeling of that certified product would then need to be a certified operation in and of itself with labeling and expiration?

MS. SONNABEND: Yes.

MR. CHAPMAN: And then one other comment I did have on this, and we'll need to go back and look further, cites a plan to talk about at the meeting, but I don't know if the way we wrote our guidance if it would affect third-party warehousing. Because I think we mostly would mostly direct it toward the sale of products.

So a third-party warehouse itself, in the warehousing activities is not, you know, involved in sales, unless you are selling to that warehouse, which is a different situation. But if you're just contacting for the storage situation, I don't know if that was covered under ours and I would need to go back and read it in

detail for --.

MS. SONNABEND: It's very vague. I mean it's, it could be or it couldn't be. It's not written clear enough for that in my opinion.

MR. CHAPMAN: Any other questions for Zea? Zea, thank you very much for your time and go enjoy farming.

MS. SONNABEND: All right. Thank you.

MR. CHAPMAN: Up next we have Guernina Hamza. I haven't seen her on, so Guernina going once, going twice, all right. Up next we have Brian Filipowich followed by Donald Lusk, who we also haven't seen. So Donald, if you're there, can you send a message in to us with your phone number? After Donald, we have David Zuckerman. Brian, if you could start with your name and affiliation for the record.

MR. FILIPOWICH: Yes. You can hear me?

MR. CHAPMAN: Yes, we can.

MR. FILIPOWICH: Hi. I'm Brian Filipowich. I'm commenting from the Aquaponic

and Hydroponic Organic Coalition. I'm also the Aquaponics Association.

The organic label is ultimately about empowering consumers to find products that match their values, means that a consumer doesn't have to walk into a grocery store and spend an hour researching every head of lettuce they buy, like where it came from.

So then the question is, what are these values that consumers care about that they want to see in the organic label? And if you look at them, you will find that aquaponics and hydroponics can meet all these things that consumers care about.

The first is that there's -- aquaponics and hydroponics grow produce without synthetic pesticides or fertilizers. They are also very good at cycling resources and being very efficient with resource use, so they're very sustainable.

And thirdly, production that relies on biological systems and robust microbiology.

Consumers want to know that their produce has been grown in the same way that it's been grown since the dawn of time, rather than in some sterile environment.

So Aquaponics and Hydroponics mesh all these things that the consumers want in their produce when they see that label.

Now we approach a time in development of the organic program in which there's a big supply shortage. There's many places in our country where they don't have access to much or a large variety or affordable organic produce.

So according to the laws of supply and demand, there should be investors and growers rushing in to meet this supply shortage. Why aren't they?

For soil growers, it's because they have to go three years leaving their fields fallow. So you can't just start growing new organic crops.

For aquaponic and hydroponic growers, it's this indecision about whether they will

retain the organic eligibility because the organic price premium is so important in business decisions, and brings people into the market.

So if the NOSB is able to send a clear signal that aquaponics and hydroponics remain eligible for organic certification, we'll see resources flood into aquaponic and hydroponic growing. And this will be a benefit for everybody.

It will be a benefit for sustainable growers. These are the people that are trying to make the changes we need in our agricultural system to save our planet. They will gain financial viability, access to more resources, skilled labor and technical advancements.

Consumers will see more and more affordable organic produce. The environment will benefit because aquaponic and hydroponic systems are constructed as closed-loop systems with minimal to no agricultural runoff, and minimal water and resource use.

And finally, the economy will benefit

because aquaponic and hydroponic systems, they create controlled environment, year-round jobs, even in urban areas and drought-stricken areas. So everyone benefits from organic aquaponic and hydroponic. That concludes.

MR. CHAPMAN: Thank you Brian. Any questions for Brian? Being none, thank you Brian for your time. Up next I have Donald Lusk followed by David Zuckerman and then Nicole Dehne. Donald Lusk, are you here?

MS. ARSENAULT: Tom, I don't see him in the list. There was an area code that, his area code, but I guess it's not him.

MR. CHAPMAN: Donald going once, Donald going twice. All right. We're moving on to David Zuckerman. David, are you here?

MR. ZUCKERMAN: I am here. Can you hear me?

MR. CHAPMAN: I can. Hold on one second David. David, we'll go with you next, followed by Nicole Dehne, and then Jackie DeMinter after that. David, if you could start

with your name and affiliation for the record.

MR. ZUCKERMAN: Sure. My name is David Zuckerman. I'm a certified organic farmer. I'm also the Lieutenant Governor of Vermont with many friendly organic communities across Vermont and elsewhere.

Thank you for taking the time to listen to many of us with our thoughts and concerns. My comments are related to the hydroponic issues that was actually just recently spoken to you by Brian.

In general, by the way I would also state that I don't grow crops that are in competition right now with hydroponics or even about my individual business in any significant way.

But I will say as Lieutenant Governor, I recognize that consumer confidence in the product and product accuracy in labeling is critically important. In Vermont, we have experienced that with maple syrup and other products where the consumer possession of the

product and the label does create value, and that's critically important to organics as well.

I am frankly concerned that hydroponics are part of the organic labeling system at this time, and I would like to see it be discontinued.

Because Brian, one of the things he mentioned, was production since the dawn of time, production of vegetables has not been done hydroponically since the dawn of time. Vegetables have been soil-based, and organic production fundamentally is soil-based. We need this production as building the soil, and building it healthier for the future.

What people think organic means and what people want it to mean are very important. There is 2016 Consumer Reports perception survey on words like natural and organic. And throughout, it was clear that what people wanted was clearly more; more strict and more clear, not more broad.

I couldn't find a survey question

specifically that said, do you think organic means grown in soil, or should it be grown in soil. So I don't know the answer of the consumer perception. But with my customers, I can certainly hazard to guess that they clearly expect it to be grown in soil.

And what organic is about is building the soil and making it healthier. That's why we rotate crops, we plant cover crops, and we test our soils for soil health issues. But this includes in depth microbes; all the different interactions in the soil and the associated relationships with the plants.

And while we all do want organics to be more accessible to more people, as Brian states, the way to make it more accessible is about a better economic justice system. And that's not really the purview of obviously this committee.

But what we should not be doing is expanding production or reducing costs to the consumer by watering down the standards. And I

do mean double entendre there.

Strong standards are the key to the integrity of organic products. That's what will build the consumer demand which will then have more farmers meet that demand and expand interest. We're not leading an immediate gratification society. We need to change accordingly.

In closing, as an elected official and a realistic organic farmer, I want to paint the following parallel. Organic farming without soil is like democracy without people. Thank you very much.

MR. CHAPMAN: Thank you. Any questions for David? I see Harriet.

MS. BEHAR: Hello David. There's a lot of perception that consumers only care about the inputs used on organics. That they buy organic produce just because they believe there's no pesticide residues. I personally don't believe that. I think that they care more about the greater ecosystem. Can you speak to that a

little?

MR. ZUCKERMAN: Well, I don't have statistics to speak to that, but I would certainly be able to indicate through my CSA and the customers that I have at the farmers market, you know, well over 1,000 to 2,000 people between those two, that the inputs are clearly one piece of it.

But there's no doubt in my mind that individual health, they perceive it as healthier. Now one could argue hydroponics may meet that criteria. But I do think many also consider organic better for water quality in terms of the streams and rivers. And if we have more organic being done through hydroponics at a lower cost, we can actually have more conventional agriculture on the lands next to rivers and streams.

So our consumers, certainly in Vermont, are pleased to see water quality improvements through organic agriculture which I think goes to that broader message that you were

just asking about in terms of taking beyond themselves, but to what is the long-term food production system in terms of soil health, climate.

I happen to raise chicken and pigs, which means I've also pastured to organic standards and beyond organic standards according to some animals that are raised organically out there without very much access to pasture. But with rotational grazing, we're also sequestering carbon.

And so many consumers are seeing organic as a far more holistic production system than just what the inputs are and what the product produced is.

MR. CHAPMAN: Thank you. Any other questions for David? David, I have a question for you. You kept using the term hydroponics and talked a little bit about aquaponics, but there's a spectrum between in-ground and, you know, fully listed hydroponic operations. Where do you think the line is appropriately drawn?

MR. ZUCKERMAN: I'm not sure I know the distinction you've just indicated because I don't produce using any of those methods, so I'm not an expert in them. So if you could either give me a little more clarity on what the differences are, I could tell you where it would fall.

But in general, I think it should be, production should be soil-based. And so if there's hydroponics and aquaponics, whether it's one of those with fish and so forth, then, you know, that's still -- neither of those are soil-based as far as I understand it. And if I'm mistaken, please understand that I may be.

MR. CHAPMAN: There's also a spectrum of container-style production that's grown in containers with what's possibly known as potting soil?

MR. ZUCKERMAN: Well, I think if it's better, geology matters, and again I don't know the expert there, but if you're growing in compost and soil and that soil is getting turned

back in and then new soil is used, and you're again part of a soil-based medium that is potentially recycled into, you know, a compost facility or broader soil arenas.

Then we are also taking soil from those places to grow in pots to use better water management, then I think that's reasonable. But if there isn't soil and all of the associated microbes and complexity affiliated, I would lean towards staying more strict than going more loosely.

I just don't think that we should loosen standards to meet ancillary demand around organic. We should work to bring more people to the high quality standard, the holistic standard that organic was originally intended to be, even before there was a national standard.

MR. CHAPMAN: I don't see any other questions at this time, so thank you for your comments.

MR. ZUCKERMAN: Thank you.

MR. CHAPMAN: Next up we have Nicole

Dehne followed by Jackie DeMinter, and then Lillie Snow. Nicole, are you here?

MS. DEHNE: Yes, can you guys hear me?

MR. CHAPMAN: Yes, we can. Can you start with your name and affiliation for the record.

MS. DEHNE: Absolutely. So hello. My name is Nicole Dehne. I'm the Certification Director for Vermont Organic Farmers. That's NOLA Vermont's USDA accredited certification program. We currently certify over 700 organic farmers and processors in Vermont.

And I appreciate the opportunity to comment on a few issues that are critical to our certified producers today, and I want to acknowledge and thank Board members for their hard work and dedication being on the NOC.

So to start, regarding the organic seed guidance, the OS supports NOC's recommendation clarifying the NOC guidance document 5029. However, we do not support the additional record-keeping requirement that asks

producers to justify the use of non-organic seed for each variety on the list.

This language we feel is too prescriptive and is not a sound and sensible approach. In addition, we do not agree that the regulations should include language that requires full compliance of 205, 204A, and it doesn't seem fair to burden the farmer with sourcing organic seed and planting staff that may not exist. We suggest including language that requires continual improvement without requiring full compliance.

In regards to hydroponics, as you just heard, our certified organic producers feel very strongly that hydroponic, aeroponic, and aquaponic should not be labeled as organic.

Our preferred approach is to require that organic crops are grown in the ground while exempting production sold in pots like herbs and bedding plants.

However we appreciate the work and the questions posed in the NOC discussion document

regarding field and greenhouse container production, and we strongly agree that these issues need to be addressed.

As far as artificial light, there would be no significant impact to Vermont producers if the standards required all natural lighting. In fact, we believe that it's against the principles of organic production to use artificial light in lieu of a renewable resource, the sun.

In addition, the use of artificial light seems counter to the principles that require livestock to have daily access to direct sunlight. So we feel that if natural light is important for animal health, then we should acknowledge that it's also important for the production of healthy plants.

As far as synthetic mulches, producers who use synthetic mulch in outside production areas, we feel they should be required to implement practices that would create habitat for wildlife and promote biodiversity. So covering

acres of fields with synthetic mulch, we feel that's going to have a negative impact on soil and the surrounding natural environment.

As far as crop residues and substrates, organic producers should be held responsible for recycling crop residues and substrates. In addition, we think that producers should be required to recycle plastic or non-compostable containers, and all certified producers should be required to address the use of plastic on the farm. I really liked the comments from the biodegradable mulch folks in some of those pictures.

And then as far as clarifying emergency for synthetic parasiticide usage, we feel that the NOC did a great job on that proposal, and it's going to help us with enforcing those regulations consistently.

MR. CHAPMAN: Thank you, Nicole. Any questions for Nicole? I don't see any questions for Nicole. Thank you very much for your comment.

MS. DEHNE: Yep. Thank you.

MR. CHAPMAN: Up next we have Jackie DeMinter followed by Lillie Snow, and then Joel Kelly. Lillie, I have not seen on the list, so if you're here, can you text us your phone number in the chat. And Jackie, are you here? Jackie, I've got you muted, hold on. Jackie are you unmuted now?

MS. DeMINTER: I believe I'm unmuted. Can you hear me?

MR. CHAPMAN: You are unmuted. Jackie, could you start with your name and affiliation for the record.

MS. DeMINTER: Good afternoon. My name is Jackie DeMinter. I am a Certification Policy Manager at MOSA. We certify approximately 2,000 operations throughout the United States including dairy, livestock operations and about 1,700 certified per crop.

My comments will address clarifying emergency for use of synthetic parasiticides and strengthening feed guidance. Thank you for the

opportunity to comment on those topics. The NOSB's position to encourage and embrace growth of the organic industry and to strengthen the organic field, we appreciate and encourage a patient process for coming to the right final recommendation.

We support the general direction of the NOSB to further define parameters for custom management plans on organic operations. The proposal gets at the right intent, but suggested text and location in the current rule had us recommending that this be further discussed.

As certifiers, we need real language that's enforceable and clear. Guidance would probably present the most flexibility for examples in considerations in different circumstances, but that idea aside, our written comments offer alternate language and placements in the rule.

We think that a new proposed rule would be better located in CFI 238D, where the allowance fee of such medication is located,

known preventive practices and better married biologics are inadequate to prevent sickness.

We are hopeful that the OLPP Rule will become a factor and it will immediately have strengthened the attention to parasite management plan. Our intention was to better assess the plan for prevention already in place, emergency measures planned in the event of an outbreak, and why such a situation may arise.

In our experience, an emergency would occur when one or more animals are going to die, or be permanently damaged, or going to spread their parasites to more livestock if they do not receive treatment right away.

We have to be sure that adequate prevention methods are built in to the organic management system. But even with these best measures in place, parasites are adaptive and they can appear quickly.

On the flip-side, we would not consider regular outbreaks as a result of inadequate pasture management to be an emergency.

We appreciate that the proposed approach could curtail regular, routine use of parasiticides due to inadequate management activity.

Moving on to the proposal for strengthening feed guidance, we've provided detailed comments in the Spring and have again this Fall. We appreciate and support the Committee's efforts to strengthen the organic feed guidance.

However, we do have some concerns about certifier enforceability impracticality. For example, having full compliance with organic food usage seems impractical for some growers, and requiring the farmer to prevent and avoid contamination from the stated methods seems as if it would be particularly challenging to enforce. Our written comments outline concerns and questions, and offer alternate language in some cases.

Thank you for your work on these challenging and precedent-setting topics.

MR. CHAPMAN: Thank you, Jackie. Any

questions for Jackie? I see Ashley.

MS. SWAFFAR: Hi Jackie. Thank you for your comments. You were talking so quickly, I was trying to take notes. Did you feel that guidance would be better for emergency -- defining emergency use for parasiticides?

MS. DeMINTER: I think guidance would provide the most flexibility for such a robust, you know, step-up type program the NOSB is talking about. We talked about this in the Spring, too, and -- you know, guidance was one idea, and you know obviously of the proposal here. And if I remember seeing that you guys had put that through. So setting aside the idea of guidance, we are proposing alternate rule placement and language for your consideration.

MS. SWAFFAR: Thank you. You know how I feel about guidance.

MS. DeMINTER: I do.

MR. CHAPMAN: Okay, Harriet.

MS. BEHAR: Hi Jackie.

MS. DeMINTER: Hi Harriet.

MS. BEHAR: Also what I wanted to just bring up about guidance versus rule. And part of that is also providing the operator somewhat of a road map so they understand. Guidance is kind of more for the certification wonks. It's very rare for an operator to actually try to figure out what is the regulation they have to follow by going and looking at guidance.

So that was part of the thought of putting it in the rules so people could see. But I've been a little bit drowning in hydroponic comments, but I will make sure that I get to yours when I look at the emergency treatments.

MS. DeMINTER: If you have any questions about our suggestions or ideas about location or placement in the rules, feel free to contact me.

MS. BEHAR: Okie dokie.

MR. CHAPMAN: Okay, thank you very much.

MS. DeMINTER: Thank you very much.

MR. CHAPMAN: I don't see any other

questions at this time. Up next we have Lillie Snow, followed by Joel Kelly, followed by -- sorry if I butcher this -- Joszhe -- J-O-S-Z-H-E -- Tosa. Lillie Snow, are you on the line? I don't see your phone number.

MS. ARSENAULT: I'm not finding Lillie either, Tom.

MR. CHAPMAN: All right. Lillie going once, going twice. Joel Kelly. Joel Kelly, are you here? I'm not seeing Joel on the list.

MS. ARSENAULT: No, I don't see Joel either.

MR. CHAPMAN: Joel going once, going twice. All right. Joszhe -- J-O-S-Z-H-E, sorry again for butchering your name -- are you on the line? I'm also not seeing your phone number. All right. Going once, going twice. Up next, and I --

(Telephonic interference.)

MS. ARSENAULT: Can everybody hear me okay?

MR. CHAPMAN: Yes.

MS. ARSENAULT: We're getting some feedback.

MR. CHAPMAN: We're getting feedback.

(Simultaneous speaking.)

MS. ARSENAULT: Is that better?

MR. CHAPMAN: Yes, that solved the problem. All right. If you'll give me one second, I'll announce the next people. So after --

(Telephonic interference.)

MS. ARSENAULT: If you could, if you're on your computer and on the phone, make sure your speakers on your computer are off. That's generally how we end up with feedback like that.

MR. CHAPMAN: So after Alexis, we have Cody Kiroff and Amalie Lipstreu. And Alexis, if you could begin with your name and affiliation for the record. Alexis, are you there?

MS. BADEN-MAYER: Yes, I'm going to turn you off and then begin.

MR. CHAPMAN: Okay.

MS. BADEN-MAYER: Hi, I'm Alexis Baden-Mayer, the Political Director of the Organic Consumers Association. OCA is the largest network of organic consumers. We reach 400,000 people via email each week, and connect with millions each day via social media. Thank you to the NOSB and the National Organic Program for providing this online public comment opportunity.

I am here today to speak in favor of the Crops Subcommittee proposal for hydroponic and container growing recommendations with the comment that sunlight and fresh air should be required.

This week I submitted 15,000 signatures on a petition in support of the proposal. That petition continues to gather signatures and we'll update you in Jacksonville on the final numbers.

Health currently is the number one reason why people buy organic foods. So our members were alarmed to learn that hydroponic

greens can cause high concentrations of nitrate, which can be toxic and have been linked to stomach cancer.

Health drives most sales of organic foods. What a significant percentage of organic consumers, especially among the hard-core, cite healthy environment as one of the reasons they buy organic.

A 2016 Pew Research Center study found that among the people who say most or some of the food they eat is organic, 88 percent said they ate organic to get healthier food, and 48 percent of those said they ate organic to help the environment as well.

Our team at the Organic Consumers Association is particularly passionate about the potential of organic agriculture to reverse climate change. In 2014, we formed an international coalition to advocate for this cause. The coalition, Regeneration International, is working to increase participation in the Four for 1,000 global

initiative to increase carbon sequestration in soils for food security and climate.

So far this global agreement has been signed by 37 countries, and it's humanity's best hope of drawing excess carbon, carbon dioxide, from the atmosphere to get CO2 levels back down below the dangerous tipping point of 350 parts per million.

We promote organic agriculture as the best way to do this. But that argument doesn't work if you're talking about so-called organic production practices that don't use soil.

And, in fact, as the crops committee pointed out in its proposal, the energy use and the consequences of carbon footprint of indoor soilless growing systems is enormous.

Indoor lettuce is a carbon sasquatch. That's how to Tamar Haspel, the Washington Post food columnist put it.

The Organic Consumers Association strongly supports the 2010 NOSB recommendation on production standards for terrestrial plants in

containers and enclosures, greenhouses.

We are very glad that the crop subcommittee continues to support the reasoning of that recommendation.

I'll close by reading from that recommendation, quote, the organic farming method derives its name from the practice of maintaining or improving the organic matter, carbon containing content of the farm soil through various methods and practices.

I urge the entire NOSB to hold true to this most important organic principle and approve the crop subcommittee's recommendation with the caveat that soil, per se, sunlight and fresh air to be included.

Thank you.

MR. CHAPMAN: Any questions from the Board?

Ashley, I see you have a question.

MS. SWAFFAR: Hi, I actually want to thank you for your comment.

I didn't quite get everything you

said, though. But, first, you made a statement that for the hydroponic lettuce has higher, did you say, nitrates when it was growing? Is that what you said?

MS. BADEN-MAYER: No, that's actually from the subcommittee's proposal. I had not heard of that before I read the subcommittee's proposal.

But then I looked it up and, apparently, there was an expose in the U.K. where hydroponic greens were tested for nitrates because they have a limit on the amount of nitrates that can be in food, maybe greens specifically in the U.K.

And they found that hydroponically grown greens had levels of nitrate above that limit. And so that's how people became aware of this problem. Yes.

MR. CHAPMAN: Ashley, do you have a follow up or is that --

MS. SWAFFAR: Yes, I do. Was that in organic or was that conventional? Do you, I

mean, do you know?

MR. CHAPMAN: Hold on.

MS. BADEN-MAYER: I believe that was conventional hydroponics that had the highest levels of nitrate. And I don't think they had organic in their study when this happened.

But it's certainly something that, you know, as the crop subcommittee proposal points out, this is something that happens because the nitrogen fertilizer is in liquid form. And so, the plant takes it up very quickly and it can accumulate dangerous levels of nitrate in that way.

So, it could happen in a so-called organic hydroponic system that had liquid nitrogen fertilizer.

MR. CHAPMAN: Okay --

MS. SWAFFAR: I just want to follow up.

MR. CHAPMAN: Okay, yes, we'll go for one more.

MS. SWAFFAR: Yes, I just want to

point out that you said it could happen. There's no research saying that because those were all in the conventional hydroponic systems, not organic systems? That's all I have.

MS. BADEN-MAYER: Yes, I would love to have the data, you know, what we're considering an organic hydroponic system should check their nitrate levels.

But, you know, this is something that wouldn't be monitored under the current regulations.

MR. CHAPMAN: Okay, next I have Asa, then Steve, then Sue. Asa?

PARTICIPANT: With all due respect, may I chime in just for a brief second on a question for that last speaker?

MR. CHAPMAN: No, no, sir. We don't take any questions from the public, only from the Board.

PARTICIPANT: Thank you very much.

MR. CHAPMAN: Asa?

MR. BRADMAN: Yes, one quick thing.

I mean, I've been agonizing over these issues and I've talked to many people in certainly at least in California and many people in different strata.

And pretty much everyone on the consumer side is really comfortable with hydroponic and non-soil systems, you know, if you look at it online.

So, I'm curious, you know, it sounds like your membership differs from that, certainly bigger than the sample I have. But I'd like to have more comment on that.

The second thing is about the energy inputs related to lettuce. I mean, I think that's, you know, an interesting issue and really important.

What it leads to, though, and this is where I'm kind of concerned is that, essentially, what you're saying is that we should calculate the carbon footprint of every product.

So, you know, for importing cotton from India or, you know, berries from South

America or hydroponic production in Arizona or, you know, something grown in California, it kind of leads to a trend that, you know, it seems like, I mean, that's the ultimate implication of what you're saying.

So, I was wondering if you want to comment on that? And, certainly, I would actually support calculating the carbon footprint of every product, you know, in really every arena so we understand that.

But I think there's an implication that goes much beyond just the soil, you know, non-soil debate.

MS. BADEN-MAYER: Well, soil is essential, actually, to this debate, it's central because, conventional agriculture, when you total up every aspect of the supply chain starting with cutting down trees to -- et cetera.

Then all the way through to global transportation, refrigeration, et cetera.

About 57 percent of the global greenhouse gas emissions come from our global

food system.

Now, organic is the only aspect of the global food system that's reversing that trend through having the capacity to suppress the carbon in the soil.

And conventional agriculture can't do that. It can reduce soil erosion, soil loss. It can reduce emissions from conventional agriculture, but it can't start to reverse that trend and actually draw carbon out of the atmosphere and trap it in the soil. Only regenerative, organic agriculture processes can do that.

And so, if we promote, you know, my organization promotes organic agriculture on a climate change position. But we can't do that if we're doing this carbon sasquatch lettuce, you know, growing indoors using all artificial energy inputs.

You know, they even blend natural gas in some hydroponic systems to pump carbon dioxide into the indoor environment.

So, it's all, you know, and they have to, of course, replace the energy of the sun with artificial light. It's no wonder that this is the most energy intensive way to produce food possible.

So, yes, we're very opposed to that type of system. You know, you asked sort of the side question about whether I think that we should calculate the carbon footprint of our entire food system. And, of course, many people have.

I don't know if that fits into the organic standard, but I think that, you know, intuitively, when the organic law was passed in 1990 before we were calculating carbon footprint in agriculture the way we are today, I believe, you know, the public is more aware.

There is this intuitive understanding of soil and soil health as essential to organic. And that's just as good of a reason to approve organic systems.

MR. BRADMAN: Yes, and I -- let's

give me one extra question in there.

I totally understand, okay, but what I'm asking about is the product specific carbon footprint. And, I guess that's just something that's maybe more, you know, maybe it's a little more on the philosophy end.

But if we're going to rate products and rate production system, I just think it's important to really look both at the detail level and at the general level.

And I totally understand what you're saying about, you know, soil sequestration of carbon and the potential benefits of that. I mean, I think, you know, I'm sure all of us are on board with that.

MS. BADEN-MAYER: And to be real clear that, you know, while I used that phrase lettuce is a -- indoor lettuce is a carbon sasquatch, it wasn't about lettuce, it just happened to be that they studied lettuce because they, you know, you have to study something specific and there aren't that many studies done on this.

So, I don't think that, you know, like looking at a soil system versus a soilless system, obviously, the soil system, especially an organic soil system has the capacity to reverse that kind of impact with carbon sequestration.

Whereas, the soilless system with all of this energy intensive input is always going to be a carbon sasquatch. It doesn't matter if it's lettuce or if it's something else. It's -- that's the whole system is obviously a carbon bomb.

MR. CHAPMAN: Okay. I think I have Steve, then Sue. Ask your question, Steve.

MR. ELA: Yes, I guess my question comes to, we had statements to the Board and on the Board, that the perception, you know, of organic is that there is this no pesticides and no GMOs and that's really to most consumers what is important, you know, for being organic.

And that, you know, you said that 88 percent of your consumers went to 44 percent want to help the environment.

And we certainly heard claims or statements that hydroponic or container grown systems help the environment because they use less water, they have less runoff and some of these other things.

But you're talking about the soil, the carbon sequestration, but can you just say from your organization standpoint or your consumer surveys a little more about, you know, that 44 percent wanting to help the environment, what that -- could you flesh that out a little more?

It seems that we're at this debate of, you know, what does organic mean to the consumers? You know, if you just said, no, from this prospective, most consumers, they just want, you know, they don't really care about the hydroponic issues.

MS. BADEN-MAYER: Well, we didn't conduct this study ourselves, it was the Pew Research Center. The 2016 Pew Research Center study on attitudes towards food amongst consumers on a wide range of issues.

So, organic was one piece of that. And, in their published report, they didn't break it down any further than that. They said, 88 percent said they ate organic to get healthier food and 48 percent of those said they ate organic to help the environment as well.

So, I mean, I'll fully admit that health is the number one driver for consumers learning about and getting to access organic food.

But once they're doing it, and you learn that there are environmental benefits as well, I think that could only make you more committed to the cause of organic.

MR. CHAPMAN: Thank you. And up next I have a question from Sue.

MS. BAIRD: Yes, hi, I'm really -- I appreciate your comments. I am a little concerned that you have used a study for conventional hydroponics to assert that organic hydroponics are full of nitrates.

It's my understanding, talking and

reading this hydroponics both organic and non-organic because that is the key differentiation between the organic hydroponic production and conventional hydroponic production.

Conventional is, in fact, a large commercial survey is what a lot -- it's all implicated. They use urea in the medium, they use nitrate in the medium, and it's all about adding various nitrates or just nitrogen production systems of import -- in nitrates in their systems.

Organic hydroponic consultant assert that they are using biologically safe input that does not result in the nitrates or very low additions of nitrates.

So, could we address that and then I'll do one follow up question, is that you're saying, at least to me, it seems to imply that you had stated that organic hydroponics always uses a lot of artificial light.

And yet, people that I've seen and heard of hydroponics, both conventional and

organic, many of them, I would say, a majority of those that I visit are being produced in greenhouses which allows the natural light to come through the greenhouses.

So, two questions, please.

MS. BADEN-MAYER: So, the nitrate issues are covered very well in the subcommittee proposal. But I'll just read one piece of that.

It says, in addition to bypassing naturally occurring co-evolved relationships between plant roots and the many functional trait types of rhizospheric organisms, nutrient bathing is an unbuffered system.

For example, nutrient solutions contain high concentrations of nitrate which plants can accumulate beyond their requirements storing excess nitrate in leaf and root vacuoles.

This is particularly problematic for some species like spinach and chard. Nitrate is toxic in food, has been linked to stomach cancer and can kill livestock.

So, you know, that's all from the

subcommittee proposal. And, as I mentioned, I did look that up to verify that.

So, you know, maybe this proposal needs to have something about testing for nitrate levels. But, you know, their proposal tries to remedy it by requiring more of a soil-like growing medium and limiting the liquid fertilizer.

MS. BAIRD: Thank you, I appreciate that.

Again, my understanding is that organic hydroponics are not using nitrate additions. If -- unless it would be lettuces, and some of them are using less than 20 percent nitrates, which is also allowed currently in soil production.

They're not -- they're using a biological base input. That's what I'm understanding.

Could you address my question about using artificial light in hydroponics as opposed to using artificial light in regular soil-based

greenhouses, please?

MS. BADEN-MAYER: Yes, we think that sunlight is best, I mean, just to state it most simply. And it would be great to have a requirement in here for sunlight for these growing systems.

MS. BAIRD: But it should be written in for strictly the hydroponics but not soil-based? It seems to me that that almost contradicts requiring more one type of production than the other.

MS. BADEN-MAYER: Not at all, I don't think that the soil-based systems would have any trouble meeting that sunlight requirement. So, sure, it could be a requirement for everybody.

MR. CHAPMAN: Okay, thank you Board Members for your questions. And thank you, Alexis, for your time.

And we're going to have to move on down the list at this time, but we appreciate the good dialogue there.

So, up next I have Cody Kiroff, a call

by Amalie Lipstreu and then up after Amalie, James Sbarra.

Cody, are you here? We are not showing you on the list. All right, Cody, going once, going twice.

Amalie, you are up.

MS. LIPSTREU: Can you hear me okay?

MR. CHAPMAN: Yes, we can. And let's get started with you name and affiliation for the record.

MS. LIPSTREU: I'm Amalie Lipstreu of the Ohio Ecological Food and Farm Association. And I'll speak to two issues this afternoon.

And the first is organic imports. Our farmers have been feeling the effects of the rising imports long before Washington placed NOP action.

Producers were told their grain was no longer needed, as imported grain surged into the U.S.

When domestic products are overlooked in favor of cheaper, and, we now know, fraudulent

imports, the issue is more than the need to increase domestic supply, it's also about efforts to subvert the integrity of the organic industry to meet economic goals.

We appreciate NOSB's quick action to move this issue through guidance. We ask for your continued diligence. Please ensure everything that can be done is being done to ensure a level playing field and monitor NOP compliance with the nine recommendations and time lines outlined in the recent audit report of the USDA Office of Inspector General.

Oversight improvements cannot happen soon enough for our organic producers who have lost significant income as well as faith in the ability of the NOPs to take swift action.

Secondly, the impact of the oil and gas industry on organic farms requires your attention.

We face from California to Pennsylvania, Oklahoma to Wisconsin and more, the oil and gas industry is creating negative impacts

on organic farms.

We have proposed discrete action the NOSB can take to better understand how organic farmers are uniquely impacted by this industry.

Support certifiers that need to provide guidance to operators, and also, that we prevent the loss of certified operations.

Farmers like James, whose picture you can see, who has three pipelines crossing the grazing fields of his third-generation dairy farm.

In the past year and a half, OEFFA supported James, providing tools in the form of an organic add impact mitigation plan and worked to ensure adoption of the recommendations that continue.

Despite the incredible disruptions of his farm soil, animals, and pasture, he has been able to keep in operation, to keep his certification and, importantly, to keep his contract so that he remains on the milk truck and will not be the generation to lose the family

farm.

Please consider one or more of the seven actions outlined in our written comments as they move forward on this important issue.

Thank you.

MR. CHAPMAN: Thank you. Any questions from the Board?

(No response)

MR. CHAPMAN: Hearing none, thank you very much for your comments.

Up next, I have James Sbarra followed by Luke Howard and Erin McQuaig, sorry if I butchered that name or botched it up.

James, are you here?

MR. SBARRA: I am, yes. You ready?

MR. CHAPMAN: Yes, we can. James, can you give us your name and affiliation for the record?

MR. SBARRA: Yes, my name's James Sbarra. I am an aquaponic farmer; we've been doing it for five years.

MR. CHAPMAN: Excellent, go ahead,

James, with your comments.

MR. SBARRA: Yes, so the question, what is more important, water or soil? If there is no water, plants cannot uptake nutrients and they wither and die.

So, why does it matter if the nutrients are suspended in water or suspended in soil? And the mechanism to make them available to the plant is water. Without water, there is no life.

We have proven we can go without soil, and you know you cannot go without water. So, which one is more important?

And to judge the aquaponics, it seems like the Board is concerned about food safety. It seems the area where we either easy to address the difference between a fish tank and plant life and a proper setup systems with fish waste should never come in contact with plants and roots.

Instead, that waste is mineralized and released as nutrients into the water, then that water is taken to the plant.

We have never had a food safety issue in five years and we get ourselves tested regularly.

And the exemptions, it seems like the review committee is trying to allow some exemptions is in the future needs.

For instance, urban spread could be allowed to be soilless. The review board states that's too hard to grow them in soil. Well, why is that? You can definitely grow herbs in soil, there is no logical reason why some plants should be allowed to go soilless while others cannot.

And addressing the high nitrates, aquaponic farmers do not rely on adding nitrates as they happen organically from bacteria that convert the ammonia produced by fish into nitrates.

This biology exists, it's backed by studies and the fact that the fish have died, without that biology is proof enough.

It seems like a big change in soil health. Their document stated that all organic

farmers should get their soil fertility from compost.

There are over 3,000 OMRI listed fertilizers. If all organic farmers were getting their nutrients from compost, then why do all these products exist?

Not one person against aquaponics has pressed on the topic that we do improve the soil health by adding fish waste to the soil. Using waste as a compost producer.

There are so many opinions and not facts in that document. For instance, there is one plant that's different in aquaponic plants, nitrate toxicity, shifting impacts of nutrients.

Aquaponics, as I note, ecological complexities and it is --- to all life, energy needs.

Are we going to disqualify a farm for using fossil fuels to ship their products to other countries?

Should we impose a time limit on tractor use?

Just because, you know, just in creating, say, daylight, use too much energy with tractors, they've being paying their fines in, seems a little crazy.

Just in conclusion, we really think a good compromise would be to have a label and that states whether it's aquaponic or field grown. And if any action is going to be taken that more studies need to be done so that every point and counterpoint has an actual cited study that's relevant to the points at hand.

Thank you for your time.

MR. ARSENAULT: Tom, maybe you're still on mute or --

MR. CHAPMAN: Yes, I was, sorry.

James, thank you very much. And that explained why I was trying to interrupt you and you kept going.

MR. SBARRA: Sorry.

MR. CHAPMAN: No problem, James. Thank you for your comments.

Questions from the Board? I see Steve.

Steve, you had a question for --

MR. ELA: I've Steve --

MR. CHAPMAN: Go ahead.

MR. ELA: No problem, I was trying to be --

Just one quick question on your comment, yes, saying that it makes no difference whether the plant were suspended in water or soil because they're taking up all the nutrients from the water regardless.

But, I mean, there's a number of new studies coming out now about the mycorrhizal component of plant roots and that interaction between the soil nutrient solution and the plant root.

Could you speak to that as how, you know, how the mycorrhizal interaction is covered in your hydroponic system?

MR. SBARRA: Yes, so, again, we are running an aquaponic system. I can't speak for organic hydroponics outside of aquaponics.

But, for us, we are a 100 percent

reliant on biology because, like I said, without that, the fish would die from the ammonia toxicity that builds up. That's when the bacteria comes and converts that ammonia to nitrates eventually.

In terms of all the studies, I've been talking with, there's been some really cool studies going on with that. I don't think there are any studies for organic hydroponics or aquaponics that show that there is or isn't.

What I do know is that, our plants love it and our customers love it and, yes, I really, as I said, without water, there seems to be a very heavy emphasis on soil, for reasons that ignore aquaponics as a method to grow organically.

And it just seems like, well, water's a more important factor here because, without water, none would exist. Without water, that fungus isn't going to grow, that bacteria is not going to grow and the plant's not going to grow.

So, water seems to be the one thing

that we can't live without in terms of growing. And, so, why the focus is all of a sudden on soil when water has tons of biology in it already. It might be different biology, it might be the same. I don't have the study to show either way.

But I do think if we're going to make a decision on that, we should actually have those studies so we can make an educated decision.

MR. CHAPMAN: Thank you, James.

I am not seeing any questions from the Board at this time, so we'll move on down the list. Thank you for your comments.

Up next --

MR. SBARRA: Thank you.

MR. CHAPMAN: -- I have Luke Howard followed by Erin McQuaig and I don't see you on the line, just sending that message out asking for your phone number.

After that, I'm going to butcher this name as well, Abdeljalil, A-B-D-E-L-J-A-L-I-L, Mekkaoui. If you're here, please submit your number as well because we're not seeing you.

And, after that, it's Stanley Edwards. Stanley, I'm also not seeing you, if you could send us your number.

So, up next is Luke. Luke, are you here?

MR. HOWARD: I am here. Can you hear me?

MR. CHAPMAN: Yes, we can, Luke. If you could.

MR. HOWARD: Sure. Good morning and afternoon. My name is Luke Howard and I am from Blue River Organic Seed.

Blue River Organic Seed is an organic seed producer and retailer based in Ames, Iowa. We focus on organic field corn, soy beans, sorghum sudangrass and alfalfa seed.

We have a nationwide dealer network and a product line that can provide organic seeds to low crop farmers in every state.

But, before I get started, I just want to say thank to the NOSB members for the time that you commit to serving our organic community.

Without your hard work and commitment, we would not be as strong of a community as we are.

We at Blue River would like to emphasize the need to strengthen the organic seed rule. We believe that the crops committee has made great strides in providing recommendations for strengthening the rule.

But it must go further if we're going to protect the integrity of our industry and maintain our consumers' confidence.

There are a few points I'd like to make.

First, be careful making exceptions on using non-organic seeds. The best intentions never go unpunished. They may actually be used as a path on how to avoid using organic seeds.

Next, on farms like variety trials would be a dangerous method of measuring performance on the farm. Unless these are professionally executed and measured in an unbiased approach, the results could equal the opinion.

My final point is, by allowing conventional non-GMO seeds as it currently stands, is an unfair process. Conventional seed does not go through the same testing or protocols that organic seed goes through. Those facilities are not inspected for organic standards and the seed is not held to the same standards that organic seeds are held to.

We should be looking at the integrity of all seed used on the organic farms. By using conventional seed, we're allowing a large gap in our process.

In conclusion, I would like to remind you that sourcing organic seed is very different in an organic growing farm than it is our organic vegetable farm.

In general, grain farmers are not choosing varieties based on flavor and consumer preference, but merely on performance-based methods.

I want to say thank you for your time and hope to continue to work on this document and

make it work correctly for our organic industry.

Thank you.

MR. CHAPMAN: Thank you, Luke.

Any questions for Luke? I see Harriet.

MS. BEHAR: Hello, Luke.

So, on the on-farm trialing, as an organic inspector, I always encourage that. Of course, I couldn't tell people to do it, but I would ask the question, are you trialing things?

And, over time, I did see people buy a few bags of organic seed and then end up buying exclusively organic seed of the variety that worked well for them on their farms.

I think that trialing, if done correctly, we're not trying to prove that it was 108-day corn instead of a 112-day corn. We're just trying to see, is it of an equivalent variety which is what our regulation requires to the non-organic seed that they're using.

So, I'm hoping that we can work through that. And I know that the Organic Seed

Alliance is actually working on an on-farm trialing guidebook to help farmers really be able to prove to their certifiers that the organic seed was of not an equivalent variety or perhaps that it was.

And so, I've actually seen on-farm trialing work in the -- to the benefit of the organic seed producer. And maybe you can help us with that.

On the other side, I have also heard some farmers that, especially in alfalfa, that they're having some problems here in Wisconsin finding alfalfa seed that really perform as they wish of the organic variety.

MR. HOWARD: Can I comment on both of those, Tom?

MS. BEHAR: Sure.

MR. CHAPMAN: Yes, yes, Luke.

MR. HOWARD: Great. Harriet, good to talk to you.

And on-farm variety trials are extremely important. And we're on the same page

but they really have to be done right because, you know, being out in the field with Blue River, I've seen the opposite approach where a farmer is using pioneer untreated corn and is really married to the brand.

And he tries a bag or two of organic seed and, lo and behold, it's in a low spot in the field or a high spot in the field and doesn't perform equally across the field.

So, I've also had the same experience that you talked about where a farmer tries some organic seed and says, yes, it works great.

But I think we have to be careful when we do variety trials that they're done in an unbiased approach.

And so, we're very close to being on the same page. When it comes to alfalfa seed, there is a major crisis that we've all been dealing with in the organic alfalfa seed marketplace. And we're all starting to recover from that.

And so, alfalfa seed would be maybe an

exception to the rule at this point. But I think in a few years that exception would go away.

MR. CHAPMAN: Thank you, Luke. I also have a question for you from Ashley.

Ashley?

MS. SWAFFAR: Hey, Luke, thank you for your comments.

Just kind of this whole trial thing, do you see farmers, in your experience and out there working with them, they'll say, yes, I tried organic last year then that one didn't work for me so I'm just going to go back to conventional? Do you see any of that happening there?

MR. SBARRA: Yes, and I tend to think that we have -- I'm going to say this unofficially, but one of our largest competitors in the marketplace in organic seed is Pioneer Untreated Seed.

And so, we often have farmers that try a few bags or try, you know, a 100 acres of organic seed and then go back to the brand that

they're most comfortable with.

You know, I'm a farmer, and changing brands or changing what's sort of a pattern is a hard thing to do. But, in order to support out industry, we really have to be on board with organic seed.

MS. SWAFFAR: Thank you.

MR. CHAPMAN: Thank you, Luke.

Any other questions for Luke?

(No response)

MR. CHAPMAN: Hearing none, thank you for your time.

And we'll move on to the next speaker, Erin McQuaig, are you here? Erin? Going once, going twice. I don't see you.

All right, next one, I'm going to butcher this again, Abdeljalil. Michelle, you want to try that name?

MS. ARSENAULT: Maybe Abdeljalil?

MR. CHAPMAN: There we go.

MS. ARSENAULT: Mekkaoui?

MR. CHAPMAN: Are you here? And,

going once, going twice.

All right, third up is Stanley Edwards. Stanley, are you here?

MS. ARSENAULT: I haven't seen Stanley on the line nor his area code, either.

MR. CHAPMAN: No, neither have I.

MS. ARSENAULT: I just left him a message for him. We're about 20 minutes ahead.

MR. CHAPMAN: Tracy, are you here?

MS. MISIEWICZ: I'm here.

MR. CHAPMAN: All right, thank you. So, Tracy, you'll be up next.

Following Tracy is Kelsey Maben and Amber Pool.

Tracy, could you start with your name and affiliation?

MS. MISIEWICZ: Hi, my name is Tracy Misiewicz and I'm the Associate Director of Science Programs for the Organic Center.

We're a nonprofit organization that conveniently communicates scientific research on organic agriculture. And we collaborate with

academic and governmental institutions to fill gaps in our knowledge.

So, first of all, I just want to say thank you to the material subcommittee for its recommendation on research priorities. We appreciate both the creation of the Research Priority Framework and the efforts in each subcommittee to bring forth their priorities.

We're particularly pleased to see the inclusion of research priorities related to plant and safe management and the development of alternative materials on the national list.

We rely on your research priorities to guide the development of our own research projects and we've heard this same type of voice as priorities issues by many of the stakeholders that we work with regularly.

We have a number of paths in ongoing research projects that have been informed by and directly addressed in NOSB research priorities.

Some of our ongoing projects include one to develop organic solutions for citrus

greening disease, another to develop integrated pest management strategies in the U.S. organic rice systems, and a project aimed at developing an organic alternative to celery powder for curing organic meat.

Our suggestions for additional research priorities for 2018 to be considered for inclusion include the topic of biodiversity. And, in particular, we see a need for studies that assess not just the effect of different practices on biodiversity, but also the economic costs and benefits of implementing those practices on the farm.

So, this information --

(Telephonic interference)

MS. MISIEWICZ: -- the increasing farmer's option of those prices --

(Telephonic interference)

MS. MISIEWICZ: -- systems, believe that it's particularly relevant as the NOPs new biodiversity in resource conservation guidance comes online.

We also suggest a consideration of soil health for the inclusion of research priorities for 2018. Soil health has been getting a lot of attention lately, but there's still significant disagreement among the academic and agronomic communities on how to define soil health, how to measure it and the best recommendations to make to farmers.

We request that NOSB ensure that organic stakeholder voices are represented by requesting mandatory organic representation on USDA research boards and committees to ensure that the organic sector's interest and research needs are adequately and fairly represented.

And then, finally, regarding hydroponics and container production, we want to highlight that research identifies organic farming as a production method that can reduce the severity of climate change by increasing soil carbon sequestration.

However, it's still important to remember that organic systems do release

greenhouse gases and, when calculated on a per yield basis, most organic production systems are still not carbon negative or even carbon neutral.

So, we urge the prioritization of research that meaningfully quantifies the impact of different agricultural systems and products to mitigate climate change by including both greenhouse gas emissions and carbon sequestration.

Thank you.

MR. CHAPMAN: Okay, any questions from the Board? Emily has a question. I know you're muted, hold on. Emily, do you have a question?

MS. OAKLEY: Yes, can you hear me okay?

MR. CHAPMAN: Yes, we can now.

MS. OAKLEY: Great, thank you.

I was wondering if you could elaborate a little bit on one of the research priorities you suggested regarding biodiversity and the economic impacts of adopting biodiversity practices on the farm?

MS. MISIEWICZ: Sure.

Yes, so, there's lots of studies that show that organic -- different organic practices increase biodiversity on farms and there's lots of studies that show that there are benefits to farmers from implementing those studies.

So, things like, you know, increased beneficial predators that keep pest levels down. But there's also some research that's emerging that's showing that sometimes on the farm, there are tradeoffs.

So, one example is the research that's actually in review right now coming out of UC Berkeley. But just through communication with those researchers, what they found is that, you know, while they increase beneficial predators on those farms, they are also increasing the birds on the farms that are eating predators and they're eating strawberries in strawberry fields.

So, when it came down to it, when they quantified that effect, there was actually no benefits to increasing biodiversity when it comes

from, you know, an economic perspective because the farmers were still losing crops to those beneficial predators.

MS. OAKLEY: Thank you.

MR. CHAPMAN: Any other questions from the Board?

I had a question, you mentioned research on citrus greening. Was that research that you said you guys were already undertaking or research that you are recommending us as a priority?

MS. MISIEWICZ: Oh, that's research that we already undertaking and we're happy to see that it's continued to be a priority.

MR. CHAPMAN: Thank you. Any other questions from the Board?

(No response)

MR. CHAPMAN: Hearing none, we'll continue to move down the list. Thank you, Tracy.

Up next, I have Kelsey Maben followed by Amber Pool then Peter Nell and Megha Shah

Even.

Kelsey, are you here?

MS. MABEN: Yes.

MR. CHAPMAN: Kelsey, if you can start with your name and affiliation for the record?

MS. MABEN: Sure.

My name is Kelsey Maben. I work at CCOF as a Grower and Livestock Certification Specialist.

I just wanted to talk basically today about the proposal for emergency pesticide use clarification.

We really appreciate the work being done to clarify and strength this area of resolution. However, we see that there is potentially some further clarity needed in the proposed language.

For instance, in the proposed language of Part A states, quote, examples of materials management, activities and goals, you could include, and then it goes on to state some possible merits to the practices.

Following that, it then states that, when practices provided for above are insufficient.

The way this wording is laid out, it seems to first suggest that these are suggested parasite prevention areas. And then, in Part V it then seems to suggest that this may be required steps. And we feel that there's wording that could be slightly more clear.

The accepted area is the accepted parasite threshold suggested in the proposed language. A certifier looking to enforce these regulations, we think there may need to be a lot further guidance on what these accepted parasite thresholds will be to prevent discrepancies among certifier if it was used more meaningfully.

Thank you.

MR. CHAPMAN: Okay, any questions from the Board?

MS. SWAFFAR: Hi.

MR. CHAPMAN: Sue?

MS. SWAFFAR: This is for the record.

MR. CHAPMAN: Actually --

(Simultaneous speaking)

MS. ARSENAULT: Hi, there. This is Michelle. If you guys could put yourself on mute, we're getting some background conversations. Thanks.

MR. CHAPMAN: Ashley?

MS. SWAFFAR: Okay, thanks. Kelsey, thank you for your comments.

Would you care to submit what you have said to Michelle on there? Because that varies from your written comments a little bit. So, I'd like to -- I was trying to take notes and couldn't get that down all the way.

MS. MABEN: Sure, I can submit that information.

MS. SWAFFAR: And then, the other question I had, I see there's more CCOF folks coming up, but it sounds like you're the right thought person.

On oxytocin, and you said 37 of your members have oxytocin on their OSP right now. Do

you know, have they explored other natural options or is oxytocin credible for them?

MS. MABEN: I can't speak for every operation specifically, but generally, we allow oxytocin as a kind of emergency situation.

We like to know what materials they're going to use and having that looked at as an option ahead of time allows them.

MS. SWAFFAR: Do you use it in situations that come up quickly?

MS. MABEN: Many of our operations do explore other routes, whether that's like a more typical removal of the retained test or using non-synthetic fire.

But it varies from operation to operation. But that 37 number comes up because that's the number that you have listed that may potentially use it if a situation warrants that.

And then, our inspectors follow up on how that material is used.

MR. CHAPMAN: All right.

MS. SWAFFAR: Can I follow up, Tom?

MR. CHAPMAN: Yes.

MS. SWAFFAR: Yes, so, if we remove oxytocin and that's kind of what the subcommittee wrote was. I'm not sure that that's really going to happen, but looking like it.

Have any of your clients reached out to you being very concerned with that if this was to be removed?

MS. MABEN: We haven't had a large amount of concern, no. It seems that, in general, producers tend to enjoy having a larger tool kit rather than a smaller one so there's always some level of resistance for removing things.

That said, we haven't heard much about oxytocin.

MS. SWAFFAR: Thank you.

MS. MABEN: Thank you.

MR. CHAPMAN: All right, up next, I had a question from Sue. Sue, if you could try to speak up, you're a little faint last time you were asking a question.

MS. BAIRD: Yes, hi.

No, Ashley asked my question. I was a little confused about the emergency parasite effect in the position, but she asked that and I appreciate that.

MR. CHAPMAN: Okay, thank you, Sue.

Any other questions? Hearing none, thank you for your time, Kelsey.

And, up next, we have Amber. Amber, are you here?

MS. ARSENAULT: Amber is on the line, Tom. I do see her and I'm just going to ask once more, if you're not speaking, please mute yourself. I hear somebody typing. Thanks.

MR. CHAPMAN: And I see you on the line, but we don't hear you. Are you muted on your end? Still not hearing you, Amber.

I don't know if there's someone else, I know we have a couple CCOF folks in a row that can throw stones at Amber.

And I'm getting your message, Amber, that you're here, but we're not hearing you.

I'm going to go next to Peter and hopefully, we can figure out a way to get Amber on the line while Peter's commenting.

Peter, are you here?

MR. NELL: Yes, hello?

MR. CHAPMAN: I can hear you.

MR. NELL: All right.

MR. CHAPMAN: So, we'll go to Peter, Amber if we can figure out how to get audio for you, we'll do you next. And then, I have Megha after that and then Zak -- followed by Zak. If you're here to send in a message because I don't see your phone number as well on the phone as well.

So, Peter, you're up, and name and affiliation, if you can.

MR. NELL: Hello, my name is Peter Nell and I am the Policy Assistant at CCOF.

Today, I will be talking to you on various proposals.

First, sincere support to Amalie's proposal to be reclassify potassium acid tartrate

to reflect its production methods. Potassium acid tartrate should be classified as a non-synthetic agricultural substance.

CCOF supports the need to classify it as such provided in the proposal.

Second, it's unclear whether the proposal to clarify the annotations under the materials is even in scope on the national list of allowed and prohibited substances will affect CCOF members.

The marine materials our members often use do not work for the binomial of their source on the material safety data sheets.

Because of this, it's difficult for CCOF to determine if our members would be affected by the proposed annotation changes.

Third, CCOF supports the material subcommittee's research priority. The subcommittee identified important topics that researchers should consider.

Fourth, this is just thanks to the crops subcommittee for their ongoing work on the

organic seed guidance. CCOF supports steps to encourage more organic seed usage, increasing the volumes organic seed sector.

Finally, CCOF encourages the members of the Board to make use of their time by asking questions to aquaponics and hydroponic growers who are present at the webinar currently who may not be able to travel to Jacksonville.

Thank you for the opportunity to comment today. And Amber is with me now. So, she'll comment after.

MR. CHAPMAN: Thank you, Peter. Any questions for Peter?

(No response)

MR. CHAPMAN: All right, no questions from the Board. Peter, thank you for your time. And, Amber, you're up next.

MS. POOL: Hi, I'm here this time. I don't know what happened with my audio. Sorry about that.

MR. CHAPMAN: No problem, we can hear you just fine now. If you could start with your

name and affiliation for the record.

MS. POOL: Hi, I'm Amber Pool, I'm the Farm Certification and Technical Specialist for CCOF.

I appreciate the opportunity to comment via the webinar. And I'd like to thank the Board for continuing to offer the webinars for farmers who would not otherwise be able to travel and interact with the NOSB Board members.

Currently, 511 CCOF members list soap-based herbicides on their OSP. I remember that is one of the biggest hurdles to any conditions to organic production.

If these herbicides can be used on roadways, ditches and around structures, while I do not support their use in organic field production, continued listing of these materials allow an entire operation to be certified organic rather than just their field or production areas.

If any organic production areas are certified, a farming operation might choose to use a harder prohibited herbicide around the

roads and the structures instead of just softer spaces.

I'd like to briefly mention that once the NOP updates annotations, the Board should then review under the main annotations.

And with that, I'm done.

MR. CHAPMAN: Thank you, Amber.

Any questions for Amber? I have a question from Asa.

MR. BRADMAN: I'm sorry, Amber, I didn't quite hear what you said about the soap-based herbicides. It -- you went out a little bit. You said 111 users use the soap-based herbicide?

MS. POOL: We currently have 511 members that list that soap-based herbicide on their organic system plan. It doesn't mean that they're all using it, but they do have it in their toolbox if they want to do that.

MR. BRADMAN: It sounded like you were or were not opposed to some uses?

MS. POOL: Oh, I agree that the

annotation should say that it can only be used on roadways, ditches and around structures.

I don't want that changed. I don't think it should be used in the fields, but it should be allowed to be used around roads and structures. That way -- entire operation under the organic system plan instead of field areas, food area from the organic system plan and then probably choose to use harder herbicides that aren't compatible with organic production.

MR. BRADMAN: Okay, okay. Thank you for that clarification.

MS. POOL: No problem.

MS. ARSENAULT: Tom, are you still there?

MR. CHAPMAN: I put myself on mute, sorry.

MS. ARSENAULT: That's okay.

MR. CHAPMAN: I'm getting over a cold, so when I cough I try not to be loud. I apologize when I do that.

MS. ARSENAULT: We appreciate that,

thank you.

MR. CHAPMAN: Yes.

Okay, thank you, Amber. I'm not seeing any other questions from the Board at this time, so we'll move on to the next speaker. I have Megha.

And, following Megha, I have Zak and then Preston Farris.

Megha, are you here?

Ms. SHAH: I am.

MR. CHAPMAN: Excellent. If you'd start with your name and affiliation.

MS. SHAH: Sure. My name's Megha Even, I'm a Senior Farm Certification Specialist with CCOF.

MR. CHAPMAN: Okay, go ahead and comment.

MS. SHAH: Okay.

Today, I will be commenting on the crop subcommittee's proposal and discussion document related to EPO production systems.

I've been working for CCOF for two and

a half years and, in that time, I reviewed 460 farms, including more than 52 being a base production system.

Other continuous operations, I have reviewed approximately two-thirds to this perennial crops, blueberries, a small number of seasonal blackberries, and strawberries on elevated structures.

The remaining container based operations I have reviewed grow annual crops, specifically tomatoes, cucumbers and peppers.

I would like to share some of the practices used by certified organic container producers focusing on mainly on soil management and natural resource standards of the regulations.

First, I would like to emphasize that container producers must be a complete OSP as a document complaint with all areas of the organic standards.

CCOF requires container producers that they get additional OSP forms and include

detailed descriptions and photographs of their production system.

The OSP submitted by container producers are often lengthier and includes more and more detail when compared to OSPs submitted by in-ground producers.

An example of this is that each component of their growing system must show how it supports biological activity. You must explain how your life expectancy of the container substrate and how the growing substrate was disposed of at the end of the growing cycle.

For annual crops, I see one to two month rotations with lettuce inside containers and the use of cover crops as a natural mulch in wood topped container systems.

The perennial crops, there's so little vegetation in between growth, but then you have those systems where containers were placed under shade crops.

Container producers must know how to calculate portions of the entire production site

and are required to keep natural resources and biodiversity monitoring lines impacted for the verified it in sections.

Outdoor container producers with plant pollinator and may enhance the developer in more habitat and non-crop areas of their farm. And like the indoor container producers with inspectors of health just outside their greenhouse.

All container based systems are reviewed with containers, grow back, and the container substrate is either composted or incorporated into the soil outside the production area at the end of the growing cycle.

Container producers are comparable to in-ground producers and vary depending on the specific operation. The vast majority is not all container production producers.

I have reviewed the compost on the biological activity. Materials include compost made onsite. With respect to the reviewer, I support any producer that demonstrates inside the

organic standards, irrespective of their production.

Thank you.

MR. CHAPMAN: Thank you, Megha.

Any questions from the Board? I see Francis.

MR. THICKE: Am I on? Can you hear me?

MR. CHAPMAN: Yes, we can hear you, Francis.

MR. THICKE: The question I have is of the container growers that you've certified, are some of them 100 percent up on liquid feeding or virtually 100 percent and what percentage of your hydroponic growers are virtually all liquid feeding?

MS. SHAH: I personally have not reviewed any operations that are 100 percent hydroponic, although CCOF does have a handful of operations that use a 100 percent liquid media.

MR. THICKE: What would you say most of them are? Like what percentage liquid feeding

would most of them be?

MS. SHAH: I wouldn't be able to give a percentage. I could estimate maybe five to ten producers out of 3,500 that we've certified.

MR. THICKE: Five to ten, I'm sorry, I didn't quite follow that. Five to ten are 100 percent hydroponic liquid feeding?

MS. SHAH: Correct. Yes, that's my best estimate.

MR. THICKE: Okay, all right, thank you.

MS. SHAH: You're welcome.

MR. CHAPMAN: Thank you, Francis.

Up next, I have Steve.

MR. ELA: Sure, this is just kind of following up on Francis's question. It's buried in there and I didn't quite catch when you were talking about the vermicompost, the compost and such, and, you know, that you needed to, you know, provide documentation of that.

Which then tells me that we hear so much about so many of these container systems

being in coconut cores, but then you're talking about maybe a document for the vermicompost and the compost and things.

Could you elaborate on that a little more? I didn't quite follow you and what you were saying.

MS. SHAH: Yes, sure. I apologize, I tried to fit in way more than I probably could do in this.

But what I see with our container producers are, the annual -- the producers of annual crops, you are correct, they specifically use cocoa core, a combination of cocoa core compost and sometimes volcanic rock as their substrate.

And then the perennial producers use peat moss, cocoa core, usually perlite or saw dust and compost as well. They use a typical substrate mixes that I've seen.

Does that answer question?

MR. ELA: You have. And I guess I just, you know, it's kind of like Francis said, I

mean, it sounds like only very few of your producers use a 100 percent liquid feeding.

Are they putting like in the vermicompost and the compost, are they adding those to throughout the growing season or is that just the initial substrate that they're putting those in?

MS. SHAH: Yes, that's correct. They are typically replenishing throughout the production cycle but the starting media it's in the compost and then the compost is replenished through the growing cycle.

MR. ELA: And do you have any sense. I guess we've had lots of discussion about liquid feeding versus using things like compost and containers.

I mean, it sounds like that's adding the compost is a pretty critical component of that system or -- I'm just trying to kind of get around what they're actually doing here.

MS. SHAH: Right. The thing is highly dependent on the operation. I do think it's of

enhancing biological activities.

They're, you know, some inherent biological activity in the cocoa core and in the peat moss. And they keep adding the compost just as an additional boost to that. That's my understanding just from a reviewer's perspective.

MR. CHAPMAN: Okay, I have a question from Harriet.

MS. BEHAR: Hi, you mentioned that the inspectors can review a biodiversity plan. Do you think that you could send that off to the shelf so we can see how you are monitoring that on these operations that use landscape cloth and shade cloth and those systems?

I'm just kind of curious how you're monitoring that and what percentage of the land that is being certified needs to be planted to pollinator plantings and that sort thing.

MS. SHAH: Sure, we provide sample monitoring routes. We're seeing a number of our operations use that as a starting point and then develop their own record keeping system, so how

they do that.

But I'd be happy to pass along an example of something that some of our operation that use it.

They often do some numerical counts of different wildlife and things that they've seen around their operations. They sometimes submit photos. They will often submit photos of plantings that they've done outside their greenhouse, for example, you would see probably some sunflowers.

And so, they'll submit photos of that -- of those practices in order to naturally requirement.

MR. CHAPMAN: Thank you. I also have a question from Asa.

MR. BRADMAN: Yes, hi. I don't know if this is the place to talk about it or if perhaps somebody else from CCOF will be talking about it in comment.

But I'm looking at the standard that you're proposing and the comments you submitted.

And the last three sentences are about basically labeling, suggesting container grown, hydroponically grown, aquaponically grown as essentially a compromise on some of these issues.

And I also know that, you know, you have a pretty diverse board and different opinions on this. I see this in all -- almost every other organization organic that I'm involved in.

So, I'm wondering if you have any insight on that and any feedback on obstacles or acceptance or comments?

And if somebody else was going to comment on that on the webinar from CCOF, then we can defer.

MS. SHAH: Sure, thank you, yes. That was going to be my comment because I haven't been directly involved in those discussions, but our Policy Director, Paula Deanwood, will be at the meeting and she will be able to answer any questions that are submitted via written comments at that time.

MR. BRADMAN: Okay, thank you.

MS. SHAH: Sure.

MR. CHAPMAN: All right, and I have one question as well.

I feel it's -- you know, and answer it to the best of your ability as a reviewer that's seen a lot of these operations. But how many of these container operations have you guys certified today would be able to meet the recommendations proposed by the crops subcommittee for containers? You know, with either their operations today or with some minor modifications?

MS. SHAH: From my perspective, it's very, very difficult to estimate that number. I'm not entirely confident that most of our operations will be able to meet the proposed requirements, some might be able to.

MR. CHAPMAN: Okay.

MS. SHAH: Sorry, that wasn't very --

MR. CHAPMAN: No worries, I know I'm putting you on the spot there. You can't answer

for every people about the operations.

MS. SHAH: It --

MR. CHAPMAN: Again --

MS. SHAH: There's some operations may be able to get it depending on the economic situation and how much time and resources they have.

MR. CHAPMAN: So, what you're saying is it would be a change to operations they would need to invest in new equipment, most likely?

MS. SHAH: Correct, I would believe so.

MR. CHAPMAN: Okay.

Francis?

MR. THICKE: Yes, in your proposed certification standard, you have kind of container grown hydroponics are grown and aquaponics are grown.

And for those that are 100 percent liquid feeding, would you require them to use the hydroponically grown label? It's a little ambiguous the way you sort of lump hydroponics into container growing.

But, I'm curious, would you actually require under that scheme 100 percent liquid feeding operations to use the term hydroponic?

MS. SHAH: I believe the proposal is that the operations can decide for themselves which terminology to use, whether they would like to use hydroponically grown or container grown.

MR. THICKE: That's what just like, to me, that they could just put what they wanted on there, right?

MS. SHAH: I'm sorry, I didn't hear your last question very clearly.

MR. THICKE: It appeared to me from the verbiage that they could decide which one they wanted to put on, that's what I wanted to verify.

MS. SHAH: That's correct, you're right, yes.

MR. THICKE: Thank you.

MR. CHAPMAN: All right, any other questions from the Board?

(No response)

MR. CHAPMAN: Seeing none, thank you, Megha, for your time and answering our questions.

Up next I have Zak from Oregon Tilth then Preston Farris and Zen Honeycutt after that. And, Zak, are you still here?

MR. WIENGAND: Can you hear me?

MR. CHAPMAN: Yes, we can, Zak. Zak, if you'd start with your name and affiliation for the record.

MR. WIENGAND: Sure. My name is Zak Wiengand. I am the Technical -- the Harvesting Program Technical Specialist for Oregon Tilth.

MR. CHAPMAN: Okay, and go ahead with your comments.

MR. WIENGAND: All right.

So, I'm here today to provide some insights into the efforts Oregon Tilth is making towards ensuring integrity in the organic supply chain.

We feel that the discussion around excluded operations and the supply chain is a good start to the proposal. But the discussion

extends to areas of certification that are also challenging, as you well know, such as imports of organic products.

To combat these issues, we have implemented several policies and enacted certain procedure changes that I would like to summarize for you guys and possibly inspire the NOSB.

Since the beginning of the year, we have implemented a policy on imported organic products, organic livestock purchase and sales and excluded operation record keeping requirements.

Our imported products policy was implemented in July of this year and requires that all -- that certified operations importing specific organic products, primarily grain, from outside of the U.S. notify Oregon Tilth of shipments, provide traceability documentation and get written approval from us prior to use.

Because of this policy, we have actually been able to identify several discrepancies in certification documentation

which are currently under investigation by the relevant issuing certifiers.

Note that this policy is actually in addition to the NOP Directive that was issued to certifiers.

Second, our livestock broker policy was implemented early this month. It requires that Oregon Tilth certified operations purchase organic livestock only from other certified operations.

Previously, we permitted purchase to uncertified brokers so long as loads are not split or combined.

Due to receipt of several complaints from a variety of sources about issues with uncertified brokers fraudulently representing conventional livestock as organic, we decided to take some action on that.

Third, we have an increased focus on verification efforts centered around purchase of organic ingredients to excluded operations as well as the record keeping expectations for

certified operations.

As part of this, we provided additional information and resources about the expectations for record keeping when purchasing organic products to excluded operations. And we have instructed inspectors to focus on verifying records for purchases in these situations this year as well as the next.

We do see gaps in the ability to verify a lot of this information because of the record keeping requirements for excluded operations or lack thereof.

But we're employing as much policy as we can to help ensure organic integrity in the supply chain and without further changes.

We do see the proposal for excluded operations in the supply chain and a step in the right direction to help address these issues but there's definitely more to it.

Thank you.

MR. CHAPMAN: Thank you, Zak.

Any questions for Zak?

Scott?

MR. RICE: Thanks.

Zak, I just wanted to convey to you and others who are reading that document that, you know, that is not a catch-all standalone document or proposal. And, you know, fully acknowledge all of the other efforts that are happening in the community around this issue.

And when the NOP came to us with their request that we look specifically at imports, we were already kind of focusing more on this excluded operations angle. And so, we chose to kind of continue in that direction.

And, as a result, came up with this proposal. But, just to let you and everyone know, we will be moving forward on that request from the NOP in this next term to look specifically at imports.

So, thanks for all of the implementation of practices you guys are doing and always good to examples of how that's working. Thanks.

MR. CHAPMAN: Thank you, Scott. Any other questions for Zak?

(No response)

MR. CHAPMAN: Hearing none, thank you, Zak, for your comments.

Up next, we have Preston Farris, followed by Zen Honeycutt and then Kieran Foran. Kieran, I don't -- we don't see your phone number, if you can message that to us it would be appreciated.

Preston, are you here?

MR. FARRIS: Yes, sir.

MR. CHAPMAN: All right, Preston, if you could start with your name and affiliation then you can just go forward with your comments.

MR. FARRIS: Yes, good afternoon. My name is Preston Farris. I'm a Ranch Manager for Rider Brothers, Incorporated based in Oxnard, California.

In my role with the company, I am involved heavily in organic berry production on several cultivars.

The purpose of my statement today will be to make an argument that the proposal on hydroponics and container growing recommendations put forward by the crop subcommittee be sent back to the subcommittee for further discussion.

In the proposal put forth, there are clear regulations that control farming practices and excludes certain growers, especially in regards to fertility management.

The proposal clearly states that 50 percent of the plant's annual nitrogen needs must be present in the soil on the day of planting and then only 20 percent of the additional nitrogen in that year may be provided for liquid feeding.

While this may be possible in certain annual crops with limited growth time per year, for perennial crops and site-specific locations such as Southern California, it does not make sense.

Having a large amount of unavailable nitrogen in the soil prior to planting reduces the health of the root zone. By increasing the

salinity at the time of the planting and creates a situation where the availability of nitrogen is adverse to the needs of the plant.

The only thing that this creates is a situation in which nitrates are pushed past the root zone and leaks into the soil below the plant creating a deficit of nutrition that will need to be corrected with additional inputs in the future.

This also creates a situation in which many growers will be tempted to inflate their yearly nitrogen requirements in order to not be bound by these fertility restrictions.

This is not an efficient use of resources or sound management of the environment.

From a purely practical view, the proposal creates an increased labor need in a time where labor is one of California agriculture's largest challenges.

Further, what method of revision or inspections will be used to assure that growers are complying with these proposed regulations?

Based on the NOSB's past declarations that there would be no proposal put forth that creates a double standard between allowed containers production and soil regulations, I believe that this proposal severely limits the ability of every organic farmer to make the decisions necessary to promote plant health and limit environmental impacts.

Thank you for your time and I welcome any questions.

MS. ARSENAULT: Tom, you may be still on mute again.

MR. CHAPMAN: Yes, that happened again, sorry.

Thank you and I see a question from Francis.

MR. THICKE: Yes, my question is, can you tell us what you use for a substrate from the medium that is for a container?

And, secondly, what percent liquid feeding do you do with your system?

MR. FARRIS: On both points, it's very

difficult to make blanket statement on what substrates we're using. It's very site specific based on the crop.

And it's very site-specific on fertility based on the crop. We use --

MS. ARSENAULT: I'm sorry to interrupt, sorry, if I can just interrupt for just one second. This is Michelle. If you just joined us, please make sure you're on mute so we don't hear your background conversations. Thank you.

MR. FARRIS: Yes, okay.

So, it's very difficult to make a blanket statement on which substrates we're using because it really varies based on perennial or annual crops. It varies based on the location, the size of the container.

And, on the liquid feeding, also, we do use both solid and liquid fertility on an as needed basis in line with our soil production.

And I think, to clarify, there's been a little bit of, at least on my end, a

misclarification of what liquid fertility means.

And just because it's liquid, does not mean that it's available to the plant. All of the liquid fertilizers that we put on still require a microbial process to take place to make that nitrogen available to the plant.

So, there's a big difference between liquid and availability to the plant.

MR. THICKE: And the liquid would that be hydrolyzed soybean meal? Would that be one mix you use?

MR. FARRIS: Not particularly. It's a very expensive product to use. We use mostly fish based emulsions if we're using a liquid nitrogen application.

But it's always used in conjunction with solid fertility dependent on the time and the ease of use of applications.

MR. THICKE: So, for the range of liquid feeding, would you say it's generally 50 percent or more or 80 percent or more?

MR. FARRIS: It's really impossible

for me to say. It changes year to year, it changes crop to crop, it changes site to site. So, for me to make a blanket statement for every grower is really would be tough for me to do.

MR. CHAPMAN: All right, this is Tom.

I have a quick follow up question to make. I hear that -- I see you can't make a blanket statement, are you able to give a range, you know, what you use?

MR. FARRIS: I mean, it could be anywhere as high as 50, it can be anywhere as low as 20 for the nitrogen. You know, it really depends on the grower because you're applying these solid fertilizers takes a lot of manpower, especially on a perennial crop where you might have to go back in the second year or the third year, pull a plant out of the pot, add compost to the pot, put the plant back in. And we already don't have enough labor as it is even to get the fruit off of a plant.

Trying to add very similar products that we're adding through the drop tape on the

solid basis purely because they're solid, even though they're very, very similar products, to me, doesn't make much sense as a regulation to require growers to take on that extra burden.

MR. CHAPMAN: Okay, thank you.

I see that Asa is next followed by Steve, discussions.

Asa?

MR. BRADMAN: Excuse me, I have two questions.

One, if you look at a little bit more about nitrogen being forced out of the pot into the soil and where it goes after that.

And then, the second question is, so, at the end of the cycle or prunings and trimmings, what happens to that material? Is it composted? Is it reused in any way? And what happens to the containers?

MR. FARRIS: Sure, on the first part on the nitrogen being leaked past the roots, that really is especially important on perennial crops because we're going to be required now to put 50

percent of the nitrogen into the pot and the time of planting.

But, that plant is not going to need that nitrogen for probably another six to eight months.

So, that microbial activity is going to start on the solid fertilizers on day one that the fertilizer is put into the pot.

So, that's going to start breaking down and there's going to be an excess of nitrogen in the pot creating a high salinity environment. And then, that fertilizer is just going to get washed right across the plant in both containers and soil, the same thing is going to happen.

And then, when the plant does need that required nutrition six or eight months down the road, it's already going to be gone. So now, I have to go back and put on additional inputs to make up for that.

As far as the trimmings, both the used substrate and our pruned material, the wood,

leaves, berries, everything, that all gets mulched. It gets chopped up and then mulched and then goes into either compost or green waste, technically, a green waste system for use in our in soil field and also in our vermiculture applications that we have.

MR. BRADMAN: Thank you.

I have a related question to the mulching. You know, there's been concerns about, you know, potentially covering the earth with more plastic and used as shade cloths and versus open soil.

And, you know, of course, I've seen mulch films on, you know, lots of soil systems as well including polyethylene.

But, I'm curious, what you use over the soil, under the pots, between the rows and how is that managed and, you know, if you're using, for example, plastics, do you see alternatives? That sort of thing?

MR. FARRIS: Yes, we use -- we have both systems where we have weed mats directly

under the pot and then the in between rows, the furrows are left open.

And then, we do also have a few locations where we have weed mats covering the entire portion of the production area, depending on how heavy the weed structure is.

It does, as previously stated, labor is a big, big concern for us and trying to go through and take care of that amount of weeding, it doesn't -- it is not feasible in certain locations.

The other point I would like to make is, is it better to have a little bit of cover and ground that's not touched or do you consistently running a tracker to that every six months, eight months, a year over a piece of ground?

So, we do use both applications. We have open areas and we have covered areas, it just depends on the site.

MR. CHAPMAN: Up next, I have Steve, a question from Steve and a question from

Francis.

Steve?

MR. ELA: Yes, I'd just like to follow up, I mean, you know, you basically said you couldn't tell us, you know, how much liquid feeding versus solid feeding, et cetera in a year because it varies so much.

Yes, I mean, that's really critical information, but could you at least tell us what the decision making process is to decide whether -- which one you're going to use and how you're going to use them?

MR. FARRIS; Yes, absolutely. First off would be labor. Do we have the amount of people that we need to go through and put solid fertility out on 50 acres of blueberries? You know, that takes -- it's a very costly and labor -- high labor need practice to do. So, that's a big portion of the decision making.

As I stated before, many of the products that we're applying are very similar in the liquid form or the solid form. They're just

-- depends on the way that you want to apply it.

And the biggest driver for that is probably labor and then increased efficiency as well. Because, through the drip in a container production system, we can be a little bit more precise on the quantity of fertilizer that we're adding to each pot versus when it's done solidly, because people make mistakes, they grab an extra handful, they grab a little less handful.

Through the drip system, it allows us to be very, very precise with the timing and the uniformity of our distribution.

That does not mean that it makes it anymore available to the plant uptake any quicker, it just allows us to apply it more cheaply and more uniformly.

MR. CHAPMAN: All right.

We have a question from Francis and then from Dave Mortensen and then we're going to have to stop the questions there and move on.

So, Francis?

MR. ELA: Yes, regarding your concern

about leaking of nitrate, what you're talking about.

Now, what if you had instead more compost in the pot? We've seen research on systems where they have a 100 percent compost or a high percentage of compost and there is no supplemental feeding period solid or liquid.

And so, it sounds to me that you're feeding a lot of liquid because you have essentially more plant fertility, is that correct?

MR. FARRIS: No, that's not correct on two points.

The first I'd like to make is, we do use compost in our pots. So, to say that we don't is false.

MR. ELA: On a percent -- what percent of compost?

MR. FARRIS: It may be ten percent, it depends and then we add in as a top dress sometimes for weeding. We'll use a green waste over the top of the pot to try and keep the weeds

pressured out a little bit actually in the container. So, that's adding some increase microbial activity and nutrition.

And then, the second point that I would like to make on that is the plant can't heat compost. But, through the biology, that compost material still needs to be broken down into a form that the plant can take up through the liquid.

So, it doesn't matter if you're at a 100 percent compost, the method that the plant eats is still the same. And if that compost is breaking down before the plant needs it, then you have all of that energy going right past the roots and out of the plant.

So, making us put that in at a time when the plant doesn't need it, doesn't seem, to me, to be the best use of the resources.

MR. CHAPMAN: Up next, Dave.

MR. MORTENSEN: Yes, thanks, Preston for the presentation.

Could you give us an idea, aside from

the nutrition of the plants that you describes, could you tell us the difference between your container production system that you've described and a neighbor who is conventional?

MR. FARRIS: Oh, I mean, it would be huge. Are you saying between conventional in soil or conventional saying use of non-organic products?

MR. MORTENSEN: A conventional container production neighbor nearby you, what would be the biggest differences? I'm just trying to picture it.

MR. FARRIS: Well, I mean, your forms of nitrogen or your forms of fertility and all aspects are completely different.

A conventional container producer would be using urea, they would be using pure ammonia, they would be using calcium nitrate. They would be spraying with conventional pesticides.

Those are the things that we are not allowed to do.

I think a more fair comparison would be our organic container production and our organic soil production. I mean, really, the only difference between those two is the thing that the plant roots are sitting in. That's really the only difference.

I mean, the difference between an organic container production and a conventional container production is huge. I mean, you can't even compare the two. All of the tools are different.

MR. MORTENSEN: Thanks.

MR. CHAPMAN: I have a quick follow up to that one.

So, are you suggesting that your inputs are very similar in your in-ground production of strawberries than they are for your container production of strawberries?

MR. FARRIS: They're almost identical.

MR. CHAPMAN: How would they differ?

MR. FARRIS: On an as needed basis. You know, in the substrate we have a little bit -

- or in the container production, we have a little bit more ability to manipulate what's happening before we plant. So, we can jump start a little bit of the microbial activity.

We have a better idea of the processes that are taking place. Wherein, the soil, it's, you know, if you have a disease or you have an issue, it's much harder to address that in the soil.

So, those would be really the only differences. But, we use, you know, just pretty much the same products, you know, whatever's available to us on the labeling are by both the soil and the container production.

I mean, it would be -- if you looked at a listed input from one of our organic soil fields and one of organic container fields, and nobody told you which one was which, you would not be able to decide.

MR. CHAPMAN: Thank you. And I know I said no more questions, I'm going to throw the last question to Emily and then we'll have to go

on to the next speaker.

Emily?

MS. OAKLEY: Thanks. Did you unmute me?

MR. CHAPMAN: I did, yes, I think.

MS. OAKLEY: Great, thanks.

So, you kind of touched on this, but if you had both in ground and container production already, what is the benefit to you of the container production? Why don't you just do all of your production in the ground?

And, Tom, you can put me back on mute.

MR. FARRIS: Well, I mean, as you may know or may not know, here in Southern California, land is decreasing, you know, available agricultural land is decreasing every year.

And a lot of the organic ground that we have has been commercially farmed organically for quite some time and the ground is a little bit tired.

And it also allows us to take a piece

of ground that may not be suited for a particular cultivar, then you have the really -- you know, it might be fine organic ground, but it might be a really heavy clay soil with a high water table.

And it wouldn't be very suitable for growing blueberries, but we can turn that around and now grow organic blueberries on that same piece of ground.

So, it opens up a lot of new avenues for an organic farmer to provide quality organic fruit to the marketplace in a time where that's becoming more and more difficult to do.

And, as a young grower, having new tools and new opportunities taken away from me doesn't feel very good. So, it's something that I feel very passionate about and I hope that all of these points have been taken into consideration.

MR. CHAPMAN: Okay, thank you, Preston, thank you for your time with us and answering all our questions.

MR. FARRIS: Thank you very much.

MR. CHAPMAN: Up next, I have Zen Honeycutt followed by Kieran Foran and then Megan Debates.

Zen, are you here? Did you get your audio working? And we're not hearing you. I'm just going to check to see if you're mute on your end.

MS. HONEYCUTT: Yes, can you hear me?

MR. CHAPMAN: Yes, I can hear you now, Zen.

MS. HONEYCUTT: Okay, is it okay like this or should I put a headset in?

MR. CHAPMAN: No, this is perfect. If you can start with your name and affiliation and then you can go straight into your comments.

MS. HONEYCUTT: Great.

My name is Zen Honeycutt and I'm the Executive Director of Moms Across America. And I want to say thank you for listening to me today and having me on the call.

I'm all once are grateful because our children's lives depend on what all of you do and

I just want to say thank you so much.

I'm going to speaking from the perspective of the consumer on hydroponics. And what we want to say is that we need more organics. We need more organic, not less. We need GMO-free and toxin free food.

I have driven across the country twice and have seen a massive deficit of organic food in the stores.

Regarding hydroponics specifically, our moms prefer organic food to be grown in the soil and we would like to have the right to choose between food grown in the soil or water.

We do prefer a separate logo for hydro-organic, meaning, we would like the word organic to be on it if it is, in fact, organic.

So, we are most concerned with the toxins, however, and we think the surface of the discussion should be not so much about keeping organic in the soil, but about keeping the toxins out of our soil, water and food. And this contamination issue is being widely ignored and

it is a huge problem.

So, if you ask any person at a farmer's market, do you buy produce if it's pesticide free but not organic? You will almost always say yes. So, their primary concern is the toxins in the food, not the label.

So, I ask NOSB and the organic community to consider the following points with the possibility of incorporating some of the benefits of hydroponics into organic in order to further protect consumers.

One of the huge benefits of hydroponics is that the product being grown is protected from aerial spraying.

Many consumers do not trust USDA Organic now because we know aerial spraying is happening and because this issue is not being addressed by the National Organic Program.

Number two, another consideration is the inputs in hydroponics. And we want to make sure that those are a 100 percent organic.

The field grown organics, we are

concerned that the glyphosate remaining in the soil for up to 20 years is impacting the quality of our food.

And also, glyphosate is being found in rain and irrigation water.

With hydroponics, one would have more control as you could test the water and filter it, if necessary. Obviously, this cannot be done with rain.

Number three, the last concern in nutrition. We request NOSB and the organic and hydroponic organizations test their similar crops for nutrition levels and let the consumers know the results.

If hydroponic nutrition levels are comparable in nutrition and a 100 percent of the organic inputs are used, then hydroponically grown food could carry the hydro-organic label as safe for consumption and maybe even less toxic than organic grown in soil.

This may, in fact, be the way of the future due to our increasing toxic environment

and climate change.

You know, we ask you to consider that temperatures are rising and that 50 percent of the wheat crop will be lost in the Midwest if the temperature rises, you know, two degrees, this you know.

And we've already lost 50 percent of the crop. So, just to reiterate, we must consider that parents depending on food supply is a real threat when we import 80 percent of our food, especially soy and that they can contaminate our soy -- our food.

And that we ask to have a separate label, hydro-organics.

MR. CHAPMAN: Thank you, Zen. I'm going to have to stop you there. So, thank you for your comments. Any questions from the Board?

(No response)

MR. CHAPMAN: I'm seeing no questions. So, Zen, thank you very much for your comments.

And we will continue moving down. Next up, I have Kieran Foran followed by Megan

Debates and then Peter Overgaag.

Kieran, are you here?

MR. FORAN: Yes, I'm here. Can you guys hear me?

MR. CHAPMAN: Yes, we can. Can you start with your name and affiliation for the record and then proceed with your comments?

MR. FORAN: Awesome, thank you very much to everyone for taking the time to hear all of our opinions on this important issue.

My name's Kieran Foran. I'm from Trifecta Ecosystems and we're a company that is a commercial aquaponics growing and we're also have others in our local communities start their own aquaponics or hydroponics operations.

So, what we did is we sort of started by taking a poll of our consumers and sort of seeing what they thought about the organic brand and sort of what they were looking for with that brand.

And we even chose to pursue advanced certification just to sort of help the consumer

understand how the crops were grown, the way that communicates that crops are grown with all organic ingredients and without the use of harmful chemicals.

So, the consumers is willing to pay a little bit more for these crops and support in the organic farmer and the organic frame.

So, we polled our consumers, the word they associated most with organic is the word clean. You know, there isn't a bunch of, you know, pesticides or herbicides in their food and that's nothing in there that should be.

And the second word that they associated with the brand was trust. Trust that there's some sort of standard in place, that puts this food at a higher standard than conventionally grown food, whether it contains GMOs or not.

So, that certified organic brand helps the consumer avoid pesticides. But, even organic foods, you know, can still end up being grown in nutrient parsed soils, with some of those poorly

managed aquaponics or hydroponic systems.

So, it's really the management and the practices that lead to the healthy product and so hydro and aquaponics we feel will be grown to organic standards and using organic inputs.

Hydroponic and aquaponic facilities have been eligible for organic certification for over 20 years. And anything qualifies that they're able to follow the same guidelines as organic crops grown in the ground.

You know, to us, organic is really more about what you don't do. You don't use synthetic fertilizers or pesticides. You don't use genetically or GMO seeds.

The other thing, is burgeoning or contamination, you know, you're not getting sludge on our farm and there's no radiation of the products.

So, all that has led to a burgeoning interest in organic, especially on the consumer side of things, which is a real good thing.

But there's also a lot pressure on

that standard. So, you know, you have products coming into the market that they minimal level of what is required sitting right next to another product that's also labeled organic, but there's much more.

So, we're just, you know, obviously trying to figure out a way that we can all sort of make the consumer feel good about what they're getting is actually what they want.

We feel if all of our nutrients are organic, all of our pesticides and herbicides , which we personally don't use for some hydroponic, then the outcome seems to me it should be organic.

All right, so that was my time?

MR. CHAPMAN: Yes.

MR. FORAN: Okay.

MR. CHAPMAN: Any questions? We currently have a question from Sue.

MS. BAIRD: Yes, hi, I've heard quite a bit of discussion today on hydroponics, aquaponics --

MS. ARSENAULT: Sue, this is Michelle, we can barely hear you. If you could speak up please? Thanks.

MS. BAIRD: Is it better?

MS. ARSENAULT: Better, thanks.

MS. BAIRD: Okay. I've heard a lot of discussion today on container growing and hydro, aquaponic growing. Do you have any position on aeroponic and would you differentiate that between what we consider to be hydroponic?

MR. FORAN: I would not differentiate it between hydroponic. The main difference is just how the water gets directed to the root of the plant.

So, in aeroponic, it's usually being sprayed usually on to the roots, you know, with some sort of mixer. But, the water itself, you know, it being managed the same way that a standard hydroponic farm would be there's just usually a lot less water involved.

So, that can be done with synthetic fertilizers or that can be done with organic

fertilizers.

MS. BAIRD: Could I do a follow up question?

MR. CHAPMAN: Yes.

MS. BAIRD: Okay. There's been -- we've heard from a lot of aquaponics people and hydroponics people that said there is a lot of biological activity in their systems.

Would you commit whether that same biological activity would be present on the aeroponics because it is in the air?

MR. FORAN: Yes, so, as long as the tanks where they're holding their water is being properly managed, you know, even, yes, it should have the same microbiology as you would find in a standard hydroponic system, but I don't have any personal experience with that.

But, there have been numerous studies and they have found that hydroponic systems and aquaponic systems compare to the microbial activity of compost.

So, there are very microbial active

and there's no reason that an aeroponics system should be any different.

MS. BAIRD: Okay, thank you.

MR. CHAPMAN: Thank you very much for your comments, Kieran.

We're going to move on, next up, I have Megan Debates followed by Peter Overgaag. Peter, if you're still here, we do not see you online anymore. Please message us.

After Peter, we will have Joel Kelly and Tim Mann.

Megan, are you here?

MS. DEBATES: Hi, Megan Debates, Director of Legislative Affairs and Coalitions for the Organic Trade Association.

I want to specifically comment on NOSB's proposed guidance on excluded operations. OTA is extremely supportive of NOSB's efforts to address the critical issue of organic fraud.

And we are generally in support of this proposal. We strongly believe that a regulatory modification to limit the types of

operations that may be excluded from certification is imperative.

But, in addition, we also support the important role guidance and training have and strengthening and clarifying the regulations.

Acknowledging that this is one of many actions that must be taken to adequately address organic fraud, OTA supports passing the proposal of this meeting.

Going forward, we encourage NOSB to work on identifying the types of operations that must be certified, be it a modification to the regulations along with any additional guidance that may be needed within NOP 50-31 or beyond.

OTA has been pursuing legislative changes for the next Farm Bill to give NOP the tools it needs to prevent fraud.

Our direction is shaped by a survey we conducted through which over 500 organic stakeholders communicated that a top priority is a stronger program to increase the transparency and tracking of international trade.

As a result, about a month ago, Representative John Faso introduced the Organic Farmer and Consumer Protection Act.

Most relevant to the NOSB proposal we are discussing today is that the legislation requires USDA to close regulatory loopholes by mandating that uncertified entities such as ports, brokers, importers and online auctions become certified.

The legislation achieves this goal by calling for a modification to the regulations to limit the type of operations that are excluded from certification.

The language in the bill imposes a deadline of no later than one year of passage of the Farm Bill for USDA to issue these regulations.

We bring this legislative action to the attention of NOSB because of the obvious and important intersection it has with NOP's request to NOSB to provide recommendations on improving the oversight and control procedures to verify

organic claims for imported products.

We also acknowledge that with the new administration and transition taking place, that rulemaking can be delayed.

If the NOSB decides to propose changes in the future that require rulemaking to address the issue of operations that are currently excluded from certification, OTA supports that path.

The legislative language proposed for the Farm Bill compliments NOSB's work on this issue and reinforces that action should be taken on this matter sooner rather than later and provides the backstop to ensure that rulemaking takes place in a timely manner via congressional oversight.

Thank you for the opportunity to provide comments on this proposal and share our perspective.

MR. CHAPMAN: Thank you. Any questions for Megan?

(No response)

MR. CHAPMAN: Hearing none, Megan, thank you for your comments. Up next, we have Peter Overgaag. Peter, are you here?

MR. OVERGAAG: Yes, I am. I lost my connection, but I am on the phone and ready.

MR. CHAPMAN: Okay, Peter, if you -- after Pete, we have Joel Kelly and then Tim Mann.

If you can start with your name and affiliation.

MR. OVERGAAG: Okay, I'm Pete Overgaag from Hollandia Produce. We're a certified organic hydroponic grower of lettuce and crisp products. We're an e-shop, so 100 percent employee owned. So you could say our employees are actually a group of 150 small farmers.

Through all of these discussions about what should or shouldn't be called organic, everyone has become so fixated on their own business needs that they have seemingly all but forgotten about the end consumer.

By limiting organic certification in soil based plants only, you are essentially

reducing availability in products that are healthier, better for the environment, for small farmers and for the climate.

Consumers have come to understand that organic means all natural inputs and nothing synthetic.

Our growing process results in products that deliver everything consumers care about when shopping for organic products. And, in some cases, they are actually safer for the consumer, and here's why.

We use all natural inputs, nothing synthetic, no chemicals, no exceptions. So, everything we give our clients is the same as growers whose plants are in the earth. The only difference that there are no grains of sand around our roots, for the rest, everything's the same.

Just like in the soil, we have the whole ecosystem of natural bacteria microorganisms living in -- corresponding around the roots of the plants.

So, all natural inputs, nothing synthetic in a natural ecosystem for our plants results in clean, healthy produces for our consumers.

In many cases, our products are cleaner, safer and healthier than plants grown in the earth. This is because we control the inputs but plants only have access to the already approved natural inputs that we give them.

An example of this would be cadmium. There are farming regions in the USA that have naturally high levels of cadmium in the soil, either the natural volcanic makeup of the soil.

The cadmium, of course, ends up in the vegetables that are growing in it.

And, you may have heard, cadmium is referred to as the new lead. It is a heavy metal known to cause learning disabilities in children and many other negative health effects.

I urge the NOSB to keep it simple by supporting modern, cleaner, more sustainable and healthier measures of growing by supporting

certified organic hydroponics, aquaponics, aeroponics and container growing.

If soil growers believe their products are different, they should come up with their own designation such as soil grown and stop trying to complicate and change the organic program.

Thank you.

MR. CHAPMAN: Any questions?

MS. ARSENAULT: Tom, if you're talking, you're on mute.

MR. CHAPMAN: Sorry. All right, so I have a few questions from Asa and Francis. I'm going to stop it there, we're running out of time. So, keep it short.

So, Asa, then Francis, then if they can response short as well, that would be appreciated.

MR. BRADMAN: Hey, just a quick question about labeling. It's come up now a couple times in today's discussion that, you know, to have like an organic hydroponic, organic aeroponic. And I wonder what you are -- an

opinion on that one is.

MR. OVERGAAG: I think it's wiser to keep it simple and instead of having lots of different designations that, if farmers who are growing this soil that they can mark it soil grown and let the consumers decide.

So, I would lean in that direction.

MR. BRADMAN: Thank you.

MR. CHAPMAN: Francis?

MR. MORTENSEN: Yes, in your lettuce growing, can you tell us what you use for a substrate and what percent liquid feeding you use?

MR. OVERGAAG: So, we start our seeds in a small cube of it's about an inch and a half by inch and a half. And it's mainly peat moss and we add other nutrients, a little bit of compost, castings and those type of things.

But, of course, the cube being so small and not -- it's not a high percentage of what the plants need. Because, in our case, our -- most of the growing is done in the water.

MR. MORTENSEN: Thank you, Pete.

MR. CHAPMAN: Okay, we're going to have to stop the questions there and move on to our next commenter.

Next up is Joel Kelly. Joel, are you on the line with us?

MR. KELLY: I am, can you hear me okay?

MR. CHAPMAN: Yes. And then after Joel will be Tim, that'll be our last commenter for the day.

Joel, if you could start with your name and affiliation and then go to your comments?

MR. KELLY: Okay, my name is Joel Kelly and I'm an organic aquaponics farmer from Portland, Oregon.

Although I believe there are great arguments to be made for organic certification in aquaponics and hydroponics based on biology and sustainability, I do not consider myself an expert in these areas. I'm an entrepreneur and

I'm classically trained at reading market trends and monitoring the potential outcomes of strategic decisions.

This will be my primary in this statement.

In 2009, the Sahara Force Project estimated the world population would climb to 9.5 billion people by 2050.

Hydroponics and aquaponics have potential to help feed this growing population.

This as well also estimated that the hydroponics food industry has grown an average of 4.5 percent per year for the past five years and that number is expected to grow exponentially over the next five years.

Basically, it's clear that the hydroponics industry is here to stay and the industry is going to take a significant market share over the next 10 to 20 years.

You, the members of the NOSB, have the responsibility to help better decide what this new potentially massive industry is going to look

like.

Some seem to want to paint the picture that this issue is about big ag farms wanting to steam the organic market from, quote, unquote, real organic farmers.

Like the soil farming industry, there are farms in the soilless industry if you use methods requiring chemicals and unsustainable practices.

However, many certified organic soilless farms like mine, a family owned farm with 15 employees see aquaponics as a way to provide healthy chemical-free and non-GMOs sustainability grown produce.

To communicate these values to our customers, we've become certified organic and there's no other way to communicate these values on the market today like the term certified organic.

If we weren't able to use the word organic to communicate this to our customers, we would lose our advantage against farms in our

industry who use worst practices and have a lower price.

Farms like mine would then be forced to either go out of business or sacrifice our values in order to compete.

Think for a moment about what this would create. We need you to consider the possibility that a large portion of our food supply someday could come from soilless farms.

So, we want this industry to be dominated by farms using low costs, unsustainable methods with no incentive to use organic practices, an industry in which the only incentive is to create the lowest priced products regardless of the quality or what it does to the environment.

This to me seems short-sighted. In today's day and age, we need to encourage as many people as possible to grow organically. I think we can all agree that increasing the number of farmers who use organic methods, that are good for the planet and the consumer would be better

for everyone.

I propose that we allow soilless farmers to use the word organic on their label and require that they label their products with their growing method.

Let the consumers decide if they want to buy -- if they don't want to buy our produce because it's grown without soil. I can tell you from experience handing out pamphlets, talking to customers and giving tours to thousands of people that our customers love what we do.

Thank you.

MR. CHAPMAN: Thank you, Joel. Any questions for Joel?

(No response)

MR. CHAPMAN: Seeing none, we'll move on to our last speaker just under the wire. Tim Mann, are you on the line?

MR. -- I am on the line. Can you hear me?

MR. CHAPMAN: Yes, we can. Tim, if you can start with your name and affiliation and

then go into your comments.

MR. MANN: Great, my name's Tim Mann. I have a farm called Friendly Aquaponics, Incorporated in Hawaii with my wife and we have been aquaponics farmers for the last ten years.

My wife's farm was the first in the world to get USDA organically certified through Oregon Tilth in 2008 and certified again two years later to the Organic Certifiers in Southern California, two of the biggest certifiers in the U.S.

We've taught hundreds of students in our commercial aquaponics courses how to get organically certified. And many of them have.

If aquaponics was not inherently certifiable, then I believe these two certifying agencies would never have certified us nor any of our students.

In fact, aquaponics may be more ecologically sound and sustainable than organic soil growing because of the following reasons.

Number one, we recirculate all our

water and use as little as five percent of what's used in soil growing.

Number two, we use much less energy that growing in the soil, possibly as little as one-quarter as much. And energy used is electrical and can be provided from renewable energy sources. You don't use any diesel, period. And we don't pollute.

Three, because we grow so densely, we have land area requirements of only one-tenth as much as growing in soil.

Four, because we don't need soil to plant, we can use infertile or marginal land that the soil farmers can't use.

Separate from this testimony, I'd be happy to send you our research and course that illustrates how aquaponics and build soil within five years from soil that was previously all rock and gravel.

Next, we can farm on rooftops and inside buildings and where our communities need the food and where no fields exist for soil

farming.

Next, organic soil growing depends on the farmer's integrity to the produce to be truly organic. And, according to some of the USDA's own reports, a number of importers and even some domestic producers cheat.

In addition, there is the issue of toxic conventional over spray on to organic fields from aerial sprayers which you heard about earlier in this conversation, which soil growers cannot prevent.

In contrast, aquaponics is mostly done inside greenhouse so to protect the crops with a barrier from any aerial spraying.

Also, it's impossible for an unethical aquaponics farmers to cheat their system because their fish would die if we used any unapproved substances.

Last, aquaponics grows protein also in the form of fish which is very difficult to do in the soil.

With the NOSB denies organic

certification for aquaponics, we may end up in a long series of legal battles when I hear you've deniers and the organic aquaponics community. And no one needs that.

I'm almost done, by relaxing, letting go of our fears and working together. Don't we all have better things to do with our time?

And, finally, thanks for your time.

MR. CHAPMAN: Thank you, Tim. Any questions for Tim?

(No response)

MR. CHAPMAN: Seeing none, Tim, I would appreciate if you could send that research that you mentioned to Michelle.

MR. MANN: I'm happy to.

MR. CHAPMAN: And that concludes our last public comment. So, we're just over our time here at 1:03 Pacific Time.

I want to thank all members of the public for your thoughtful comments and would like to thank the members of the Board for their time and questions, their attention as well.

And, lastly, thank the National Organic Program for facilitating this meeting. I think it went fairly smoothly.

So, with that, we'll be standing in recess until our next public comment session on Thursday at 1:00 p.m. Eastern Time.

Thank you, everyone.

MS. ARSENAULT: Thank you. Thanks, Tom, for everything, great job. Thank you everyone for keeping it nice and quiet out there.

All right, I'm going to disconnect the line.

(Whereupon, the above-entitled matter went off the record at 4:04 p.m.)

C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Public Comment Webinar

Before: USDA/NOSB

Date: 10-24-17

Place: webinar

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate record of the proceedings.

Neal R. Gross

Court Reporter

UNITED STATES DEPARTMENT OF AGRICULTURE

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NATIONAL ORGANIC STANDARDS BOARD

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PUBLIC COMMENT WEBINAR

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THURSDAY
OCTOBER 26, 2017

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The National Organic Standards Board convened via webinar at 1:00 p.m. Eastern Time, Tom Chapman, Chair, presiding.

BOARD MEMBERS PRESENT:

TOM CHAPMAN, Chair
ASHLEY SWAFFAR, Vice Chair
JESSE BUIE, Secretary
FRANCIS THICKE, Crops Subcommittee Chair
SUE BAIRD
HARRIET BEHAR
ASA BRADMAN
LISA de LIMA
STEVE ELA
JOELLE MOSSO
EMILY OAKLEY
SCOTT RICE
A-DAE ROMERO-BRIONES
DAN SEITZ

ALSO PRESENT:

PAUL LEWIS, Director, Standards Division
MICHELLE ARSENAULT, Advisory Committee Specialist, NOSB
LISA BRINES, National List Manager
SHANNON NALLY YANESSA, Assistant Director, Standards Division
MATT PAVONE, Policy Analyst, Standards Division
DEVON PATTILLO, Materials Specialist, Standards Division
BRIDGET McELROY, Policy Analyst, Standards Division

C-O-N-T-E-N-T-S

P-R-O-C-E-E-D-I-N-G-S

(1:04 p.m.)

MR. LEWIS: Thank you, Michelle, and good afternoon. I am Paul Lewis, Director, Standards Division with the National Organic Program. And I want to welcome members of the Board and the public to today's meeting of the National Organic Standards Board Public Webinar.

This is our second webinar this week and to help us prepare our upcoming meeting with the Board scheduled for October 31st through November 2nd. And at that meeting, the National Organic program will also be providing updates on NOP activities.

Please consult the NOP website for further information about the face to face meeting that'll be occurring in Jacksonville next week.

Today's webinar, like other meetings of the National Organic Standards Board, operate under the Federal Advisory Committee Act. And I look forward to hearing the comments of the

public today to assist the NOSB in preparing their recommendations to USDA.

I also want to personally thank my Standards Division colleagues for their help behind the scenes to bring this to today's teleconference.

I'd like to now turn to Mr. Tom Chapman, Chairman of the National Organic Standards Board. Tom, thank you for chairing this webinar today.

MR. CHAPMAN: Thank you, Paul. And I would like to welcome everyone to the public comment webinar prior to our full meeting. This is our second session in --

MS. ARSENAULT: Tom, did we lose you? If you're still talking, we can't hear you.

(No audible response)

MS. ARSENAULT: Tom, are you there?

MR. CHAPMAN: Sorry, it looks like you guys muted me. Probably the issue.

MS. ARSENAULT: Thanks.

MR. CHAPMAN: So where did I cut off

there, Michelle?

MS. ARSENAULT: Right at the beginning.

MR. CHAPMAN: Right at the beginning.

MS. ARSENAULT: Sorry about that.

MR. CHAPMAN: Can I start from the top real quick? So welcome, everybody. Looking forward to a successful second webinar. Forgive us if we have any IT issues, like the one just experienced.

And then most importantly, please remember to keep yourself on mute, Star 6 to mute, Star 7 to unmute. Or you can use your hand-set but don't put us on hold.

So after the introductory comments, we'll begin the public comments in the order on the list. If someone's not present at the time they are called, we will skip them and come to them at the end of the comment period if they've arrived, if time permits.

I will also call the following speakers, one or two ahead of time, and then if

they're on deck. If we can't find the phone number of a speaker, we'll ask members to message up to try to find them.

When called upon, commenters, you are asked to give your name and relevant affiliation for the record. We ask that you disclose all relevant affiliations pertaining to matters of business before the Board.

And I encourage NOSB members, if they want any further clarification, I encourage you to ask questions after the public commenter has finished their three minute time.

Comment time is three minutes per commenter. You'll hear the buzzer that Michelle practiced earlier. At that three minute mark, I'll ask for, out of respect for the Board and the other commenters on here, that you try to finish your sentence after hearing that buzzer. And then we'll open it up to questions from the Board at that time.

Again the format, we accept questions from the Board, but not from the general public.

After that, we'll move on to the next commenter and on down the list.

Now, there will be transcripts of this call bundled with the transcripts of the entire meeting. And with that, that's the end of my comments. So, Michelle, if you'd be so kind as to do a roll call of the Board present.

MS. ARSENAULT: Thanks, Tom. All right, Sue Baird, are you on the line with us?

MS. BAIRD: Yes, I am.

MS. ARSENAULT: Hello there. Harriet?

MS. BEHAR: Hi, there.

MS. ARSENAULT: I know you're here. Asa, I know you're here too. Are you still with us? You're on mute if you're talking.

MR. CHAPMAN: I just unmuted Asa.

MS. ARSENAULT: Thanks.

MR. BRADMAN: All right, can you hear me now?

MS. ARSENAULT: Hey, Asa. Got you. Great. Jesse, I see you up on the line. You there? Jesse, if you're talking, I can't hear

you.

(No audible response)

MS. ARSENAULT: No, still on mute, maybe?

(No audible response)

MS. ARSENAULT: Jesse, it looks like you're calling in from a phone, not a headset on your computer. So I think you're still on mute.

(No audible response)

MS. ARSENAULT: I've got to skip over Jesse for now, but I see him on there. Tom Chapman?

MR. CHAPMAN: Present.

MS. ARSENAULT: Lisa de Lima?

MS. DE LIMA: Yes.

MS. ARSENAULT: Great. Steve Ela?

MR. ELA: I'm here.

MS. ARSENAULT: Excellent. Dave Mortensen was not able to be with us today. So Dave's not on the line. Joelle Mosso?

MS. MOSSO: Here.

MS. ARSENAULT: Hi, Joelle. Emily

Oakley?

MS. OAKLEY: Present.

MS. ARSENAULT: Thank you, ma'am. Scott Rice?

MR. RICE: Present.

MS. ARSENAULT: Hey, Scott. A-Dae? A-Dae was --

MS. ROMERO-BRIONES: I'm here.

MS. ARSENAULT: Thank you.

MS. ROMERO-BRIONES: I was just going to stop at A-Dae.

MS. ARSENAULT: Figured I'd better get your last name in there too. Dan Seitz?

MR. SEITZ: Here.

MS. ARSENAULT: Hi, Dan. Ashley Swafar?

MS. SWAFFAR: I'm here.

MS. ARSENAULT: Hi, Ashley. And Francis Thicke?

MR. THICKE: Here.

MS. ARSENAULT: All right. Everyone is here.

MR. BUIE: Jesse Buie.

MS. ARSENAULT: Oh, sorry.

MR. BUIE: This is Jesse. I'm here.

MS. ARSENAULT: Great.

MR. BUIE: I keep losing connection for some reason, but I'm here.

MS. ARSENAULT: Okay. Thanks, Jesse. Thank you, Tom, for moving back around.

MR. CHAPMAN: All right. So there's 14, 15 Board members present. We do have a quorum, and we'll start with the comments now. Up first is Jennifer Davis, followed by Grant Richardson, and Chris Nagelhout. Jennifer, are you on the line with us?

(No audible response)

MS. ARSENAULT: So we haven't found Jennifer in the list. And I don't see anyone from that area code on the phone with us, Tom.

MR. CHAPMAN: All right. And Grant Richardson, are you here?

MR. RICHARDSON: I'm here, can you hear me?

MR. CHAPMAN: Yes, we can, Grant. Hold on one second, let me --- so after Grant we have Chris Nagelhout and then Marti Crouch.

All right, Grant, you can start with your name, and affiliation, and then just go into your comment.

MR. RICHARDSON: Great, thank you. My name is Grant Richardson. And I am the founder of Crisp Farms. Crisp Farms is a family farm in Smithville, Texas, which utilizes aquaponic farming to provide our community a year-round local supply of lettuces and leafy greens that adhere to the organic standards, an offer that is not currently available in our community due to our climate.

I'm a 25-year old first generation farmer. I have a master's degree in environmental engineering, but I quit my career in water treatment engineering to help launch this aquaponic farm, since I'm so passionate about this farming technique to provide a more sustainable and productive form of agriculture

that fully meets the organic standards.

There are several key points that I would like to share today that undoubtedly demonstrate the proposal to ban aquaponics from the NOP as both unreasonable and unfounded.

First and foremost, aquaponics is not hydroponics. On the August webinar, multiple Board members, in supporting this recommendation, were quoted as suggesting that aquaponics is really just hydroponics.

The proposal document ascertains that, and I quote, "Hydroponic production is highly dependent on the continuous use of fertilizer inputs to the production system rather than relying on productive soil and the natural recycling of nutrients through decaying organic matter to regenerate the fertility needs of the crops."

While this assessment may be accurate for conventional hydroponics, it is not accurate for aquaponics. In fact, this assessment is one of the fundamental reasons why aquaponics is not

hydroponics. This is because aquaponics does not and cannot use fertilizer inputs like hydroponics does because of the effect it would have on fish waste.

Furthermore, aquaponics farming functions in direct alignment with what the previous standards defined organic flora farming as organic. Contrary to what is stated in the proposal, aquaponics does use the natural recycling of nutrients through decaying organic matter to regenerate the fertility needs of the crops.

It does this through the natural and biological transformation of fish waste into beneficial nutrients for the crops. And these conjectures are being used as the justification to ban hydroponic practices? But it is not acceptable to group aquaponics under the umbrella of hydroponic growing practices because of the aforementioned differences.

Furthermore, at the first meeting of the hydroponic/aquaponic task force in January of

2016, the NOP stated that the NOP would likely need to undertake rulemaking on aquaponic farming and that, and I quote, "Rulemaking requires a comprehensive recommendation from the NOSB that addresses grey areas left by past recommendations."

One of the grey areas that are specifically called out was that aquaponic systems were not sufficiently addressed including NOSB recommendations. The recommendation brought forth in Jacksonville does not address the gray area for organic aquaponics, as the NOSB has been specifically tasked with doing.

Instead, the recommendation to ban aquaponics relies on misinformation and the lack of scientific due diligence in and attempt to lump aquaponics under the umbrella of hydroponics which as I previously articulated, it clearly is not. Thank you.

MR. CHAPMAN: Thank you. Any questions from the Board for Grant?

(No audible response)

MR. CHAPMAN: Grant, I'm not seeing any questions. Thank you for your comment. Up next we have Chris Nagelhout. Chris, are you here?

MR. NAGELHOUT: Yes, I'm here. Can you all hear me?

MR. CHAPMAN: Yes, we can, Chris. Hold on one moment. And after Chris, we had Marti Crouch and then Clarence Wagner. Chris, you can start with your name and relevant affiliation.

MR. NAGELHOUT: Sure. I'm Chris Nagelhout. And I'm the co-founder of Crisp Farms. As my colleague, Grant, just mentioned, we are a new aquaponic farm pending organic certification. And we grow lettuce and leafy greens.

Our method of organic farming uses one-tenth of the land, and 90 percent less water than soil-grown produce, and with the added benefit that we don't have any nutrient encroach into our system.

I don't know if you know this, but from November to March, 90 percent of the lettuce we will eat in the US and Canada will come from the Yuma Valley in Arizona. It brings trucks thousands of miles to consumers.

Crisp Farms lettuce, which is grown within 30 miles of Austin, is clearly more sustainable than the alternative products grown in drought-stricken areas and sucking the Colorado River dry.

Additionally, we don't use any petroleum-powered tractors. Our employees enjoy very comfortable working conditions, and our product, since it is contained in a fully biosecured greenhouse, never comes in contact with overspray from non-organic farms or pathogens from wild animals.

There has been much conjecture amongst the Board about our product being grown in fish waste. First of all, our product is not grown in fish waste. Because by the time it reaches our plant, it is broken down by natural biological

practices such as you would find in rivers, streams, and wetlands.

However, how would this activation be any different than organic farms who irrigate with water from natural bodies of water which undoubtedly contain aquatic life? What about organic rice farming where thousands of acres are flooded with river water, or how organic farmers use worm castings for fertilizer? And worms are a cold-blooded animal just like fish.

The proposal does not provide any justification to suggest that aquaponics poses more risk than those other NOP accepted practices.

I'd also like to highlight the fact that this recommendation has demonstrated to be against the consumer interests. There were 198 comments submitted to the Federal Register that this meeting would contain the search word "aquaponic." Of those comments, 167 of them were in support of organic aquaponics.

At least 84 percent of the public who

feels strongly enough about aquaponics farming to comment about this recommendation want aquaponics to remain organic, 84 percent. Clearly a vote to ban aquaponics from the NOP is in direct conflict with consumer interest.

Additionally, our world is rapidly growing, climate change is occurring, and arable land is not increasing. These are facts. If we're to take healthy, sustainable, and organic food into the future to feed not just the few who can afford but make it more affordable for all, then we need to be advocates for agriculture innovation and not be afraid of it.

If the organic labels can only be applied to soil-grown, then the label and its trust will eventually die. We are already meeting the organic standards of our growing methods, and we aren't asking for any special favors.

Lastly, I'll remind you that you are voting on aquaponics as a separate recommendation from hydroponics. Please consider how the

information you've learned about aquaponics differentiates it from hydroponics.

Transcripts from previous discussions have indicated confusion regarding the difference between hydro and aqua. It would be inappropriate to base one's understanding and vote on aquaponics based off of a muddled understanding of our industry and methods.

We are a distinct and separate method of organic agriculture with hydroponics, and we should be considered as such. Thank you for your time.

MR. CHAPMAN: Thank you. I have some questions from the Board, first Steve and then Emily. Steve?

MR. ELA: Yes, for both of you, I have a couple of questions. I mean, you both stated you can't use fertilizer, there are no nutrient inputs. But yet you are, I presume, feeding the fish which, I mean, has been what is being transformed into a nutrient. So I guess I'd like you to comment both on that nutrient input and

then also whether you're adding any micronutrients.

And then finally I am, I guess, would like you to at least give a little bit more --- I get that the fertilizer's coming from the fish, but the plants themselves are still growing in the hydroponic media, even though the fertilizer source is the fish.

So I'm not quite clear on how you can say that's not a hydroponic plant growing system, even though the aquaponic system, I get, as a whole is bigger.

MR. NAGELHOUT: Absolutely. So our claim that we're not putting any inputs into our system to fertilize our plants, I still stand by that claim. And I know we are putting a fish food in. It's a non-GMO fish food for our fish.

However, our fish waste, basically manure in this case, but when you're putting manure on soil fields for organic grown, it isn't required that those cows, or turkeys, or chickens were fed an organic diet.

It doesn't really break down that way in the water. Our fish food isn't left to decompose in the water. It's fully consumed by the fish. So I hope that answers your question there.

Also, within our system there are no micronutrients that we put in. There aren't any other synthetic fertilizers or, well, any NOP allowed fertilizers. So the only other input we do have in our system is crushed oyster shell which just maintains a buffer for pH. And it's just a natural product.

All of the micronutrients in our system are nutrients that our plants do require, are produced in the water column. It's a natural biology nitrification, all the other beneficial bacteria that are located in our entire system.

And if you think about, like, a wetland, or streams, or rivers, it functions exactly the same way that those natural byproducts from the aquatic organisms that live in the water are broken down. So does that

answer your question right there about the inputs into our systems?

MR. ELA: Yes, that's good.

MR. NAGELHOUT: Okay. And, I'm sorry, would you --- I think you had two questions. Would you remind me what the second one was?

MR. ELA: It was just that I am still --- I get that the whole aquaponic system is a larger system. But for the plants themselves, I'm not totally clear of why it still seems like that's a hydroponic system at that point.

MR. NAGELHOUT: Sure. So the way we're viewing that, and the way I think it ought to be interpreted is, yes, we are, we're using ideas from aquaculture. And we are using ideas from hydroponics.

But just because we use --- in our system we use a deepwater culture --- just because it looks like other hydroponic systems, it doesn't function the same way.

So I don't like to think of aquaponics as being grouped under hydroponics just because

of the lack of input into our systems, the natural biology that's alive and constantly refreshing itself within our system.

We don't have to drain any of our water. And it's just --- it's a different makeup. It's kind of like putting, you know, the first cars that were invented and they contained a buggy. And you then feel like saying, well, how is this not a carriage. And they're just two separate technologies that can look similar, and be designed similarly, but don't actually function that way.

MR. CHAPMAN: Thank you. Emily?

MS. OAKLEY: Thank you. Could you please explain the number of days or the time interval between when the water comes in contact with the fish and when it comes in contact with the plant root? Thank you.

MR. NAGELHOUT: Yes. So our system is a recirculating system. There isn't a number of days interval that I could quote you. I mean, it is a system that is constantly recirculating.

However, the way that our system functions is that after the fish tank we have a clarifier which has a baffle system. That's a very low water flow pressure, very large flow down the solids.

So in that clarifier, that's where the fish food solids settle. And then we pump those out. They would just --- we pull a gate valve, and it drains very quickly. We use that with our composting from our trimmings from our lettuce and the coir substrate that we use. And we use that to apply to the land.

So there's not a time difference between the two, like, we don't hold the fish water in a certain system and then let it go a number of days before it's introduced to our lettuce crop.

MS. OAKLEY: Thank you.

MR. CHAPMAN: Thank you very much. We'll be moving on to the next commenter. Thank you, Chris. Next I have Marti Crouch, followed by Clarence Wagner, and then Wil Hemker. Marti

Crouch, are you on the line?

MS. CROUCH: Yes.

MR. CHAPMAN: And if you can start with your name and relevant affiliation.

MS. CROUCH: Yes, my name is Marti Crouch, and I'm presenting comments for the Center for Food Safety. I consult on technical issues including the one I'll be talking about. And these were comments that were submitted, part of comments submitted by the Center for Food Safety on October 11th. And those include footnotes.

This is for the Material Subcommittee and specifically on the proposal for additional excluded methods to be listed in the National Organic Program Excluded Methods guidance document.

The Center for Food Safety supports the addition of cisgenesis, intragenesis, and agroinfiltration to the list of excluded methods but cautions NOSB to moving forward at this time without clear definitions of the three methods

provided in the proposal.

In these, as well as past comments, CFS has provided ample language for the Board to develop clear definitions of the three methods as well as several other methods that remain to be determined in the terminology chart.

Whether genes are moved or manipulated between species or within species, altered techniques, cisgenesis, intragenesis, and agroinfiltration, took the definition of genetic engineering under definitions and principles in criteria.

We also recommend the use of transposons, which are still listed as TBD in the terminology chart, be clearly defined, or the method, and categorized as excluded.

Now in more detail, and I will talk about cisgenesis, and then Jaydee Hanson from CFS will talk later in the afternoon about the other methods.

According to a study cited in CFS comments, "Cisgenesis refers to the genetic

modification of the recipient plant, the natural gene from a sexually compatible plant. Such a gene includes its introns and is flanked by its native promoter and terminator in the normal sense orientation."

In cisgenesis then, a biotechnologist uses genetic engineering techniques to move one or a few genes between species and lines and which results in many of the same concerns as transgenesis.

We are aware that some people worry that excluding cisgenesis will limit some kinds of Brassica breeding that are used to produce new vegetable varieties. Because in addition to sexual crossing, Brassica breeders sometimes use cell fusion within the plant family, in this case, it would be grass casein, to introduce nitrate-stimulated species.

However, cell fusion involves mixing together of all the cell contents, including entire genomes of the varieties being fused without previous invitro manipulation of specific

nucleic acids.

The 2013 NOP memo allowed cell fusion within the plant family, because for decades many Brassica crops had been developed using this method. So it's considered conventional breeding rather than genetic engineering. That's also why the Codex definition does this.

So listing cisgenesis has no impact on whether cell fusion within the same family was considered an excluded method. Thank you.

MR. CHAPMAN: Thank you, Marti. Any questions from the Board?

(No audible response)

MR. CHAPMAN: I'm not seeing any questions. Thank you very much for your comments.

MS. CROUCH: Yes, great. Thank you.

MR. CHAPMAN: And our next commenter is Clarence Wagner, followed by Wil Hemker, and then Ashley Buhler after that. Clarence, are you here?

MR. WAGNER: Yes, can you hear me?

MR. CHAPMAN: Yes, I can. Can you please start with your name and relevant affiliation?

MR. WAGNER: Yes, my name is Clarence Wagner, CEA Fresh Farms.

Since 1995 and until today, the NOSB has recommended and included organic hydroponic farming on the approved list of organic farming methods to be certified and receive the USDA organic seal.

During these many years, organic hydroponic farmers, in compliance with the guidance and inspections of USDA certifying bodies, have built and populated facilities across the country.

In the late 2014 Organic Integrity Quarterly, the NOP stated, "Organic hydroponics is a method of growing plants using mineral-nutrient solutions in water without soil. Terrestrial plants may be growing with their roots in the mineral-nutrient solution only or in an inert medium."

In the future, the NOP may provide additional guidance regarding organic hydroponic direction and how the regulations apply to such methods.

At the NOSB webinar meeting on August 14th, in the discussions about organic hydroponics, Miles McEvoy stated of these systems. There have been no accounts of organic operations that are not done in soil that are certified organic under the EU standards.

In the US, the European Union organic equivalency arrangement has no restrictions in terms of hydroponics. So there is no critical variance or differences there.

One of the edicts about the US organic regulation is that it provides a lot of flexibility in operation to develop systems that are and can be compliant with the regulations.

Nevertheless, the Crops Subcommittee compact performance and containment growing recommendations that are being presented to the Board for a vote during this session is a

recommendation to prohibit aeroponic, aquaponic, and hydroponic growing methods and continued certification as USDA organic.

These recommendations completely nullify the desire of the NOP for further guidance towards organic hydroponic acceptance and reverses the 22-year history of hydroponics being included in the family of USDA Organic Growers.

These recommendations being presented, if passed, shuts the door in the face of thousands of organic hydroponic and aquaponic farmers, many of whom may lose their businesses, and ignores our country's need for more organic produce, not less, in the face of climate change, a growing population, and the need for new innovative techniques for organic farming.

It is not a step forward but a step backward to determine that technology needs is more possible for compliance. I could stand here and quote on all of the advantages of hydroponic systems all day. And I have already spoken to

the well documented minority view of the Committee which encompasses the many virtues of organic hydroponic farming.

I also recommend the well written CCOF proposal submitted for consideration with the compromise that includes everyone in the organic family and supports USDA regulations that are inclusive and not expensive, as soil and water organic systems have their advantages and limitations.

Therefore, I urge the full Board not to pass this proposal as it stands but to send it back to the Crops Committee to find a way to keep organic hydroponics in the family of organic methods, with positive guidance from past recommendations, not banishment. Thank you.

MR. CHAPMAN: Thank you. I have a question from Emily.

MS. OAKLEY: Thank you. I thought I heard you reference thousands of certified organic hydroponic, aeroponic, and container-based systems. Did I hear that correctly?

MR. WAGNER: I said thousands of people working with these systems --

MS. OAKLEY: Oh --

MR. WAGNER: -- 126 employees. So if you put together the people who work in all of these systems, not just the systems themselves, yes, that encompasses thousands.

MS. OAKLEY: Okay, thank you. I just didn't hear that clearly. I appreciate the characterization.

MR. WAGNER: No problem, thank you. Okay.

MR. CHAPMAN: Thank you. Any other questions from the Board --

PARTICIPANT: Hello?

MR. CHAPMAN: -- at this time? Sorry, can you hear me?

MS. BEHAR: Yes, hi. I'm wondering, in the marketplace, with all of the benefits that you say hydroponic has, why is the organic label so important to you? Why would not the hydroponic label, if it was promoted the way you

are promoting it here, not bring customers as a premium that you need?

MR. WAGNER: The organic label is already accepted by the population and the Board as something that is clean, something that does not have pesticides, and herbicides, and chemicals, and other, you know, hazardous materials that we all know about.

We need organic certified in quotes. Everything that we use is organic or it should be organic. And also the flexibility of the aquaponic in the USDA regulations, as they interpret it today, do allow for this, to expand the organic market, to expand the opportunity for Americans to get really clean food.

We heard from others across America yesterday saying this very same thing. Before labeling, a change needs to be made to describe whether it's organic soil or that it's hydroponic. That's fine, but it needs to be in the same family, because we have the same methods, except for the soil seems to be the

major issue, not other issues regarding the regulations.

MR. CHAPMAN: Thank you, Clarence. I don't know if there are any other questions at this time. So we'll move to our next speaker, Wil Hemker. Following that, we have Ashley Buhler and Yemi Amu. Are they already on the line?

MR. HEMKER: Yes, I am, Chairman. And I have four slides. Do you have them on your screen?

MR. CHAPMAN: Michelle? Have you got the slides?

MS. ARSENAULT: They are up on my screen. Do you guys see them yet?

MR. CHAPMAN: And, Wil, if you could start with your name and relevant affiliations?

MR. HEMKER: Yes, thank you. My name is Wil Hemker. I'm with the University of Akron Research Foundation. Slide 1 ---

MS. ARSENAULT: Sorry, Tom, can you see the slides?

MR. CHAPMAN: Yes, we can see the slides.

MS. ARSENAULT: Okay, great. Thanks.

MR. CHAPMAN: Wil, go ahead.

MR. HEMKER: Thank you. This Board, and the NOP, and myself hold the organic standards so that consumers can trust the label, and Mother Earth can be more resilient.

The Crop Subcommittee proposal on hydroponics and container growing recommendations from August 29th of this year were not authored on using sound science and up to date resilient ecological production facts, nor did they address organic food crops in today's marketplace which have unsafe exposure levels of some components.

Like the CCOF written comments, the largest certifier of organic farms, I agree with their concerns for terms used in that report that say inert or trophic levels for hydroponic cultivation. These reveal a degree of ignorance to the salient scientific literature.

Slide 2 please. The soil is teeming

with life, since life is enabled by water. And aqueous flow of critical elements and the microbiome through this root zone allows plants to thrive. Soil, or soilless, water is the medium. Therefore diversity should be discussed about more than simply soil. But root-zone ecosystems is critical.

Slide 3. In 1990, the NASA-controlled Ecological Life-support System program investigated hydroponic production. They demonstrated in their model crop that, grown in soil, the rhizome microbiome was teeming with life, and in soilless as well. Levels to 100 billion cells per gram were found in either system.

Therefore, both soil and hydroponic growing displayed plentiful root-zone microbiome. Robust plant life defines the level of aquatic trophic activity.

Slide 4 please? Addressing nitrate concentrations in leafy greens, organic field grown versus hydroponic standards, and a new

method called nitrate reduction methods in hydroponics, Cornell's Agriculture and Life Sciences lab measured, in soil fields, organics similar or higher than conventional hydroponics.

And the new technique, hydroponics nitrate reduction methods, found ten to 100 times less nitrates in that production versus organic field production. The table speaks for itself.

Also, provided to this Board in April of 2017, heavy metal analysis of USDA organic certified field grown versus greenhouse hydroponic grown spinach has found 60 times more cadmium in field grown than hydroponics. The level of cadmium at that level exceeds EPA drinking standards by ten times.

USDA certified organics needs to be rooted in strong science and good agricultural practices, safe products are needed for our consumers. Thank you.

MR. CHAPMAN: Thank you, Wil. Any questions for Wil? I see Francis.

MR. THICKE: Hi, thank you, Wil. You

showed a slide on the number of microbes in hydroponics. But compared to soil growing, what about the diversity? What is the comparison of the diversity of different microbes in soil versus hydroponics? And do you have data on that?

MR. HEMKER: Not at my hand right now. I could go back to the literature and find out how it was done on the diversity. Can you provide me your benchmark for diversity in soils that you use?

MR. THICKE: I'm interested in the comparison of hydroponic versus soil-grown. What is it? I've seen some studies that are showing differences in organic versus conventional in soil-grown. But I've looked, and I've not really seen any data to compare the diversity of microbes in hydroponics versus so and so.

MR. HEMKER: What impact would that make on the vitality of the plant crop? Can you tell me that?

MR. THICKE: It indicates a whole

different ecology. And as a cell scientist, I know that we don't really understand all the implications of ecology in soil. But just seeing differences gives us something to ponder about that.

I mean, really, can we really match that in the hydroponic system? And are those differences important? We need to have those answers.

MR. HEMKER: Those are questions yet to be defined, I'm certain. I'm not a soil scientist. But I know this, that a microbiome plays a very important route in our own human health.

And I'm a food scientist. And, you know, they're working with new growers right now in this area. So I think that's a valid question. But I think, before we try to parse the difference between soil versus soilless, we better look at that microbiome and what's going on in that trophic medium.

MR. THICKE: Thank you.

MR. HEMKER: Thank you.

MR. CHAPMAN: Thank you, any other questions from the Board?

(No audible response)

MR. CHAPMAN: Not seeing any questions, Wil, thank you for your comments.

MR. HEMKER: Thank you for the opportunity.

MR. CHAPMAN: Up next I have Ashley Buhler, followed by Yemi Amu, and Michael McDonald. Ashley, are you here with us?

MS. BUHLER: I am. Can you hear me?

MR. CHAPMAN: Yes, we can. Ashley, if you can start with your name and relevant affiliation.

MS. BUHLER: My name is Ashley Buhler. I am the Animal Well-Being and Ethics Manager for Miller Poultry.

MR. CHAPMAN: Great. And just go ahead with your comment.

MS. BUHLER: Thank you. I first wanted to thank the Board for the opportunity to

do so today. The first topic I would like to address is chlorine dioxide. I would urge the Board to keep that on the list of approved materials.

In our organic production, we found that that's the best option for the sanitation for our bird health. We've looked at other sanitizers within organic approved, and our non-organic birds, and have found that chlorine dioxide is the best method for sanitation.

The second point I wanted to address is the research on the thiamine. The Board has asked for research to be done and some information on where the research could lead.

I wanted to address the fish meal and animal byproducts portion of that. The current standard in the organic program, 205.237, state that currently feed, a million of poultry slaughter byproducts cannot be given to mammals or poultry.

So if there is research to be done, it would have to be done outside of organic

production, or that regulation would need to be changed in order to do the regulation. And then it would need to go through the FDA in order to get that approval.

And also, a current regulation for the GAP certification in certified humane do not allow for fish meal and avian byproducts to be used in the feed. So any research would need to be done in birds that do not have those certifications in order for that to happen.

New products that would be used to replace the thiamine would also need to balance the amino acid profile in the seed. And that can create a challenge for balancing rations. If the new material is high in the thiamine it can also be high in some other amino acids which may create that challenge.

The new products could also not be as digestible to the birds, and that could create some loss in feed conversion and also excess waste to the environment. If the birds are not able to process all that they're eating, that

could create a problem in the grading of those birds outside.

Currently, there is not much research that has been done with fast growing and full growing broilers as to how much thiamine they each need. But according to our nutritionist, the thiamine will still be important.

And the ratio will probably be similar in fast growing and slow growing. So even if we switch to a slow growing broiler, you would probably still need the same amount of the thiamine.

To address the flock management practices --- Thank you very much.

MR. CHAPMAN: Thank you. Any questions from the Board?

(No audible response)

MR. CHAPMAN: I don't see any questions from the Board. Thank you for your comments.

MS. BUHLER: Thank you.

MR. CHAPMAN: Up next we have Yemi

Amu. Yemi, are you on the line?

(No audible response)

MR. CHAPMAN: Yemi, we have not been able to find you. Going once, going twice, moving on. Mike McDonald, are you on the line?

MR. MCDONALD: Yes, I'm here.

MR. CHAPMAN: Okay, Michael. Hold on one second. After Michael is Dana Perls followed by Mani Skaria.

Michael, if you can start with your name, and relevant affiliation, and then go into your comments.

MR. MCDONALD: My name is Michael McDonald with H2O Produce. I'm the CEO and president of our company. And I will be speaking on behalf of aquaponics, hydroponics, aeroponics as a whole.

Up front, my apologies, I am offsite. I'm not on a computer. So I'm a little short-lived today, but I have all my presentation available.

Outright, over the past day and a

half, and past few months, I've had nothing but disagreement from soil-based farmers, partly aquaponics, hydroponics, aeroponics, with little to no support of why traditional farming is better aside from an article of the quality without full study of the people in the study to further understand other potential health problems.

Specifically, in the individual's or the body's lack of ability to absorb nitrates. I'm speaking very specifically of an article that was brought up on Tuesday.

The American Journal of Clinical Nutrition back in 2009 specifically states evidence of adverse effect of nitrate is inconsistent and that nitrate may actually be beneficial.

There is some evidence that nitrate reduces blood pressure. The blood pressure lowering effect of vegetables and the vast dietary approaches to stop hypertension trials reduced the nitrate in these vegetables that were

actually studied.

Another article specifically states nitrates are so essential in the fact that our bodies even create it on their own. For every kilogram of our body weight we carry, your body naturally produces about one milligram of nitrate. This is specifically out of Jeff Snyder, PhD, Associate Professor at the University of Wisconsin-Madison, Department of Animal Sciences.

Our production may very well be what these studies and an overall ushering in new ways of thinking. We, the aquaponic, hydroponic, and aeroponic farmers endorsed the USDA certified organic label struggle in helping them understand what we do.

Saying to them that we are farmers and have a higher year-round yield with less of a cost associated with traditional farming, decreased growth cycles, and we do not have to wield the problems than traditional farmers do.

Our society is conditioned to believe

that organic farming is pesticide free and has little to low chemicals associated to food they are consuming.

In traditional large farming operations, it is completely understood that certain measures have to be taken to protect crops. However, container-based growing has proven over the years to be more sustainable and even more so now to be more cost effective.

The association that my company, H2O Produce, has with the USDA certified organic label assures my farmers that this is not yet complete. Upon concluding, we at H2O Produce ---

MR. CHAPMAN: I'm going to have to cut you off there. But thank you for your comments. Any questions from the Board?

(No audible response)

MR. CHAPMAN: I'm not seeing any questions. Michael, thank you very much for your comments. We will proceed onto our next commenter. Is Dana Perls here? Sorry, is Dana Perls here? Did I hear that?

MS. ARSENAULT: I'm not seeing Dana on the line, Tom. And I just sent out an email, a chat that we were on, and she hasn't answered. So she may not be on yet.

MR. CHAPMAN: Okay. Mani Skaria, are you here?

MR. SKARIA: Yes. Can you hear me?

MR. CHAPMAN: Yes, I can. Hold on one moment. On deck after Mani will be Shannon Sbarra and Roberto Ramirez.

Mani, if you can start with your name, affiliation, and then proceed with your comments.

MR. SKARIA: Yes, sir. My name is Mani Skaria. I am the president and the CEO of US Citrus, specializing in first line production. And I'm also a plant pathologist and a citrus specialist with 30 years mostly with the Texas A&M University.

For your respected members, we think the national problem in agriculture, how can it be that the United States, as the world economic leader, continues to rely on imports to supply

organically grown products to our consumers?

The heart of the problem is that organic food production is not just economically viable in the United States. Why invest in growing if it will be a losing proposition from the beginning?

Citrus particularly faces two additional challenges with decreased has driven the cost of production in the United States since 2005.

There is the third largest citrus production area in the United States. There are three real examples of individuals who basically could not overcome these challenges.

I know an 86-year old citrus grower with 64 years of experience in citrus. They are citrus production because of fees, higher productions cost.

Number two, a middle-aged organic citrus grower and a past president of Texas Citrus Mutual will have organic land production because of their own reasons.

Number three, a citrus scientist with four decades of citrus experience, and with two decades of citrus farming experience, because of the same reasons, cannot ask for 100-person organic farming of citrus production on a larger scale.

There's an unfair international market put them in the United States where supplies are cheaper with their lower manual labor cost? We will not be able to compete with that cost factor. Ours will have to quality products grown here on domestic soil using high pesticide-free standards.

Respected members, I ask you study and propose ways to support the production and distribution of pesticide-free citrus grown in the United States.

I'm available to assist in any way that I can to define the problem, define the issues, and identify experts. Now more than ever, we must be comfortable to help US agriculture, especially citrus.

Thank you. And I have provided a medium and an audio with a lot of information. Thank you very much.

MR. CHAPMAN: Thank you. Any questions from the Board?

(No audible response)

MR. CHAPMAN: I'm not seeing any questions. Thank you very much for your comments.

MR. SKARIA: Thank you.

MR. CHAPMAN: Up next, Shannon Sabara. Shannon, are you here?

MS. SABARA: I am here.

MR. CHAPMAN: Excellent.

MS. SABARA: Can you hear me?

MR. CHAPMAN: Yes, we can, Shannon. Hold on one second.

After Shannon, Roberto Ramirez. We haven't found Roberto. If you're on the line, please message Michelle. And after Roberto is Robin Seeley.

Shannon, if you can, start with your

name, relevant affiliation, and then proceed into your comments.

MS. SABARA: My name is Shannon Sbara. I'm an aquaponic farmer for the past five years. I am strongly for allowing aquaponic farms to be organically certified.

In addition to the multitude of other reasons that have already been stated during this hearing, I have just one essential point of clarification. Our nutrients, whether in soil, in a hydroponic system, or in an aquaponic system, ultimately enter the root zones in a liquid form.

In other words, the fungi and bacteria that facilitate the interchange of nutrients transfer those molecules in an aqueous form. I'll say it again. Water, not soil, is the delivery mechanism for nutrients. Bacteria and fungi are responsible for making those nutrients available, but water is responsible for the uptake.

Aquaponics and soil farming both rely

on microorganisms to make nutrients available. And they both rely on water to liquidize the nutrients so that the plants can use them.

On another note, one of the Board members on Tuesday asked a fellow aquaponic farmer about mycorrhizae in the soil. And I wanted to follow-up. What I can say is that there's a diverse spectrum of microorganisms in aquaponic systems.

Some of them less scientifically about fungi in aquaponic systems, but as I understand it, fungi primarily occur in the root zone. And there's no reason to believe that mycorrhizae are not present in an aquaponic environment.

Both organic soil farmers and aquaponic farmers have been experimenting with adding beneficial fungi to their systems. I don't think it's appropriate to determine if the farm is organic or not based on whether fungi are present.

If the presence of fungi on the roots

is a requirement for organic certification, then it should be something that can be tested in both soil and aquaponic farms. Our organic farms should be held to the same scientifically verifiable standards.

One more example from nature. Where I live there is a lot of lava rock. And because lava rock is very porous, it can hold water, and we retrieve the plants growing straight out of the lava rock with no soil at all. Even in nature, soil is not required. Thank you.

MR. CHAPMAN: Thank you. Any questions from the Board?

(No audible response)

MR. CHAPMAN: I'm not seeing any questions from the Board. Thank you very much for your comments.

MS. ARSENAULT: Tom, I just saw Asa raise his hand.

MR. CHAPMAN: Sorry. Asa raised his hand.

MR. BRADMAN: Hi. This is a question

I wanted to ask earlier to another aquaponic producer. But actually, this is really to everyone that I'm asking, that you think about it on all sides of this issue.

And there was a reference earlier to kind of support for the CCOF suggestions of kind of a compromise labeling that would distinguish, for example, hydroponics and aquaponics. And I want everyone to think about that. And I've seen opinions on it from all sides, but I'd like your opinion on that as well.

MS. SABARA: Thank you for that question. Yes, I think that, you know, organic is something that customers have learned to rely on, on choosing organic as a simple way to become -- and whether and or not it's a food that is healthy for them and good for the environment.

And I think that we need to really think about the spirit of that organic certification and try not to get caught up in politics, for one, but also not getting caught up in anything that can't be scientifically verified

with, you know, real reasons behind changes that are going to be made.

So with that said, I actually --- you know, we have aquaponics on our label. We are proud of being aquaponic. And I personally have no problem being an aquaponic organic provider. And if you want to make that a separate label, that's the same difference to me.

I do think that aquaponics should be distinguished from general hydroponics. I think that that's important. And I think that it should be --- I think we should just be really careful before we make things more complicated for the consumer.

Because in my experience, you know, it's a lot of work to even explain to somebody what aquaponics is, and to develop that relationship with our consumers to help them understand why we're doing aquaponics, and why we actually think that it's important, and why we think that aquaponics is actually a great way to provide stewardship for the environment and for

the soil.

Because aquaponics, you know, we're not using a recirculating system for our water. We're actually providing stewardship for the soil, because we're not doing anything bad to the soil, you know, if that makes sense.

And we're not sending any of our organic fertilizers down into the watershed, which does affect the watershed system. So there's a lot of things that we're doing that are benefitting the environment and helping the organic certification. So, yes, I think that ---

MR. CHAPMAN: I need to cut you off. Two more questions for anyone from Francis and one from Steve. If you could try to stick to answering the question as directly as possible. Thank you.

MS. SABARA: Yes.

MR. THICKE: Thank you, Shannon, for your comments. And one comment you made about all nutrients go through the water, are you familiar with the principle of contact exchange,

that plant roots can touch soil particles and actually directly exchange ions with the soil without necessarily going through the water medium?

MS. SABARA: I guess I can't say that I am an expert in that, on any level. I was speaking more generally. So I can't really speak to that specifically.

I can say that generally, you know, the way that plants generally get their nutrients is through the water. And that would be, I'm sure, most of the time. And anything other than getting nutrients through the water is probably more of a one-off situation and not something that, I think, is a standard way of nutrient uptake.

MR. THICKE: Thank you.

MR. CHAPMAN: Steve?

MR. ELA: Well, to follow-up with that, and I was the one that asked the mycorrhizae question the other day. But, I mean, my understanding is that, you know, as we are

investigating --- and I think this is a work in progress in the scientific community --- that we are seeing that the mycorrhizae are actually the medium in between the water system and the plant root.

And many times, it's not actually the plant root directly taking up that nutrient, although they may be able to, but it's the mycorrhizal system that forages for those nutrients and then feeds that into the plant.

So I'm curious. I mean, you just said, you know, some of these plant soil contacts are one-off. But to me, the research is showing even more that it's not a direct exchange. You know, I'd just like to follow-up on that a little bit with you.

MS. SABARA: Okay. So, like I said, I am not a scientist that has an expertise in this. So I can get some follow-up information to you, as I can talk to somebody that has more actual knowledge of this subject.

What I can say is that, like I said,

I really do think that whatever the standards are, they need to be applied to both soil farmers and aquaponic farmers. There shouldn't be any, you know, any reason that aquaponics should be excluded when we don't have scientifically researched, you know, actual scientific research that says it's not happening in aquaponic systems.

So far, it's just hearsay. You know, there's no reason to think that mycorrhizae are not in an aquaponic system.

MR. CHAPMAN: Thank you, Shannon. That's it for questions on our end. So we're going to move to the commenter that's -- because we were moving quite ahead of schedule now, not ahead of schedule, but we're still doing great. So we're going to go back to Dana Perls. Dana Perls, are you on the line?

MS. PERLS: I am. Can you hear me?

MR. CHAPMAN: Yes, we can. Hold on one second.

MS. PERLS: Okay.

MR. CHAPMAN: After Dana, we'll go to Roberto Ramirez, and then Robin Seeley. Dana, if you can start with your name and affiliation, and then proceed with your comments.

MS. PERLS: Great. Well, thank you for circling back. Apologies for being late. My name is Dana Perls. And I am a senior food and technology campaigner with Friends of the Earth U.S.

And I would like to comment on excluded methods in synthetic biology. I've been tracking fishing for four and a half years, and I'm honored to be part of the Materials Subcommittee Ad Hoc Working Group on the issue.

I'd like to provide comment on the Materials Subcommittee proposal on excluded methods. We'd like to strongly urge the Materials and GMO Subcommittee to include several techniques in the excluded methods list, namely cisgenesis, intragenesis, agroinfiltration, and transposons. They should be included in its excluded methods terminology.

We want to ensure that we have an organic certification which really addresses these emerging biotechnologies and new techniques which some are trying to apply to agriculture.

And in November 2016, last year the NOSB voted unanimously to update US organic standards to exclude ingredients derived from next generation genetic engineering and gene editing.

As NOSB already established, these new genetic engineering techniques are not compatible with organic and sustainable agriculture, and currently the list of techniques that are excluded methods is incomplete. And there are several currently marked TBD techniques that we believe fall within the NOSB definition of genetic engineering and modern biotech.

So again, we want to include cisgenesis, intragenesis, agroinfiltration, and transposons. The first three, cisgenesis, intragenesis, and agroinfiltration, all involve intentional genetic modification. And these

three techniques clearly fall under the NOSB's already adopted definition of modern biotechnology and therefore should be excluded techniques.

And lastly, I just want to note that although transposons are, in fact, used in some cases to make genetically engineered animal vaccines, and those are not prohibited in organic, they do fall under the new criteria for excluded methods that was adopted last year.

So we recommend that, as a clarification, transposons for use in creating genetically engineered plants or animals should be listed in the guidance on excluded methods and the terminology chart as excluded.

And then perhaps it could be accompanied with a note clarifying that their use in animal vaccines may be currently permitted under the current rules, permitted in organic, but that it should be excluded for use in creating genetically engineered plants and animals.

So just to sum up, you know, we support the improvements and updates to the standards which are going to preserve the integrity of organic classification. And in order for that to really happen, NOSB should exclude the new gene editing and some biotechniques from organic by updating the list of excluded techniques.

MR. CHAPMAN: Thank you, Dana.

MS. PERLS: Yes.

MR. CHAPMAN: Any questions from the Board?

(No audible response)

MR. CHAPMAN: Not seeing any questions, so thank you very much. And moving on, we have Roberto Ramirez next, followed by Robin Seeley, and then Marc Ketchel.

Roberto, are you on the line with us?

MR. RAMIRIZ: Yes, I'm here. Can you hear me?

MR. CHAPMAN: Yes, we can. Roberto, if you could start with your name, and

affiliation, and then move into your comments.

MR. RAMIREZ: Sure. Good afternoon. My name is Roberto Ramirez. I manage 70 acres of substrate grown berries in upstate California. Twenty-six acres of the 70 are organic.

I am here to encourage the members of the Board to vote no on the Crop Subcommittee recommendation for container production. There are several reasons why these proposals should be voted no. But here are some of the main reasons.

Recommendation is not reasonable for any crop. It is prescriptive to follow certain farming practices that are barred from advisable and not well sustained.

It is not in the spirit of organics, because is not considered in site-specific conditions. And it would create pollution to my soils and my farm by being across the distribution.

The recommendations might exclude growing systems different to soil farming because these will create toxic conditions for crops at

the root zone level avoiding any new growth.

Perennial crops are clearly not considered. Providing annual nitrogen needs of a plant in a solid form would require me to incur an excessive labor hours and waste of resources. To fulfill this requirement after year one will make my business unviable. Minimum wage in California is increasing gradually, and it will get up to $15 per hour by 2021.

Soluble or liquid form of nitrogen production does not mean it is on the viable form for plants which is the ionic form of elements, especially nitrogen. For nitrogen to be available to plants from the organic fertilizer solid, liquid, or soluble, it needs to go through the nitrogen cycle that, by the way, needs to happen in solution.

I urge the Board to vote no on this recommendation and for it to be sent back to Crops Subcommittee for further definition of container growing standards.

There are less prescriptive farming

practices and more inclusive of alternate production practices that still remain true to the spirit and principles of organic farming.

I would like to thank the Board for the opportunity to comment on this subject of interest to my farming and for their time and effort. I will be happy to answer questions.

MR. CHAPMAN: Thank you, Roberto. Any questions from the Board?

I am not seeing, oh, Francis, go ahead.

MR. THICKE: Quickly, can you tell us what you use for a substrate or growing medium in your operation?

MR. RAMIREZ: Yes, of course. That is how we determine what kind of substrate we're going use is depending on the site-specific conditions, meaning that one of the main components is water quality, the climate, and depending on that, we will variate the components of it.

But mainly, it might be composed of

coco coir, peat moss, perlite, gypsum, rock phosphate. And we're starting to experiment a little bit with some burning compost.

We've been doing this, or I've been doing this for about a little bit over a year with some of the berries that we work with. And it's still very early for us to define a set percentage of this and that. So we're still discovering that as we go on a commercial size farm.

MR. THICKE: Thank you.

MR. CHAPMAN: Thank you. Thank you, Roberto, I'm not seeing any other questions from the Board. So we're going to move on.

MR. RAMIREZ: Okay.

MR. CHAPMAN: Next we have Robin Seeley, followed by Marc Ketchel, and then Caleb Adams. Robin, are you on the line?

MS. SEELEY: Yes, I am.

MR. CHAPMAN: Excellent. And you can start with your name, and affiliation, and then proceed to your comments.

MS. SEELEY: Yes. I'm Robin Hadlock Seeley. I'm a senior research associate at Cornell University and also a faculty fellow at the Atkinson Center for a Sustainable Future at Cornell.

Thank you all for your time and interest during the webinar. My focus is the issue of marine materials, also known as marine algae, aquatic plant extract, kelp, and seaweed. I've been working on wild sea harvesting for 17 years.

Most recently, NOSB documents relating to November of 2016, the marine materials Discussion document. It identifies several issues among the 205.207 wild crop harvesting standards.

And the discussion document ended by stating production of marine materials must be based on the maintenance of biodiversity of natural aquatic ecosystems and the continuing health of the surrounding aquatic and terrestrial ecosystems.

What is defined here, as one of the kelps, which is important in agriculture and critically important to marine systems, is as is shown here.

After getting support the marine community of over 100 species of birds, fish, and invertebrates, including a school of fish shown in Panel A in this slide, and the Atlantic puffin shown here in Panel C.

Panel D shows what happened underwater after a machine seeding harvester. Removal of whole plants creating empty space that will quickly be rebuilt like a forest clear cut with species that do not provide the same logical services and the shore bird seeding forest which has had its canopy removed.

I believe there must be further guidance for NOP on the production of marine algae or seaweeds for any product, whether it is organic and derived from wild seaweed, and which addresses the problem of whether the cutting of the wild crop meets standards already established

for wild crop harvesting in 205.207, and establishes more appropriate standards for certifiers working in the marine environment so the consumer can be assured that products based on this wild seaweed harvest maintain biodiversity and the health of marine ecosystems.

Canadian researchers have stated that, because of human pressures, the protection of marine vegetative habitats should be a national priority. I look forward to further discussions and work with you on this important issue. Thank you.

MR. CHAPMAN: Thank you. Any questions from the Board?

(No audible response)

MR. CHAPMAN: Not seeing any questions, oh, sorry. Emily? I don't know if you're unmuted.

MS. OAKLEY: Thank you. So, Dr. Seeley, you have this IB or photo. Could you tell how that image might compare differently with a method of harvesting other.

MS. SEELEY: Mechanical harvesting tends to make a higher rate.

MR. CHAPMAN: Thank you. Any other questions from the Board?

(No audible response)

MR. CHAPMAN: Seeing none, Robin, thank you very much for your testimony today.

Up next Marc Ketchel, followed by Caleb Adams, and then Dave Talbert. Marc, are you on the line with us?

MR. KETCHEL: Yes, can you hear me?

MR. CHAPMAN: Yes, we can, Marc. If you can start with your name, and relevant affiliation, and proceed with comments.

MS. ARSENAULT: Okay, Tom, and Marc, can I just interrupt for a second? This is Michelle. We're getting a little background noise. So just a reminder for everyone on the line to mute yourself. Thanks.

All right, Marc, sorry to interrupt.

MR. KETCHEL: No worries, thank you. Thank you very much. I appreciate the

opportunity to address the Board.

My name is Marc Ketchel, and I am a certified handler. My company is the Organic Pure Foods Company. I've been certified in one company or another since the inception of this, so I have a little bit of background with organic certification.

And I'm currently in the chia business and have been for about ten years. I've traveled extensively all over the world and looked at every chia farm that I could find. And we have a very big problem right now in the marketplace with contamination, pesticide contamination in chia.

We do have it, obviously, with other grains but chia in particular. And that's my specialty. And I'd like to ask the Board very simply to include glyphosate, as a minimum, there could be many others but glyphosate as a minimum, as the largest and the most widely used herbicide in the world.

And it's not one of the required tests

that the certifiers, whenever there's -- I guess, my understanding is there's many triggers to when a certifier can request a certification of a producer or a processor.

And the tests that are required or that are expected, again I'm not very clear about the exact rule, but glyphosate is not on the list. And I think that's a major oversight as, again, the largest, most widely used herbicide in the world.

So that's my simple request. I think we need to tighten this up. We have -- we tested about, just for the Board's information, I mean, we tested about 100 different lots.

And when I say lots I'm talking about representative composite field samples for over 100 different fields last year. And all of them, these were certified organic producers, all of them found glyphosate contamination, every single one of them.

And my company has a zero tolerance for pesticides. We don't want --- we want zero.

I know that's not reasonable, but that is what we continue to maintain, and I continue to try to push for it.

And I've tried to create, and we are creating independent organic zones in South America where we're growing. And we're talking about very large tracts of land where there's no contaminated processes going on within miles, kilometers.

That's it, a real simple request. I think it can be done very easily. And the upstream --- the downstream costs to producers and to the market, with everybody involved, is way more than the initial testing.

(Off the record comments)

MR. KETCHEL: Yes, that's great, thank you.

MR. CHAPMAN: Thank you. I see I have a question from Scott.

MR. RICE: Yes. I have a question and a comment. Marc, when you have done your testing of the chia lots, are you doing that --- what's

your timeframe? Are you, for instance, is it done in the field? Are you doing it with products in storage or how is that --

MR. KETCHEL: No. Okay, yes, good question. The whole testing process is a bit of a --- it's a conundrum. But giving the long and short answer directly to your question is we kept that normally in the processing, in the post-harvest processing in the plant. Which -- well, in the plant, what I mean is the processing plant.

And so the process of chia, again, very briefly, is that it's harvested with a combine in the field, and then it is brought to the processing plant where it's de-hulled and cleaned up in the ---

MS. ARSENAULT: Sorry.

MR. CHAPMAN: We're getting someone who is speaking in the background.

(Off the record comments)

MS. ARSENAULT: Thanks, Tom. Hi, just a reminder to please keep yourself on mute.

We're getting background conversations. Thanks.

MR. KETCHEL: Did I get that question answered sufficiently, or should I clarify?

MR. RICE: No, I think I got it. I have just a comment on that. But, you know, while glyphosate may not be in the NOP's list of materials to test for, it is something that certifiers could certainly opt to do when there's a risk identified.

And my understanding of, you know, the challenge of the testing for glyphosate is that you've got a very short half-life. So often you may not see a crop of any kind tested for glyphosate. It's typically because of a report of spraying, and there's a fairly close reaction time when a certifier can get their soil samples.

But it's, you know, it is an option for certifiers. And I guess my question to you is are these, if it's present, something that's being shared with your certifier on a regular basis or when you find that? That's something that, it's required by the regulation and could

help, you know, your systems become a little stronger in tracking that down.

MR. KETCHEL: Okay. Well, let me again briefly, in the interest of time, tell you that, yes, we are communicating with my certifier. We have a very close relationship. I spoke to him this morning, as a matter of fact. And I'm one of the most knowledgeable people in the certification business.

And this is what we've done. We test --- we don't let any of this material come in to our company. We don't let any material come in to the country, because we do all of our testing down there. And then we test it again up here, sometimes twice up here.

So we make sure that we don't have it in our material. But that material is being sold to other buyers that are more unscrupulous. I mean, most buyers don't want to even hear about it. They don't want anybody to even talk about it. Don't ask me about pesticides. I don't test for pesticides. They don't, and they won't.

And so we've got a small handful of high quality buyers that buy large quantities that actually do test. And they test themselves. So we test down there, we test up here. Then some of my, you know, good buyers, they test themselves. So that's the way we're dealing with it.

But as far as your question about the half-life and all that, I'm sorry, but we're not finding that at all. We're testing weeks and months later and still finding material.

So I don't know, again, I'm not a scientist. But I just want to share that information. I'm giving you practical, you know, real life examples of what's actually going on.

MR. RICE: Thank you. Thank you, Marc.

MR. CHAPMAN: Marc, I have a question for you, and I don't know if you can answer it. But can you comment on the conventional practice of chia production, to do a pre-harvest desiccation spray ---

MR. KETCHEL: I would say close to 100 percent.

MR. CHAPMAN: Okay.

MR. KETCHEL: And again, some of the organic producers are doing the same thing.

MR. CHAPMAN: Yes. And I think the intention of the testing was that the USDA had originally put out, was looking for pesticides used in the production of a crop, not particularly the desiccation of a crop. But your point is well raised, in my opinion.

MR. KETCHEL: So, I mean, until --- I mean, I don't understand what you're saying. Because production includes all the waste that gets in the bag, right. Until it gets in the bag, I mean, desiccation is part of the production process.

MR. CHAPMAN: I agree, I agree with you. I think that may not have been the view when that entire list was originally sent out. So, like I said, your point is well made. And I understand what you're saying.

PARTICIPANT: I have a question here from Sue Baird.

MR. CHAPMAN: Sue?

MS. BAIRD: Yes, hi. I really commend what you're doing. I think it's important. I think, philosophically, I truly, truly support what you're doing.

I wonder though if we tested every commodity crop, if you would have any organic crop production, especially corn and some of the things that pollination happens. And what do we do? I ponder this question.

And so I commend you. But I just want to figure to out what to do. Do we just get rid of all organics? Because I would dare say that most of the organic crops are contaminated at some level. Non-GMO projects and other non-GMO testing requires testing and established policies. This is established policies. Is that where we go with this thing?

MR. KETCHEL: Should I make a brief comment?

MR. CHAPMAN: Yes, please.

MR. KETCHEL: Well, I was one of the first people to kind of deal with this way back when the law was being put together. And I've heard this argument before.

But I can tell you that it is possible for us to establish a more stringent guideline. And that's all I'm saying. I'm not saying that 100 percent zero is possible for all crops. But I think that we need to, and I think the Board is hearing this, that we do need to get a little bit more rigid in our guidelines and see if we can clamp down a little bit more.

We've got just too --- it's too much right now. There's too much room for people to take advantage of the situation. And that's what's happened.

MR. CHAPMAN: Thank you very much for your comments.

MR. KETCHEL: Thank you very much for your time, appreciate it.

MR. CHAPMAN: Up next we have Caleb

Adams, followed by Dave Talbert.

MS. ARSENAULT: We're getting some feedback. And I can't hear you anymore --

(Off the record comments)

MS. ARSENAULT: Please put your phone on mute ---

(Off the record comments)

MS. ARSENAULT: Push the button on your phone, please hit Star 6. And if you're on your computer with a headset, please make sure your speakers and mic are muted. That's usually when we get feedback.

MR. CHAPMAN: Yes, that's probably the issue with Caleb. Caleb, I just muted you in another way. I'm going to try to un-mute you. But please turn your speakers down.

MR. ADAMS: Okay, can you hear me?

MR. CHAPMAN: Yes, I can hear you.

MR. ADAMS: Perfect, great. So I am Caleb Adams. I am the VP of Organic Research and Development for CleanWorld. We are an anaerobic digester technology company.

So I tried to time myself to see how long my comments would take. And I went slightly over and hour in three minutes. So I might not be able to cover everything related to the subject.

I wanted to discuss a few of the benefits and issues related to the use of digesting and organic farming. Anaerobic digesters offer some key benefits to the organic industry. And anaerobic digesters are critical for diverting organic waste from landfills and recycling nutrients back to farms, an important aspect for organic farming.

Anaerobic digesters are also the documented carbon negative process that will help reduce the carbon footprint of the organic industry while producing renewable energy in the form of electricity, vehicle fuel, and heat.

For the organic industry to utilize digestive fertilizers, the NOP guidelines and regulations need to be reconsidered to address issues related to digesting.

Due to the time restrictions for this comment period, I'll only be able to address one example. However, I would propose a follow-up to discuss the issues in more detail.

One of the issues related to manure, that is related to manure digesters. The guidelines have put a 90 to 120-day restriction on manure digesting. That is 5006 manure processing has been adopted to manure digestate and basically states that the digestate must be pasteurized to 165 degrees amp and dried to 12 percent moisture content.

This makes sense for the solids fractions but does not take into consideration that the digestate is comprised of two fractions, a liquid and a solid fraction.

The liquid fraction can comprise up to 95 percent of the total volume of the digestate and cannot be dried to 12 percent moisture content. The pasteurization step alone is sufficient to mute pathogen reduction as you can see by multiple peer-reviewed papers.

One of the papers out of Finland, Methods to Reduce Alphagen and hypoorganisms in manure, states that the European Union regulations on objectives implemented in 2002 required digesters to pasteurize at 17 for 60 minutes. It does not require drying insufficient for pathogen reduction and food safety.

I highly recommend that this guidance be revisited and adapted to address the liquid fraction. I also hope that the Board will reach out to members of the digester industry to discuss all of the potential issues related to the digester use. Thank you.

MR. CHAPMAN: Thank you. Any questions from the Board?

(No audible response)

MR. CHAPMAN: I'm not seeing any questions at this time. Thank you very much, Caleb, for your comments.

Up next we have Dave Talbert, then Mark Lipson, and Miraj Patel. Dave Talbert, are you on the line?

MS. ARSENAULT: We haven't been able to find Dave on the line, Tom.

MR. CHAPMAN: All right. Dave, going once, going twice. Mark Lipson, are you on the line? I can see you on the web version, but I don't ---

MR. LIPSON: I am on the line.

MR. CHAPMAN: Excellent. Hi, Mark.

MR. LIPSON: I just had to find my mute button. Thank you.

MR. CHAPMAN: So after Mark is Miraj Patel, which I have not seen you on the line. And after Miraj is Bill Wolf and then Kyle Manico.

Mark, if you would us know who you are, can you start off with your name and affiliation?

MR. LIPSON: Hi, this is Mark Lipson. I'm a partner in Molino Creek Farming Collective. I'm currently the senior program and policy specialist at the Organic Farming Research Foundation in Santa Cruz, California. And I'm

the former USDA organic policy advisor.

On behalf of OFRF, I'm commenting today on the research recommendations of the Board. I'm not offering any specific input on individual items, but I just wanted to comment on the overall efficacy and evolution of the Board's function regarding research recommendations and priorities.

It is my observation that the Board's recommendations have been useful to the USDA Organic Research and Extension Initiative and the Organic Transitions Research Program and has, you know, produced some results, for example, research work on thiamine and antibiotic pest controls that have been funded by the OREI program, a direct result of the Board's and the NOP program's expressions of research needs. So there is a track record of effect for the Board, you know, continuing to make these recommendations.

Well, I'll suggest that we need a kind of comprehensive review of how this process is

functioning and how well it's able to actually affect the research portfolios and the timeliness with which scientific work gets done to meet the needs of the program and the organic sector.

I'm not very clear on how that's been happening. My understanding is that the latest recommendations continue to be sent to the research and extension officials in USDA by the program. And those have, you know, clearly showed up in the annual request for applications by the OREI program.

It would be good if we are able to do something more comprehensive, looking at all of these things that have accumulated on the list over the years, and make an assessment of what kind of work has been done, the extent to which it's meeting the needs, and how there might be alternative ways of meeting the need for more and better science.

And, you know, I just want to --- this is more of a personal observation, in 1990 when the Organic Foods Production Act was passed, what

got left on the cutting room floor was a research title to the act.

We didn't manage to get around to getting funding for organic research and establishing an organic research program within USDA. And so right about the time that --

MR. CHAPMAN: Mark, I'm going to have to cut you off there. Sorry about that.

MR. LIPSON: No, it's all right.

MR. CHAPMAN: I do have a question for you from Emily.

(Off the record comments)

MR. CHAPMAN: Emily, go ahead.

MS. OAKLEY: Thank you. Mark, I agree with your assessment. And I wanted to ask you if you had suggestions for how the NOSB might assess the work that's been done on these issues and elaborate alternative ways to get more research done on the science.

Do you think a discussion document to the broader stakeholder community to elucidate what's been done and another alternative would be

the right approach? Or do you have other suggestions?

MR. LIPSON: First suggestion is the document that was produced by Organic Farming Research Foundation last year entitled, "Taking Stock," which is a pretty comprehensive review of all the work that the Organic Research and Extension Initiative has done.

And part of that report does hold up the work that's been produced with OREI funding against the issues that have been raised by NOSB and NOP with respect to materials, and practices, and their relationship to the rule.

So that's a very good place to start. There's still a lot of material there that, you know, hasn't really been dug into by anyone.

So development of a discussion document seems like a really good idea, trying to convene a meeting with the USDA Research Extension Education Offices to discuss their approach to reviewing the same questions would also be productive. And I think the program, you

know, and the ANS administrator could initiate that.

MR. CHAPMAN: Thank you, Mark. I have a question from Ashley.

MS. SWAFFAR: Hi, Mark. Thanks for your comment. I just wanted to ask if you could send that report to Michelle, so she can forward to the rest of us.

MR. LIPSON: Absolutely.

MS. SWAFFAR: Thank you.

MR. CHAPMAN: All right. I'm not seeing any other questions. Mark, thank you for your comment.

MR. LIPSON: Thank you all very much.

MR. CHAPMAN: Up next we had Miraj Patel. We haven't found him online. So, that's line 1. Raj, are you here? And twice. Up next is Bill Wolf. Bill, are you here?

MS. ARSENAULT: Bill is on the line, Tom. He came in a little while ago. So, Bill, if you're talking, you're on mute.

MR. WOLF: Can you hear me now?

MS. ARSENAULT: Yes, we can.

MR. CHAPMAN: We can hear you now, Bill. Bill, hold on one moment. After Bill we have Kyle Manico, and then Kristen Adams. Bill, if you could start with your name and affiliation for the record?

MR. WOLF: I'm Bill Wolf, with Wolf, DiMatteo and Associates. I also have an organic farm, and am founder of Thorvin, a certified organic kelp seaweed company.

Wolf DiMatteo helps farmers, food companies, NGOs, and Governments to grow the organic industry. Since 1992 we have presented comments to the NOSB. Each in person presentation for the last 25 years was intended to encourage continuous improvement of the organic system.

For this meeting we submitted written comments on three topics that I request you read and act on regarding sodium nitrate, biodegradable mulch, and inerts. Past comments from the spring meeting are also relevant,

including specific recommendations on lowering an algae.

In this three minutes I'd like to share some strategic requests intended to improve the organic standards on the National List, these three specifics.

One, require an organic when available for the National List specifically in Section 605, not just 606. Applying commercial availability will stimulate innovation.

Two, don't make the regulations, and especially the annotations, too proscriptive. It causes unintended consequences, and makes it harder to interpret. Certifications should still be based on common sense principles.

And three, place and keep materials on the National List that will be useful, and align with the organic paradigm. The National List is a toolbox. And the goal is not to have it shrinked, but rather to have producers and handlers grow organic with integrity.

We need choices, not just one solution

for a specific problem. So, how do you decide on these materials and issues? Let's okay an organic.

I'd like you to remember the slides I've shared with you in the past about thinking like an earthworm. Imagine what produces and practices promote our biotic living system across all walks of life. Visualizing this can help sort out what should be allowed, what should be unallowed organic practice.

So, this criteria quantifies this principle, but was not intended to overly restrict it to a box organic producers and handlers need. So again, we ask don't make shrinking the National List to a box a goal.

Be open to innovation and creativity that fits the organic philosophy. And realize that the precautionary principle truly cuts both ways. We do have a responsibility to act when a better solution emerges. Your vote helps increase organic acreage and earthworms.

Finally, thank you. As a volunteer

Board you are asked to take many challenging questions. I appreciate that your efforts can make organics a powerful part of transforming agriculture. I welcome questions.

MR. CHAPMAN: Thank you, Bill. Any questions for Bill? Emily, I don't know if the question was for Bill. Do you have a question?

MS. OAKLEY: It was actually just to follow up on the last one. But that's okay. Although I do think it's interesting, and would like Bill to elaborate further on his 605 comment, in terms of looking for a certified organic unavailable. And then you can mute me.

MR. WOLF: Well, thank you for asking. We've been having that, this discussion about the idea of applying commercial availability to 605, especially to natural materials on 605, for probably decades.

And it hasn't gotten much traction. But it would solve a number of problems that occur when people come forward and actually develop a certified organic version of a

currently not organic crude ingredients that's allowed.

You may not have been around for the yeast wars. But it was pretty painful, even on the attempt to clarify yeast is a good example of that. And it's not, it shouldn't be a difficult change. And in fact, aligns with some of the international approaches to standards.

I'm tempted to say similar things about 601 and 603, but in a different context. Because, for example, the Canadian organic regs require the use of organic sources of fertilizers when it's commercially available.

So, if you can get renewal from an organic farm, and that system, we grow the system enough so that we have that capacity, then that becomes a commercial availability requirement. Thank you for the opportunity.

MR. CHAPMAN: Thank you, Bill. I also have a question from Harriet. Harriet, you're on mute. Hold on. Harriet, go ahead now.

MS. BEHAR: Hello. Okay. Bill, just

in a short sentence or two, do you support the Crop Subcommittee proposal on hydroponics? Coming --

MR. WOLF: Whoa. In one sentence? Honestly, I think that you parse the issue, and it's a challenging issue. I'm not thrilled with the idea of drilling down to the measuring of nitrogen, and creating that very challenging method of verification.

Because we already, we have enough problems with certification review just taking the grading standard as an example. I think you're, I think it's getting close. But there is some, been some really good comments made.

One more thought. And I just have to share it. I think that there is room for some form of aquaponics system, you know, in the organic paradigm. And I think we have to understand that better.

I think reaching out to someone like Dr. John Todd would be a useful tool in that conversation. Thank you. Thanks for the

opportunity.

MR. CHAPMAN: Thank you, Bill. I'm not seeing any other questions. So, we'll move on to the next commenter. And up next we have Kyle Manico. We haven't found you on the line. Kyle, are you here? Kyle going once, going twice. All right. And after Kyle we have Kristen Adams. Kristen, are you on the line?

MS. ADAMS: I am. Can you hear me?

MR. CHAPMAN: We can, Kristen. Hold on one second. After Kristen we have Damon Seawright. Damon, I haven't seen you on the line. And after Damon is Edwin Horton. And then Eric Sideman. Kristen, if you could start with your name and affiliation?

MS. ADAMS: I'm Kristen Adams, MOSA, Midwest Organic Services Association. Thank you as always for the opportunity to provide comments on both field and greenhouse container production with special documents, and the hydroponic and container growing recommendations.

MOSA currently certifies about 2,000

organic operations throughout the United States, including 349 clients certified for greenhouse production, about three clients in five for aquaponic production, and the same for hydroponic production.

Regarding the field and the greenhouse container production discussions last few minutes, we support the community having this discussion, and the development of guidance as needed.

However, our concern is the 20 percent limit of the plant's nitrogen requirements being supplied by liquid feeding, and the 50 percent limit of the nitrogen being added to the container after the crop has been planted.

Fertility applications of all types of crops should be addressed better. But at this junction the certifiers don't have for them measurement requirements in place for field grown crop production.

We feel that this proposal would put an unfair record-keeping requirement on organic

container growers, and would add considerably to the certification and inspection process.

We also have questions, of course. Will certifiers need to verify all stages in growth, utilizing different containers when those are up stages? Or will the growth, or will the measurement just be in the final container? Additionally, who determines the nitrogen requirements for the plant growth?

Regarding limiting the use of artificial light to a specific number of hours per day, plants do have a circadian rhythm, that like humans can be adjusted and disrupted by external cues, including light they receive.

At this time MOSA does not have a recommendation regarding specific numbers of hours per day that various plants should be exposed to light.

However, we support continued research in the area, and the development of requirements that are balanced and help the circadian rhythms of plants, and a practical approach for all

growers.

Regarding the spectrum and intensity of artificial light limitations, light is a nutrient to plants. And different spectrums of light are responsible for determining when plants' flower grow, when they fruit, and also affects the diurnal processes within the circadian rhythm.

And our growers need to have a light setting that's the proper type of light wavelengths for the plant life. And must encourages continued research and the continued development of proposals that uphold organic integrity, and again are practically applicable to a variety of site specific for regional growing requirements.

Regarding hydroponics and aquaponics, MOSA appreciates, as always, the work of the Crops Subcommittee. However, MOSA does not support the proposal that hydroponic and aquaponic systems be added as prohibited practices.

We support the growth of the organic industry, and the inclusion of food produced by hydroponic and aquaponic production, and alternative labeling. Thank you.

MR. CHAPMAN: Thank you. I have a couple of questions. Francis, and then Terry.

MS. ADAMS: Go ahead.

MR. THICKE: Thank you for your comments. A question. Does MOSA favor allowing 100 percent liquid feeding to be certified organic?

MS. ADAMS: In any specific production, --

MR. THICKE: Well, across the board. I mean, in any case at all do they allow, would you be in favor of allowing 100 percent liquid feeding hydroponics?

Q It's, I don't think that that's a sustainable approach for all production systems. But, you know, we don't have a super strong opinion. There are a couple of our hydroponics producers who are doing, who are

using all liquid feeding.

It doesn't make sense in all productions, though. And so, I think we always need to look at the production within the site specific conditions, and what makes sense.

MR. THICKE: Thank you.

MS. ADAMS: Yes.

MR. CHAPMAN: Harriet.

MS. BEHAR: Hi, Kristen. So, my question is, you mentioned that it would be burdensome record keeping to keep track of the nitrogen feeding.

But we were looking at, you know, the previous requirement, when sodium nitrates had that 20 percent. And I know that various certifiers worked out systems for that. I know someone who has helped train organic producers. We worked out systems for helping inspectors figure out how to do that.

And also, with the pasture regulation we have a fairly proscriptive requirement on the pastures. So, I'm just wondering, it may look

kind of burdensome now.

But do you think that MOSA could come up with some guidelines and some charts that would help people overcome that burden, and make this something that, as we do now with pasture. It's really become kind of almost second nature on organic inspection.

MS. ADAMS: Yes. Yes. Sorry if I wasn't clear. I didn't mean to say whether it's not possible. But the more records that we require be kept, of course that increases the complexity of the certification process, the timing, the expense to producers, you know.

And not saying that those tools could not be developed. Definitely we'd want some guidance from the Crop Committee, you know, ways of determining the specific nitrogen requirement for plants. And there are questions that remain to be answered. Does that answer your question, Harriet?

MS. BEHAR: Sure.

MS. ADAMS: Yes.

MR. CHAPMAN: Thank you. I also have a question from two last members. Hard to hear you. If you could speak up.

MS. BAIRD: Okay. Is that better?

MR. CHAPMAN: Yes. That's better.

MS. BAIRD: Okay. Have you seen CCOF's standards proposal?

MS. ADAMS: I am not familiar with all of the specifics of it. But am definitely more interested on, after hearing some of the comments today. So, for alternative labeling? Is that what you're --

MS. BAIRD: Yes. For the, for the container and their hydro certified piece.

MS. ADAMS: Okay. I'll take a look at it. I have become a little bit more familiar with some of their OSP requirements, and am definitely intrigued.

MS. BAIRD: Right. Have you developed your own standards that you're certifying your container and hydro, and/or aquaponic producers?

MS. ADAMS: Well, the standards that

we use are by USDA National Organic Standards. But we do have an internal organic system plan that's specific to greenhouse production, including aquaponic and hydroponic production, with robust questions about biodiversity, yes.

MS. BAIRD: Would you mind sharing those particular questions with the NOSB Board?

MS. ADAMS: I certainly can. I'll have a compliance and policy manager send those directly to you. And actually, Jackie just emailed me and said that our OSP is available online. So, I'll make sure that you have those connections too.

MS. BAIRD: Yes. Thank you.

MS. ADAMS: Okay, yes. You bet.

MR. CHAPMAN: Thank you, Sue. And I have a question from Asa.

MS. ADAMS: Okay.

MR. BRADMAN: Hi. No. Susan just asked it.

MR. CHAPMAN: Okay. All right. I think that's all of the questions I have. Thank

you, Kristen. UP next we have Damon Seawright. Damon, are you on the line?

MR. SEAWRIGHT: I am.

MR. CHAPMAN: Okay. Can you hold on one second? After Damon is Edwin Horton and then Eric Sideman. Damon you can start.

MR. SEAWRIGHT: Okay.

MR. CHAPMAN: Damon, if you could start with your name and affiliation for the record?

MR. SEAWRIGHT: Yes. I'm Damon Seawright, President of AmeriCulture, Incorporated.

MR. CHAPMAN: Great. And go ahead with your comment. If you could speak up a little bit, you're a bit light.

MR. SEAWRIGHT: Okay. My apologies. Yes. Our company has for 25 years worked on the development of an organic aquaponic production method. The method involves the modification of fish diets, so in way unrelated and unnecessary for the nutrition of fish, and exclusively for

the benefit of hydroponically grown plants.

Our aquaponic system holds a microbiome consisting of a wide variety of microorganisms, many of which play a crucial role in the breakdown of more complex molecules to those more suitable for plant nutrition.

The overall system biome goes beyond that of organic soil, in that it includes higher organisms. Bacterial nitrification not only benefits the health of fish, but converts the less suitable nitrogenous compound, ammonia, the more suitable nitrogenous compound, nitrate.

Without the contribution of the fish the plants would experience sub-optimal obligatory inorganic nutrition. And without the contribution of plants the fish would experience sub-optimal nutrient accumulation.

The impacts of the diverse soil like microbial community on root hairs was demonstrated in the study supported by a large inorganic NST hydroponic lettuce producer in Australia, and carried out by an Australian

scientists named Dr. Wilson Leonard.

The growth and quality of a variety of herbs and leafy greens were compared under inorganic hydroponic and aquaponic growing methods. As an example, the impact of aquaponics micro-biomes on plant performance, six out of seven lettuce varieties grown under aquaponic conditions outperformed those grown under inorganic hydroponic conditions, though the inorganic hydroponics was operated under ideal nutrient conditions.

Among the herbs, half of the herbs grown aquaponically exhibited higher growth rates. And nine out of ten herbs grown aquaponically were of higher quality.

And though not quantitative, yellow pest monitoring cards located among hydroponic and aquaponic canopies showed a lower level of pest infestation in the same greenhouse among the aquaponically grown plants, presumptively due to the higher health status in and from the aquaponic biome.

I would be glad to provide references at a later time. But several studies have been conducted on the microbial ecology and recirculating aquaculture systems that have demonstrated these systems are indeed extremely complex.

All plants, whether terrestrially grown or grown aquaponically or hydroponically, derive nutrients through an aqueous intermediary. The physical support provided by soil must necessarily be provided in aquaponics and hydroponics.

The microbiomes of aquaponic systems are complex, as they are in organic soil. The resulting growth, quality, and health of aquaponically grown plants are similar to those of grown organic crops.

The Organic Foods Production Act does not prohibit aquaponics or hydroponics. But they did say, and this discussion would not be taking place today. And the 50 plus organic hydroponic producers would not I think enjoy the benefit of

organic certification.

MR. CHAPMAN: Can you give me a --.

MR. SEAWRIGHT: The physical --

MR. CHAPMAN: I think I'm going to have to cut you off there.

MR. SEAWRIGHT: Okay.

MR. CHAPMAN: Any questions from the Board? And I'm not seeing any questions. Thank you for your comments. Now we'll move on to our next commenter. I have Edwin Horton, followed by Eric Sideman, and then Karen Archipley. Edwin, are you on the line? Edwin, I see you on the computer. I think I saw you. Yes. Are you possibly on mute right now?

MS. ARSENAULT: Yes. Edwin, it looks like you're using a headset, and maybe on mute. If you want to try to dial in I can, you can see the number on the screen.

MR. CHAPMAN: All right, Edwin, we're going to move on. But you get on, set up the message, and we'll come back to you. Eric Sideman, you're up next. And following Eric is

Karen Archipley, and then Colin Archipley. Eric are you --

MR. SIDEMAN: Yes, I man.

MR. CHAPMAN: Excellent, Eric. If you could start with your name and affiliation.

MR. SIDEMAN: I'm Eric Sideman. I work for the Maine Organic Farmers and Gardeners Association. I am their crop specialist. And I've worked for them for 30 years.

First of all I want to thank you all for being there. Pretty soon you on the NOSB are going to be where I am right now, feeling good about all the time I spent serving on the NOSB, and protecting the integrity of organic agriculture.

I was on the NOSB from 1997 to 2002. And I filled the scientist slot there. I was involved with organic agriculture long before that. I started working for MOFGA in 1986.

And when OFPA was first being formed MOFGA was playing a role. And there was discussion. And I have to admit I was very

nervous that the USDA is going to measure whether something was organic or not using a curve, or perhaps testing the soil for contaminants. But they didn't.

In the end they did surprisingly good job. I could even say a great job. The first thing that I note is they wrote a practice based standard. They didn't measure whether something's organic by the product itself, but by the practices that are on the farm. It's the practices that make the farm organic.

And number two, their standards were very consistent, well, this was considered organic then. And these principles are what organic was founded on.

I'm here today to support the Crops Subcommittee recommendation on hydroponic and container growing. I think they did a fabulous job of coming up with a great way of managing this very difficult situation.

Organic farming was founded on the practice of replenishing the soil. If you go

back to older history books, and the definition of what organic is, it is based around this idea of manuring the soil. Some people called it unifarming.

But for one way of looking at it, or another way of looking at it, what it really is based around is that the original farmers and mothers of organic farming recognized that farming degrades the soil. And that it's the practices of the farmer that has to replenish and build the soil.

That was the founding principle. Soil care is what makes the farm organic from the beginning. And OFPA mandates replenishing the soil. And the NOP regulation says the word must replenish the soil.

And the Crops Subcommittee recommendation is simply supporting this. One point that's bringing up a lot of comments is this idea that part of their recommendation is the idea of regulating soluble fertilizers. This precedent is actually set in the NOP regulations

of Chilean nitrate.

It's not so much that the highly soluble fertilizers are harmful. The reason they do it is because if a farmer becomes dependent on highly soluble fertilizers you can damage the primary force of fertilizer. And they're feeding the crop, and they are not meeting the requirement of OFPA or the rules, the founding principle to replenish the soil.

MR. CHAPMAN: Thank you, Eric. Any questions for Eric. I see a hand raised. Francis. Francis, if you're speaking, you're on mute. Then we'll come back to you Francis, because we're not hearing you. Asa, and then Terry.

MR. BRADMAN: Yes. I just have a few questions and comments. Well, not comments. But I just wanted to ask a few things. One, you know, you probably heard that there's, you know, people on, you know, on the exact opposite spectrum of what you're saying should be a limitation for organic.

And I totally get your perspective. So, you know, I totally get that. I've talked to people now on all sides of the issue. And there's organizations with, you know, an extremely long history in organic, you know, dating back as far as Maine Organic Farmers Association.

And I know people who date back that far who are also on both sides of this issue. And, you know, I tend to look for compromise. Maybe that's a personality trait.

But, do you see any opportunity for compromise here? And it seems like one of the ones that's been suggested is the idea of a label. So, hydroponic or aquaponic would have a label.

It could, would probably still be under the NOP. But there could be a distinguishment that would allow soil to stand alone. And perhaps, you know, I know there's talk of a regenerative agriculture label that, you know, people are working on.

And I just want to say that I think the people who are considering diversity in methods, nobody is anti-soil, and really support the kinds of things you're talking about. So anyway, just your perspective on that would be helpful.

MR. SIDEMAN: You're opening up a tremendous book. And I know no one wants me to spend the afternoon talking about this. First of all, I think the Crops Subcommittee recommendation is a compromise. What they are doing is writing standards to allow container production.

In my mind the original organic label was really about taking care of the farm. Building the soil in the farm, and protecting the farm from the degradation that happens when you grow crops. And container production wasn't even considered.

I think the Crops Subcommittee recommendation is opening the door to allow some container production to take place. The idea of

an extra label that you bring up makes me very nervous.

I think the marketplace is crowded already with labels that insinuate they're organic. I think what should be done is, labels should be very careful, and be honest and label what they are.

And the certifiers that are certifying hydroponics, I think it's because they're missing the boat. They're looking at organic meaning something that relates to clean and pure. And in some people's mind it does.

But historically speaking, and from the real foundation of organic production it relates to managing, management of the soil, not the cleanliness or the lack of contamination in the crop.

MR. CHAPMAN: Harriet.

MS. BEHAR: Hi, Eric. So, you know, we've heard a lot from people that soil based --

MR. CHAPMAN: Harriet, you're echoing.

MS. BEHAR: Oh. Is that better?

MR. CHAPMAN: Much.

MS. BEHAR: Okay. We've heard a lot that soil based, especially field grown agriculture is somewhat problematic, because our planet is not clean, it's --- actually, growing everything indoors, and kind of removing ourselves from the environment is really the future of food production. Because we are not going to have safe food otherwise.

And I'm just wondering if you see that somewhat differently. Can organic agriculture offer an alternative to that problem? Or are we just going to kind of lose our whole planet to conduct plant experiments?

MR. SIDEMAN: That's a good question. So, first of all I think we have to point out that there may be production systems that are even better than organic.

And I have, and I don't want to get into that argument. But my point would be that those production systems could really get on the bandwagon with their own label. And maybe they

could out beat organic in the marketplace.

These small scale organic farmers that began farming in the '80s worked really hard to develop their label, and make it valuable in the marketplace.

And I just don't think that somebody who thinks of themselves as better should come in and grab the established label. Let them start their own, and in their marketplace try to out compete organic, not try to usurp their label.

Getting to the point of whether organic is better for the land than conventional agriculture? I actually have this discussion a lot. There are very good conventional growers. And there are very bad organic --

MS. BEHAR: No. So --

MR. SIDEMAN: So, there's very good conventional growers, and very bad organic growers. And I think it really comes down to measuring the environmental impact of the farm, which has to do with nutrients crossing the boundary of the farm.

The organic standards that the NOP wrote try to manage the nutrients crossing the boundary of the barn, excuse me, the farm, and try to mandate through regulation that organic farmers use recycled nutrients, compost, instruments for cover cropping, and so on.

So, yes. Organic farmers can be much better at protecting the farm and the environment surrounding them, as can any farmer.

MR. CHAPMAN: Okay. We're getting a lot of feedback here from something. Francis, are you able to ask your question now?

MR. THICKE: Can you hear me?

MR. CHAPMAN: Yes, we can, Francis. We're here on the line.

MR. THICKE: Is that working now?

MR. CHAPMAN: Yes.

MR. THICKE: On and off. Okay. Thanks, Eric. This, on the USDA hydroponic task force. I got a couple of questions to ask you on, relative to some of your recommendations.

And well, first of all, your, the

question has come up that it's difficult to calculate the 20 percent nitrogen requirement, and that it may be hard to determine the nitrogen requirement for crops. If you could hit that.

And also, Tuesday the hydroponics group said that if you put enough compost in a container to provide 50 percent of the crops' need, nitrogen needs, then it's not, it won't work. Because it will be toxic, or else you'll run out.

Can you address that? Are there people doing container growing with, using very little liquid feeding?

MR. SIDEMAN: Yes. Okay. I'll address both of those. So, oh, the first question just slipped my mind again. Oh, the 20 percent nitrogen.

So, we actually work with that already, because we have growers who do use Chilean nitrate. And that is only supposed to allow 20 percent of the nitrogen requirement of the crop.

What we do in our certification program that I used to run, but don't anymore is, we use textbooks, which is "Knott's Handbook for Vegetable Crops". And we get from that, or other university published information, what the nitrogen requirement is for a particular crop.

And then it's very easily, using arithmetic to determine how much nitrogen is provided by a certain amount of Chilean. And you can come up with the maximum allowed. That does not seem like a difficult situation at all.

The second question, I have to disagree with whoever said that it can't be done. We actually certify some growers who do container production. One of our best growers has a large vegetable, mixed vegetable operation.

For their very early season tomato crop they have a large greenhouse. And because they can warm the soil quicker, and maintain all of the environmental parameters in the greenhouse, usually they do their early season tomatoes in five gallon containers.

They're using a mixture of compost, and certain feed meals, and alfalfa meal, and having an analysis of the compost that could make up any of the deficient nutrients.

And depending on how your compost is made, and the size of the bucket, and how much production you want from the crop, this is certainly possible to do.

MR. THICKE: Thank you.

MR. CHAPMAN: Thank you, Eric. I also had two quick questions for you, and then we'll have to move on. So now, I was a little confused, because you started with your comments saying that you were concerned with the FDA measuring organic as a way to determine if something was organic.

Then you're supporting it like Crops Subcommittee position that very much has to do with measuring to determine whether something is organic. And, you know, if I guess you could explore that out a little bit more to help me understand that.

MR. SIDEMAN: Sure. So, I was --

MR. CHAPMAN: And then --

MR. SIDEMAN: -- nervous about --

MR. CHAPMAN: -- ask one more on that. I have one more on that. Before you get into that. And then, on that specific 20 percent content you talked a little bit about how you see the connection to the Chilean nitrate.

Then Chilean nitrate, it was in the National List where that restriction lived. And would you not see it as being appropriate position to restrict any sort of the materials that we wanted to, to similarly use the National List as the tool to restrict so it's fair across all types of operations.

MR. SIDEMAN: Boy, I hate getting two questions at once. So, let me do the second one, because that's the one I remember.

MR. CHAPMAN: Okay.

MR. SIDEMAN: Chilean nitrate, and some other highly soluble fertilizer are actually discussed in the preamble of the rule. And it

was actually an NOSB recommendation to deal with the highly soluble fertilizers through the National List.

The NOSB and those people talking about this subject at that time recognized that if people were using these highly soluble fertilizers they would be ignoring all of the soil building things. And essentially they'd be raising crops by fertilizing the crop, rather than feeding the soil.

And so, they wanted to regulate them. But there were just two of them. And it would be easy to handle them specifically in the list. What has changed is actually there are a handful of more. And I think a more highly soluble materials that are available.

And I think it's reached the point where this should actually be handled through rulemaking, and done in the text of the rule. Can you give me the first question again, because I forgot it.

MR. CHAPMAN: It was about measuring,

and measuring --

MR. SIDEMAN: Oh, yes.

MR. CHAPMAN: Your concern with --

MR. SIDEMAN: That's right. So, I poo pooed the idea of measuring organic by sticking a probe in. I'm nervous that the USDA would look for pesticide residue, would try to figure out some way to determine whether a farmer was using chemical fertilizers by sticking a probe into the food.

And that actually is not that important. It wasn't where organic farming started. Organic farming started with the practices on the farm to replenish the soil, cover cropping, using crop residue, growing, using compost, growing legumes to get nitrogen. These are the practices that build the soil, fill the, feed the microorganisms in the soil.

And so, the Crops Subcommittee actually came up with basically the same idea, even though it is measuring. What it's measuring is the practice. It's not measuring the soil on

the farm and saying, yes, this is organic soil. Or measuring an orange and saying, yes, this is an organic orange.

Rather, what it's doing is looking at the practices on the farm, and trying to, through regulations, get the farmers to use what is best for the soil.

MR. CHAPMAN: Thank you, Eric.

MR. SIDEMAN: You're welcome.

MR. CHAPMAN: We have to move on now to other commenters. But thank you for fielding our questions.

MR. SIDEMAN: Thank you.

MR. CHAPMAN: So, up next I have Karen Archipley, followed by Colin Archipley. And after Colin is Roger Tambay. Karen, are you on the line with us?

MS. ARSENAULT: Sorry, I muted Karen. Hold on one second, Karen. I will unmute you. Or unless you just did yourself.

MS. ARCHIPLEY: What's that?

(Simultaneous speaking)

MS. ARSENAULT: All right. Thank you.

MR. CHAPMAN: And, Karen, if you could start with your name and affiliation?

MS. ARCHIPLEY: Sure. My name is Karen Archipley. And I'm the co-founder of Archi's Acres, as well as Archi's Institute for Sustainable Agrobusiness, in partnership with Cal Poly, Pomona.

And we teach beginning farmers, many just transitioning out of the military. But also civilians that wish to choose organic agrobusiness as a career.

Many of our students have gone on to start their own farms. And a large percentage have chosen containerized hydro-organic production, due to the non affordability of rural land, which is unobtainable by most, due to the limited financial resources.

And most would not be farming at all without the use of containerized production systems, due to productivity and limited space, and limited input. Many of whom also reside in

urban areas.

Science can show biological processes conducted in containers are equivalent to field production. There has been a lot of misinformation about the use of synthetic and inert inputs.

Any grower, in container or in the field, using these inputs described in the misinformation should be denied certification. And that process is already in place.

At Archi's Acres we've never used synthetic inputs, not even the ones that the NOSB has approved. No use of ozone, chlorine, or other chemicals that opponents have attempted to associate with our hydro-organic production systems.

It is our hope that you'll see through that misinformation, and instead take the time, which I'd really appreciate. I'm listening, and it seems that you are taking the time to research and understand the facts.

CCOF made a recommendation for

labeling. Let the consumer decide. We label ours as hydro-organic. And in our stores we have a large picture of our containerized production. And people love it. Because they know we're taking care of the land.

They know that our taking care of the land is giving it a rest. And that we are truly organic in our practices. We are organic consumers, my husband and I, as well as we're organic farmers. And we wouldn't feed someone something that we wouldn't eat.

So, we're in 2017. We should not be afraid of innovation. And we should not be supporting protectionism. So, hydro-organic is not new. It dates back to 600 BC. And the concern is from the growers, really a handful of growers, not from the consumers.

And so I say, let's embrace this next generation of organic growers, and not turn them off with inappropriate use of protectionism. And that's what I hear.

And I'll tell you, taking care of the

land, we say, give us your worst land. And you're looking at places like Houston, where you don't even know what chemicals are in that land.

Yet, we can send a grower over there to actually set up hydro-organic production, and be feeding that community affordably. And I just think that we really need to be mindful. So, thank you. Thank you for your time.

MR. CHAPMAN: Thank you. Any questions for Karen? Ashley.

MS. SWAFFAR: Hi, Karen. Thank you for your comments. Just one very, if you know. How many items are on your material input list for your organic system plan?

MS. ARCHIPLEY: You know what, my husband is on next. And he's the one that fills out that plan.

MS. SWAFFAR: I will, I'll ask him then. Thank you.

MS. ARCHIPLEY: Yes. He will be specific.

MR. CHAPMAN: Harriet? Harriet, I

think you're on mute. Give me a second.

MS. BEHAR: Yes.

MR. CHAPMAN: Okay.

MS. BEHAR: Karen, could the containers that you currently use, could you follow the proposal of the subcommittee to manage your containers that way?

MS. ARCHIPLEY: Are you talking about the proposal where you want us to add soil, and things like that?

MS. BEHAR: No. The proposal is managing the amount of nitrogen in the container at planting, and then the additional nitrogen added.

MS. ARCHIPLEY: You know what, that again I'm going to let my husband answer that. Because I can't give you a specific. I can tell you that we measure all day. I mean, we are always watching what, how our system is reacting.

And I know that we have a lot of biological, like we have a lot of frogs in our system. And those are both in our NFT channels,

as well as you'll see them around the farm. And so, to me it's a good sign. We have a lot of biodiversity. But I'll let Colin answer the question specifically about measurements.

MS. BEHAR: Okay. So, yes. It relates back to the proposal that we are going to discuss and vote upon in general.

MS. ARCHIPLEY: Right.

MS. BEHAR: Okay.

MS. ARCHIPLEY: Appreciate that.

MR. CHAPMAN: Steve.

MR. ELA: I just want to follow-up. Early on you talked, you said science. There's, I take the comment to paraphrase, and I may not get it quite right. Science has demonstrated the equivalent biodiversity of hydroponic and soil systems. Have you submitted those science --

MS. ARCHIPLEY: You know what, I know they've been submitted. And several other people, I've heard them also referenced. But I can have that sent to you. No problem.

MR. ELA: Yes. It's something to be

sure. I mean, part of it is, I think it's been a broad brush, where we've seen, I mean, there are reports of biological activities. But it's often hard to find that those, you now, equivalent studies. So, I think anything you can submit would be appreciated.

MS. ARCHIPLEY: More than happy to. Not a problem.

MR. CHAPMAN: Thank you, Karen. Well, that looks like all the questions I have. And I will move on to Colin. After Colin we're going to jump back up to Edwin, who we believe is now on the line. And then follow on with Roger Tambay. All right. Colin, if you could start with your name and affiliation for the record?

MR. ARCHIPLEY: My name's Colin Archipley with, co-founder and grower at Archi's Acres.

MR. CHAPMAN: Go ahead, Colin.

MR. ARCHIPLEY: Okay. Thank you. Obviously I'm a proponent of containerized module certification. And as opposed to telling you a

lot of stuff you already heard today, there's been a lot of people on saying all the great things on it, I just want to address a few things, particularly before the commenter, a few calls ago said.

And that, starting with OFPA. And the commenter is correct in regards to OFPA addressing soil specifically. But any legal advisor would also clearly state that OFPA wasn't meant to be absolute.

It clearly states, and I'm paraphrasing here, that if certain application of OFPA don't apply to a particular business or farm, then that doesn't preclude them becoming certified organic.

That's why we have soap manufacturers who have nothing to do with soil becoming certified organic. Because OFPA is not absolute.

Secondly, the idea that these types of systems popped up out of nowhere in the last few years, and is something that we just have to address recently is hilarious.

And the idea of it is, this has brought, this talk has been done on four separate occasions, never more in depth after 2010, but before the 2010 recommendation it was brought up three separate times.

And we've had hydroponic growers certified for 20 plus years. Our farm has been certified organic now for over ten years.

There's also a belief that the vast majority of hydroponic and aquaponic growers are large scale, and large corporate agrobusiness type operations. The vast majority of hydro-organic aquaponic growers are mom and pop small business who are doing this because they believe they're doing the right thing, and doing it because the consumer's demand they do it.

They're doing it because they're out of water, natural resources, doing it because of labor, and all the other reasons. So, just keep in mind that we're not talking about a select few tomato growers under attack.

And I know there's the thing about the

organic industry. And when people become successful all turn their backs. But keep in mind, if you ban certified organics in these type of systems it's going to be small scale growers who will be impacted the most.

There's also been a discussion about energy use. And we looked at a greenhouse with hydroponics and see water pumps. And the assumption is there's a lot of energy being used.

But if you're comparing energy use on the acre by acre basis, and you're not actually looking at how much energy it takes to produce a plant. And you could actually look at these productions.

And you break down carbon input to produce one unit, a head of lettuce, whatever that is, you're going to realize that hydroponic systems and aquaponic systems are far more energy independent, as well as water independent, and other resources, than the vast majority of standard organic farms.

Lastly, there was a good discussion

about the use of mycorrhiza and that, and hydroponic systems. Karen just mentioned that she could send you some of those studies. So, I'll leave it at that.

I do have some concepts about these relationships, about this fusion, if you will, between the plant, and so forth. I know that's the alarm.

I would just like to point out there has been no study, no study that said the absence of the soil particle will preclude the processes, these organisms from surviving. In fact, the opposite is true.

MR. CHAPMAN: Thank --

MR. ARCHIPLEY: Thank you.

MR. CHAPMAN: Thank you, Colin. I have a question from Ashley.

MS. SWAFFAR: Hi, Colin. Can you answer my earlier question? Do you know how many items are on your material input list?

MR. ARCHIPLEY: Yes. You're looking for a utility. I don't --- a tool, or all of the

above?

MS. SWAFFAR: Yes. Like how many items do you have on your material input list, like in your organic system plan?

MR. ARCHIPLEY: Oh, okay. That includes like media and pest control, and our ingredients for our organic tea, and stuff like that. So, I'd probably say we have about two dozen items on there, primarily because we don't remove items once we quit using them.

So, but on a day to day basis, and on an annual basis we have seven fertility inputs we use, a few other pest control inputs, and two or three different types of media we may use in a given year.

MS. SWAFFAR: Thank you.

MR. CHAPMAN: Harriet.

MS. BEHAR: Yes. So, the Crops Subcommittee has a proposal that we'll be reviewing and voting upon, which ties the definition of hydroponics to the amount of nitrogen in the container, and then additional

nitrogen added.

I'm wondering if your containers can currently, or could in the future meet that requirement, and therefore, then be not considered hydroponics?

MR. ARCHIPLEY: It's hard for me to answer that question, not having the ability to measure how much solubilized nitrogen, for instance, is in our system at any given time.

What I can tell you is we've had studies done, or lab tests done about the availability of solubilizing nitrogen, specifically, in our inputs. And those studies come back --- as you add them to our production system the availability of solubilized nitrogen is extremely low. Meaning there is nitrogen in the product that's insoluble, and it has to be released through biological digestion. And we know that occurs because the output of the production system is greens to greens, right.

So, we know nitrogen is being, insoluble nitrogen is being broken down and

converted, and so forth. And the studies show that before those inputs are added to these production systems the levels of insoluble nitrogen is much higher than insoluble, or solubilized nitrogen.

Furthermore, I think there needs to be a clarification between liquid nutrients and solubilized nitrogen. They're two different things.

You can add a fish emulsion that's high in insoluble nitrogen, that's liquid and very low soluble nitrogen. So its breakdown, it's conversion -- for example, is extremely similar, although it looks like it's in liquid form.

MR. CHAPMAN: Francis.

MR. THICKE: Yes. Could you tell me, a question I've been asking other people, what you use for a medium or substrate? And what percent of the nitrogen would you say comes from a liquid feed, soluble or insoluble?

MR. ARCHIPLEY: Well again, the lab

tests usually show that we have extremely low solubilized nitrogen adding it to the production system, and it's extremely low. Less than one percent of what we're applying is solubilized nitrogen.

The type of media that we use, we use a generic compost based, peat moss based potting media that you find in any type of nursery crop. We also use various forms or volcanic rock, vermiculite.

In our specific production system we use, we can utilize a wide variety of media. Some, again, compost, peat moss are required to -- they're off the ground. We just go with what seems to be fine, that works better, and what can be more available and cost effective.

MR. THICKE: What I asked though first was, what percent of the nitrogen comes in liquid form, whether it's soluble or mixed in a suspension, for a cup of single liquid application?

MR. ARCHIPLEY: Oh, I'm sorry. So,

when we start the plug at zero, we add zero liquid form of nutrients. Then we transplant the plug after about three weeks into the system. With a majority, if not all, well, the majority of fertility is coming through the irrigation system.

MR. THICKE: Okay, thank you.

MR. CHAPMAN: Thank you, Colin. I'm not seeing any other questions at this time. And I appreciate it, Colin.

MR. ARCHIPLEY: All right. Thank you. Appreciate it.

MR. CHAPMAN: Up next we have Edwin Horton. Edwin, are you on the line now?

MR. HORTON: Yes. Can you guys hear me?

MR. CHAPMAN: Yes, I can Edwin. And hold on one second. After that one we have Roger Tambay, and then Jaydee Hanson. Edwin, you can start with your name and affiliation.

MR. HORTON: Thank you. My name is Edwin Horton, and I'm a ranch manager with Reiter

Brothers. And I would like to address the current Crops Subcommittee proposal on container production.

I'm addressing this proposal, because I have many questions and concerns about it. Honestly, I have more questions than answers on how this would actually affect my business.

I manage a 200 acre organic container operation of blackberries and blueberries. This proposal would require me to apply 50 percent of the total year's nitrogen requirement by the first planting day.

This is excessive and wasteful, and likely harmful to the establishment of a young plant. This is like the same thing as taking an infant to an all you can eat buffet. It is an excessive amount of food for a baby, who will probably waste it all, and/or get very sick if you force feed it.

So, if the plant survives establishment, then I can apply an additional 20 percent through the drip system, and top dress

the remaining 30 percent. And this is only in year one. I haven't even begun to harvest the crop yet.

And during fruit development it is the majority of the plant's nutrient uptake. So, why would the Board require me to be so wasteful with early nitrogen over applications, if nitrogen can be so harmful to the environment and to human health?

As a new young farmer this is very meaningful to me. And I would like to produce high quality organic food, while decreasing the harm to the environment.

My fertility program usually consists of solid fertility mixed in at the planting, and perhaps less than ten percent of the plant's needs, because of the small requirement of the young plant.

Then I apply liquid fertilizer, organic matter, microbes, and compost through the drip system. We will also apply a top dressing application at critical times for plant nutrient

updates.

Top dressing applications in the pots are actually particularly costly, because there's no mechanical operation for this right now. Not to mention, the cost of labor is significantly increasing in California. And our availability of labor is significantly decreasing due to recent legislations.

For my business to be viable I need to be able to keep the same plants for at least six years. This proposal does not really take into account how perennial plant growers will be able to manager their nutrition after the first year. The fertility in these years are most critical to me as a perennial plant grower to grow, build, and establish healthy plants.

In particular, this section of the proposal needs to be worked on more. It said the requirements of perennials is recalculated on an annual basis. So, does this mean that I have to top dress 80 percent of the nitrogen? Or repot the plants every year afterwards?

This would greatly increase the cost and complexity of the operation, and likely exclude most perennial operations from this organic requirement. Also, how would these be regulated? Does the burden of all this complex records fall on the grower?

I urge the Board to vote no on this proposal, and send it back to the Subcommittee to allow for more focus on these critical components of the proposal. I would like to thank the Board for their service. And I am happy to answer any questions you might have for me.

MR. CHAPMAN: Thank you. I have a question from Francis, and then Ashley, maybe Ashley. Francis, go ahead.

MR. THICKE: Okay. Thanks for your comments. I think that as a member of the Crops Subcommittee I should answer a question that several hydroponic growers have asked. And that is, why would we require the nitrogen requirement we have in the proposal?

And it's because we are looking for a

container system that will work like a soil. That will either be soil, or a compost based system that will work like a soil, as Eric Sideman said, that will feed the plants.

And so, you have a system that can provide nitrogens not as soluble, or various highly labile nitrogen forms, but as a more mix of different nitrogen forms that are present in soils, and can over time provide the nutrition for a plant.

So, I can understand that when you have a hydroponic system it's not workable. Because you can't apply a soil system concept to a hydroponic system. So, we just need to be clear. So, I'm sorry I don't have a question. But that's what I wanted to say.

MR. HORTON: Yes. I have a question to that. What kind of crops would they be considered as? Because as we know for fruiting crops, crops such as berries, they go through different nitrogen requirements throughout various stages of their lives, especially

perennial crops. Could you touch on that?

MR. THICKE: Yes. There actually are tables. In this proposal we talked about some of those things, where you can, as Eric Sideman mentioned, there's not a handbook of mutual requirements for plants.

So, a lot of these recommendations are maybe like five pounds of nitrogen per ton of yield, something like that. These are guidelines that come from university research and such.

So, those guidelines are out there. And they're pretty straightforward for what is a requirement, nitrogen requirement for plants.

MR. CHAPMAN: Thank you, Francis. I have a question from Steve.

MR. ELA: I'm curious. So, in the soil system growing the same plants you're growing, that nitrogen level is manipulated, you know. We as growers manipulate them to provide the optimal nitrogen, you know, at the various times for our plants.

So, what was, I mean, I heard you say

labor, because in containers you can't use a mechanical applicator. And honestly, I mean, I work in a system that requires tons of labor as well. And I get that stress. But OFPA doesn't put labor in our standards. You know, it looks more at other things.

So, what are the barriers to provide, to manipulating the, you know, other than labor, your soil system, or your media system in your containers, you know, via physical nitrogen inputs versus liquid ones?

MR. HORTON: Can you restate the question? I'm sorry. I'm a little confused.

MR. ELA: Well, I guess in the soil system if we grow the same crops that you're growing, that nitrogen need for the crop, you know, as you said, goes up and down depending on the year and the stage of growth.

In that soil system we moderate that nitrogen to meet that crop need. And what I, and I'm not clear of why, what the barrier is to you to do the same thing. I heard labor. But

really, we can't consider labor that, it's not part of the OFPA rules.

What are the other barriers for you to manipulate your nitrogen level in your plants with a non liquid material, versus a liquid material that, other than labor?

MR. HORTON: Well, we grow in a very similar way as soil growers do. And to my knowledge soil growers are actually not required to apply 50 percent of their nitrogen requirement at planting. Also, with soil you guys have a lot more surface area, and/or buffer zone to deal with. Does that answer your question?

MR. ELA: Yes. I mean, like, you've heard from growers that do use a system where they're manipulated without liquid feeding. And we've heard from many growers that say it's impossible to do that. And so, I'm trying to parse out what the differences are, what the barriers are.

MR. HORTON: Well, I mean, if I were to grow a soil, personally, I would not need the

50 percent. And that would have definitely provided help throughout the year.

But, you know, we're talking to be quite specific on, you know, soil type, environment, plant type, the plant year, the plant structure. You know, there's very many things that go into it.

But I just don't see using 50 percent at planting applicable. And therefore, actually detrimental to the plants then, you know, doing this in a soil would also just accumulate a lot of nitrates, which is just incredibly bad for the environment. And personally I thought we were trying to steer away from that as organic growers.

MR. ELA: And we've had some comments from people in the past about using different compost mix, with more, you know, where the nitrogen release is much, much longer term. Would that be a possibility?

MR. HORTON: Compost definitely helps. Obviously they assist in some microbes. I mean,

no matter which way that you give the plant nitrogen it's got to go through the nitrification. And the plant's got to actually break down those enzymes to make it acceptable for it.

So, I will say, yes, the additional compost would definitely help aid in the uptake of nitrogen. I don't know if it's needed, per se. But it's definitely aiding.

MR. CHAPMAN: Edwin, you dropped off there. Are you still there?

MR. HORTON: Can you hear me now?

MR. CHAPMAN: Yes. It was at the very end.

MR. HORTON: Oh, I'm sorry. No. I would just say that compost does help aid in starting the breakdown of the nitrification process. That plants need to uptake nitrogen.

Do I think it's necessary? Not per se. But I think there's natural organic composts that we don't actually apply in soil and in containers year round.

MR. CHAPMAN: All right. Thank you for your time. And thank the Board for the questions. We're going to have to move on now. We're about ten minutes behind.

Our next speaker is Roger Tambay, followed by Jaydee Hanson, and then Mark Ellis. Roger, are you on the line with us?

MR. TAMBAY: Yes, I am.

MR. CHAPMAN: Go ahead, Roger. Start with your name and affiliation.

MR. TAMBAY: My name is Roger Tambay. And thank you for the opportunity to present the mulch film manufacturers' point of view at this forum. I will deal with Conditions 2 and 3 of Memo 15-1, mulch film testing compliance for composting and soil biodegradability.

Film Organic creates recipes and sells soil biodegradable mulch films. It's all we do. Mulches are creep crop region soil type specific. And sometimes they are grower specific. Slide.

Soil biodegradable mulch film benefits growers. It's a weed control tool. It can free

up labor, and can help reduce costs of produce. Slide.

Film Organic's mission is to replace polyethylene based mulch film with soil biodegradable mulch film. Slide.

Question. Is it possible to make a soil biodegradable mulch film with bioplastics that are made only from modern carbon, not the issue of genetic engineering, contain zero percent petroleum bioplastic, meets composting and soil biodegradation standards at a reasonable cost as compared to alternatives? Slide. The answer is yes. This photo was taken 60 days after the mulch film was installed. Slide.

There are some conditions for a successful soil biodegradable mulch film. It must meet regulatory requirements. It must perform technically. And it's got to be reasonably priced. Slide.

The problem is that according to Conditions 1 and 2 of Memo 15-1, the mulch film must meet ASTM D6400 for compostability, at a

cost of $10,000 dollars. And in requirement 2 the film must demonstrate at least nine percent biodegradation, at a cost of $25,000 dollars. Slide.

We use biopolymers, or biopolymer mixtures, and only perform physical blending. If these comply, the mulch film complies. Slide.

So what? Based on our experience we'll need about ten recipe thickness combinations, costing potentially hundreds of thousands of dollars for compliance testing. Here is why. Slide.

Grower collaboration is required to get the right performance. Soil type, short crops versus long crops, grower practices, location, Washington State versus Florida, growers' cost expectations. Slide.

Each of these recipe thickness combinations require testing at a cost of $35,000 dollars each. The costs can add up to a lot of money. Slide.

Testing mulch film stifles innovation.

Slide. Here is one suggestion. All biopolymers or biopolymer mixtures must comply with ASMD D6400. Slide. And ASTM D5988. Slide.

You can encourage innovation in our industry by allowing us to use approved biopolymers and biopolymer mixtures. We can focus on creating film the growers will appreciate.

That helps us avoid expensive compliance testing, and in the end helps growers reap the benefits associated with soil biodegradable films. And makes organic farming more accessible. Thank you.

MR. CHAPMAN: Thank you. Even though we're running behind let's try to keep questions and answers specific. I have two questions. First one's from Harriet. I'll take questions. First one's from Harriet.

MS. BEHAR: Hi. Is your biopolymer like corn based? Or what is the base of that polymer? Because you said it's not petroleum based.

MR. TAMBAY: Right. It's not petroleum based. It's different sources of sugar, whether they be from corn or other sugar sources.

MS. BEHAR: Thank you.

MR. CHAPMAN: Emily.

MS. OAKLEY: Oh, that was for the previous speaker. I don't have a question for this speaker. Thank you.

MR. CHAPMAN: Thank you. Asa.

MR. BRADMAN: I'd like to get more information on this. And again, just verify this is 100 percent, like you said, modern carbon. And then also, you talked about 90 percent biodegradable, and then a percentage that was microcrystalline. Could you explain that a little bit more, those two sectors, those two components?

MR. TAMBAY: There are two ASTM tests that are listed in the memo. The first one is D6400. It requires for composting in a composting environment. And D5988 requires for

biodegradation.

And the standard requires 90 percent biodegradation as compared to cellulose. So, those are listed in the memo. And the ASTM methods are the ones that are prescribed therein. That's why, I was merely restating what those are.

MR. BRADMAN: Right. But wouldn't ultimately the cellulose break down as well?

MR. TAMBAY: Yes. But I think the issue is not, it is, cellulose is the reference. And so, the test requires for the material to break down at least 90 percent as well as cellulose.

MR. BRADMAN: I think --

MR. TAMBAY: Right.

MR. BRADMAN: I think I got it. I'm certainly interested in getting more information on it.

MR. TAMBAY: Okay.

MR. CHAPMAN: Yes, Mark. He says that he can provide that to you and Michelle.

MR. TAMBAY: Okay.

MR. BRADMAN: And one last question I'd also like to get is the different weights per meter of film. You can, you have different materials or thicknesses. If you could give us, give me like the range for different products, that would be great. So, it would be the, is it grams or milligrams per square meter in mass?

MR. TAMBAY: Sure. I'd be happy to. But it also depends on, there's several factors that will affect the thickness and the recipe. Because it's not only the thickness. And I've listed some of those, mainly the location, the soil type, how fast we want the film to degrade, or how long do we want it to last. And then there could be some finer differences as well, in terms of how certain growers might cultivate, versus others.

MR. BRADMAN: Right.

MR. TAMBAY: And all of those make differences in terms of how we end up collaborating with nature to have our films last

just the right amount of time.

MR. BRADMAN: All right. Well, again, if I can get --

MR. CHAPMAN: All right. I think he broke up a little bit. Asa?

MR. BRADMAN: I'm done. Thanks.

MR. CHAPMAN: You broke up there. We didn't hear you a little bit.

MR. BRADMAN: Which is, I just wanted to verify that I'm really interested in getting the weight on an area basis --

MR. TAMBAY: Okay.

MR. BRADMAN: -- for different materials. That would be great.

MR. TAMBAY: Yes. We'll supply them.

MR. BRADMAN: Thanks.

MR. TAMBAY: You're welcome. Thank you.

MR. CHAPMAN: Thank you, Roger. Up next I have Jaydee Hanson, followed by Mark Ellis and Aviva Glaser. Jaydee, are you on the line with us?

MR. HANSON: I am on line. Can you hear me?

MR. CHAPMAN: Yes, we can. You can start with your name and affiliation.

MR. HANSON: I'm Jaydee Hanson, Senior Policy Analyst for Emerging Technology at the Center for Food Safety. And I'm in their Washington, DC office. And you heard my colleague and one of our consulting scientists, Marti Crouch earlier.

I'm speaking on three techniques. I'll just go right into them. Intergenesis is a technique that involves the genetic engineering of a recipient plant with genes from crossable species.

It is a plant that is genetically engineered with various plant DNA, all of which come from varieties of the plant, or sexually compatible relatives, that are combined into the genetic material, and inserted into the genome.

Intergenesis best results in a novel gene, and carries risks associated with other

genetic engineering methods, and should be an excluded method itself. We already have some fruits and potatoes coming to the market using this method.

Agro infiltration is a method of introducing nucleic acids into plant tissues using agro bacterium vectors in order to produce specific foreign proteins within the plants, such as pharmaceuticals.

In agro infiltration in vitro nucleic acids are introduced to plant leaves to be infiltrated into them. Thus, agro infiltration is clearly an in vitro nucleic acid technique and falls under the definition of modern biotechnology, and should be excluded.

Transposons are naturally occurring mobile genetic elements. And they should be excluded when they're used to genetically engineer plants and animals.

And they are discrete bits of DNA, with the ability to change their condition within the genome, using a cut and paste mechanism

called transposition.

And thus, can be engineered as vectors, removing other pieces of DNA into the recipient organisms, and for causing insertional mutations. Using transposons vector or mutagens clearly means they are excluded methods.

As previously commented by CFS, transposons by themselves are not breeding or a biotechnology method, though they may be used as a genetic engineering techniques. As such, we recommend that NOSB amend the term in the terminology chart to use of transposons in genetic engineering. Okay. Well, I'll stop there. Thank you.

MR. CHAPMAN: Okay, are there any -- I have a question from Harriet. And again, we're behind schedule. So, I have a reminder to keep it brief.

MR. HANSON: Sure.

MR. CHAPMAN: Harriet.

MS. BEHAR: That was for the previous. But I want to say thank you to Jaydee for all

your help.

MR. HANSON: Well, thanks. And thank you for your input in these discussions and others. I'm pretty sure there's a lot. Thank you.

MR. CHAPMAN: Thank you. All right. Up next we have Mark Ellis, followed by Aviva Glaser, and then Dan Martens after that. Mark are you with us?

MR. ELLIS: Yes. Can you hear me?

MR. CHAPMAN: Yes, we can. And, Mark, if you could start with your name and affiliation, and then go into your comment.

MR. ELLIS: Sure. Thanks. Good afternoon. I'm Mark Ellis, and I serve as Executive Director of the International Diatomite Producers Association, or IDPA. IDPA is an industrial trade association that represents producers of diatomaceous earth products.

Diatomaceous earth is a sedimentary, non-metallic mineral composed of the skeletal remains of plant based plankton called diatoms.

Diatomaceous earth is predominantly amorphous silica.

I speak to you today in support of the recommendation of the NOSB Handling Subcommittee to retain diatomaceous earth on a national list on allowed and prohibited substances.

Diatomaceous earth has been considered generally recognized as safe since 1963 by the U.S. Food and Drug Administration for use as a filter aid.

In 1979 the Food and Drug Administration Select Committee on grass substances concluded that there was no evidence that demonstrated or suggested diatomaceous earth presented a hazard to the public when used as a filter aid.

In 1983 the Food and Drug Administration again concluded that diatomaceous earth is generally recognized as safe for use as a filter aid. In 2002 the Food and Drug Administration again concluded that diatomaceous earth remains generally recognized as safe.

The NOSB reviewed diatomaceous earth in 2005, 2010, and 2015, and recommended re-listing each time.

The diatomaceous earth produced by the three major diatomaceous earth producers in the United States complies with U.S. Pharmacopeia Food Chemicals Codes purity requirements for diatomaceous earth. This monograph includes heavy metals requirements for both lead and arsenic.

Diatomaceous earth continues to be used as a filter media in the majority of brewery, winery, and juice companies for both organic and non organic products. It also is used by corn and oil seed milling companies for the production of sweeteners and oils. And it is used as the filter aid of choice by many other food and pharmaceutical industries.

Diatomaceous earth is used to improve the efficiency of solid/liquid separation processes, e.g. the removal of yeast from beer or wine. Diatomaceous earth does not exist within

the final organic product, and is classified as a processing aid, and not as an ingredient.

In closing, the International Diatomite Producers Association supports the NOSB Subcommittee on Handling's recommendation to retain diatomaceous earth on the National Organic Program List of Allowable Substances, and urges the National Organic Standards Board to adopt its Subcommittee's recommendation. Thank you for your consideration of these comments.

MR. CHAPMAN: Thank you. Any questions? Seeing none, up next is Aviva Glaser, followed by Dan Martens, then Julene Koslowski. Aviva Glaser, I didn't see you. We have not been able to find you. Aviva going once, then twice. Seeing none, we're going to move on to Dan Martens. Dan, are you on the line?

MS. ARSENAULT: I see Dan on the line. And this is his PowerPoint presentation. So, Dan, if you're talking we can't hear you.

PARTICIPANT: Good afternoon.

MS. ARSENAULT: Dan, is that you? No.

MR. CHAPMAN: Dan, are you there? I need someone to unmute him. Dan, one more time. Are you there? Dan, we're not hearing you if you are there.

PARTICIPANT: I'm on a headset, he said.

MS. ARSENAULT: He's on a headset. All right. So, we can't hear you. So, are you able to dial in on the phone? Do you want to chat that into me? I'll give you the number.

PARTICIPANT: He will call.

MS. ARSENAULT: Okay, great. You have the number? He must.

PARTICIPANT: I can send that.

MR. CHAPMAN: All right. While we wait for Dan to call in, I want to check, is Julene Koslowski here? We are moving back to the list.

Is Jennifer Davis, or Yemi Amu, or David Talbert, or Miraj Patel here? Dan Martens is the one last commenter. Hold on while we wait for Dan to call in.

PARTICIPANT: Tom, tell us a joke, or sing us a tune while we wait.

MR. MARTENS: Hello.

MR. CHAPMAN: Dan?

MR. MARTENS: Yes. I apologize for the technical glitch. I thought I could just come in on headset. And I'm not the last guy, so I really feel embarrassed. Sorry.

MR. CHAPMAN: All right, Dan. If you could start with your name and affiliation for the record?

MR. MARTENS: Yes. Dan Martens. I'm with Novamont North America. And thank you very much. And thank you for accommodating my slides. Next slide, please.

Compostable mulch films provide holistic benefits to farmers, including carbon reduction, farming practice efficiency, and the elimination of polyethylene plastics disposal.

The film in my comment have 15 years of EU in field experience. And all certified compostable to ASTM6400 standards, with

additional soil biodegration certification.

These are not experimental mulch films. They have been commercially available in the U.S. for ten years. And in 15 years of continual annual application there has been no instances of soil contamination from any component of the film, or the film itself.

Here are some cases where certified compostable mulch films have become new tools for farmers, increasing efficiency, while decreasing environmental impact. Next slide, please.

Tomatoes. Plastic mulch films cannot be used with machine harvesting, since plastic films jam machinery. However, compostable films exit through the back of the machinery like green plant matter.

Using the mulch film increases harvest yields by 25 percent. And the mulch films are a new tool that improves both tomatoes and harvesting. Next slide, please. Next slide, please. Next slide, please.

For asparagus compostable mulch film

has the same weight control as plastic film, but it's much thinner. Therefore, the plant can break through the film. And the compostable film requires less material and energy to produce. Thus, a lower carbon footprint versus plastic. Next slide, please. Next slide, please. Next slide, please.

For rice. When using compostable mulch film less water is required. This practice is only two years old. And the machine pictured has only, was only invented last year. Again, better crops and decreased total environmental impact. Next slide, please. Next slide, please. Next slide, please.

I ask NOSB to vote no on the removal of compostable mulch films from its National List. Please consider compostable mulch films to be new tools to help small farmers. Farmers who have tried compostable films want them to be okayed for organic.

These products reduce labor, cut costs, produce stronger crops, and eliminate the

burning or landfilling of disposable plastic. Please give these products the innovative excitement that they have earned. Do not look at them as a sleight of hand to put oil in the soil. That issue's not happening.

And you may wonder how this product differs from petrochemical fertilizers that attach to plant roots. But for compostable mulch films please visualize this. That the plants' roots are not absorbing the film.

The film is transformed by soil, microorganisms. They eat it, they poop it, then they die. Organic matter, carbon dioxide to water. It's what is created, and the plants like it. Thank you.

MR. CHAPMAN: Thank you, Dan. Any questions from the Board? Harriet, then Asa.

MS. BEHAR: So, there are petroleum based fertilizers that plants also like. How is the breakdown of your product different from those?

MR. MARTENS: Well, I can't speak too

much for exactly that. However, I know that basically, I think what I hear a lot is our material being called petroleum based materials, and being absorbed by the plants, or being contamination of the soil. And that's not happening.

So, I'll defer to how they're the same. But they're, certainly are not that. Does that make sense?

MS. BEHAR: Okay.

MR. CHAPMAN: Asa.

MR. BRADMAN: I have a couple of questions. And Harriet --

MR. MARTENS: Sure.

MR. BRADMAN: -- I'm just going to get clarification on what you mean by petroleum based fertilizers. Because I think we're talking there about fossil fuel based fertilizers that are sources of, you know, nitrogen, and other mineral nutrients, versus, I think what you're saying here with the compostable film is that it's a source of carbon. And that it's a, it's not a

fertilizer.

MR. MARTENS: Correct.

MR. BRADMAN: And I just want to clarify that. And also, let us know what proportion of the film is, you know, old carbon versus new carbon? In other words, how much is fossil fuel based?

And just to clarify, it seems like what you're doing is manufacturing the polymer so it's essentially munchable by bugs. Right?

MR. MARTENS: Yes.

MR. BRADMAN: Mainly bacteria. And is there any proportion that's not munchable by bugs? And then finally, if you could also send me, I'm interested in this question of what is the mass of the mulch, you know, on a, say on a square meter basis, milligrams or grams per square meter. Just to understand the amount of material that's being incorporated into the soil.

MR. MARTENS: Yes. Pretty much on the first question, I think you're asking what's the renewable content. I can speak for my company.

But just in general, it can vary.

All of the, for example, probably state of the art is probably about 40 percent from plant based material. And that's due to green chemicals, chemicals that probably didn't exist in green, from plant based even five years ago. And I can go into some of those if you'd like.

But there's been a, pretty much a nice, I guess new industry, the green chemistry, and new advancements. Some of the chemicals that were compostable mulch films in the past that could not be made from plant based materials now can be.

So, I think pretty much, I'm going to defer to, like France, where they're requiring home compostable material for replacing all the plastic bags. Plus renewable content. There they started with 20 percent renewable content. Then this last year it was 30, and now 40.

So, I would say based on that French law 40 percent is kind of the current. And I

would say probably what's doable today by major manufacturers is probably about 50 percent.

As far as all the carbon, all the carbon is carbon that should be, that is ingestible, and that should be converted. Did I answer your question?

MR. BRADMAN: Yes. Thank you.

MR. MARTENS: And for follow-ups, I'm happy to supply follow-ups. I'm sorry this is a very quick -- All these are case studies on their own. But in this timeframe I wanted to just give you, make you aware of them.

MR. BRADMAN: Right. And there was just a speaker who spoke just before you that claimed to have 100 percent biological-based film. And are you aware of any companies, other companies that are making similar products?

MR. MARTENS: I'm actually familiar with those fellows. We have not, in the current technology we're not aware of that. I mean, I do agree with 100 percent that all mulch films finished product must be tested.

I think this was a safe thing that must be done, otherwise you open, you can open the door to a lot of misuse. We're a major innovator/leader in this industry. We haven't heard of this.

You can make mulch films 100 percent. But you've also got to remember they have to perform in the field, they have to meet testing. And you can do this with PLAs, you can do it with a lot of polyesters. But there's a lot of other requirements that make them usable and beneficial.

So, I don't know. And I've heard of this product for a couple of years. I just have never seen it. I've never actually seen it. So, I can't comment, other than I'm skeptical until the science is done on it.

MR. CHAPMAN: Okay. We're going to have to stop we're five minutes over. Thank you very much for your comment.

MR. MARTENS: Okay.

MR. CHAPMAN: All members of the

public, thank you so much for your time, thoughtful comments, and answering our questions. I would like to thank Members of the Board for your careful attention and engagement during this time, and the National Organic Program for helping to support this activity, and providing all the infrastructure to make it happen seamlessly.

So, thank you everybody. For folks who will be in Florida for our meeting, I look forward to seeing you all on Tuesday of next week. And have a great weekend. Thank you.

MS. ARSENAULT: Thank you, everyone. Thank you, Tom. Great job. Thanks, everybody.

(Whereupon, the above-entitled matter went off the record at 4:07 p.m.)

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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Public Comment Webinar

Before: USDA/NOSB

Date: 10-26-17

Place: webinar

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate record of the proceedings.

Neal R. Gross

Court Reporter

UNITED STATES DEPARTMENT OF AGRICULTURE

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NATIONAL ORGANIC STANDARDS BOARD

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FALL 2017 MEETING

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TUESDAY,
OCTOBER 31, 2017

The Board met in Florida Ballrooms A, B & C of the Omni Jacksonville Hotel, 245 Water Street, Jacksonville, Florida at 8:30 a.m., Tom Chapman, Chairman, presiding.

PRESENT

TOM CHAPMAN, Chair
ASHLEY SWAFFAR, Vice Chair
JESSE BUIE, Secretary
SUE BAIRD
HARRIET BEHAR
ASA BRADMAN
A-DAE BRIONES
LISA DE LIMA
STEVE ELA
DAVE MORTENSEN
JOELLE MOSSO
EMILY OAKLEY
SCOTT RICE
DAN SEITZ
FRANCIS THICKE

STAFF PRESENT

MICHELLE ARSENAULT, NOSB Advisory Board Specialist, National Organic Program
DR. LISA BRINES, Ph.D., National List Manager, National Organic Program
DR. PAUL LEWIS, Ph.D., Director, Standards Division, National Organic Program
DEVON PATTILLO, Materials Specialist, National Organic Program
DR. JENNIFER TUCKER, Ph.D., Associate Deputy Administrator, National Organic Program; Designated Federal Official

ALSO PRESENT

TOM BARRETT, Allen Farms
JO ANN BAUMGARTNER, Wild Farm Alliance
ANAIS BEDDARD, Lady Moon Farms
TOM BEDDARD, Lady Moon Farms
JENNIFER BERKEBILE, Pennsylvania Certified Organics
MICHAEL BESANCON, Patagonia
MARIAN BLOM, IFOAM EU
MICHAEL BROWNBACK, Spiral Path Farm
DAVE CHAPMAN, Long Wind Farm
DANIEL COLLIER, International Trade Specialist, U.S. Customs and Border Protection
MICHAEL COLLINS, Old Athens Farm
JIM CRAWFORD, New Morning Farm; The Cornucopia Institute
THEOJARY CRISANTES, Wholesum Harvest
GERALD DAVIS, Grimmway Farms
LINLEY DIXON, The Cornucopia Institute
MICHAEL DURANDO, Director, Marketing Order and Agreement Division, Specialty Crops Program, Agricultural Marketing Service
MATTHEW FARMER, APHIS/Plant Protection and Quarantine
JIM FULLMER, Demeter Association
JIM GERRITSEN, Wood Prairie Farm
KARL HAMMER, Vermont Compost Company
PAUL HARLOW, Harlow Farm

ALSO PRESENT

PETER JOHNSON, Pete's Greens
IAN JUSTUS, Driscoll's
MARK KASTEL, The Cornucopia Institute
MADISON KEMPNER, NOFA-VT
FRED KIRSCHENMANN, Iowa State
ALAN LEWIS, Natural Grocers
ESTEBAN MACIAS, Grupo U
JESSE MARANVILLE, Georgia Gulf Sulfur
MELODY MEYER, UNFI
JOHANNA MIRENDA, OMRI
DAVEY MISKELL, Miskell's Premium Organics
JEFF MOYER, Rodale Institute
EMILY MUSGRAVE, Driscoll's
ROGER NOONAN, Middle Branch Farm; New England Farmers Union
HOWARD PRUSSACK, High Meadow Farms
URVASHI RANGAN, U R Consulting
JIM RIDDLE, Blue Fruit Farm
KYLA SMITH, Pennsylvania Certified Organics
MARY-SCOTT STANDISH, Fresh2o Growers
LISA STOKKE, next7.org
RUSSELL TAYLOR, Humic Products Trade Association
ANGELA TENBROECK, THF Hubery; CSAEC
CHARLOTTE VALLAEYS, Consumer Reports

C O N T E N T S

P-R-O-C-E-E-D-I-N-G-S

8:35 a.m.

DR. TUCKER: Okay. Good morning everyone. We're going to get started here.

Welcome. We are officially opening the fall 2017 National Organic Standards Board Meeting.

My name is Jennifer Tucker. And I'm the Associate Deputy Administrator of the National Organic -- the National Organic Program, part of the Agricultural Marketing Service.

First I want to thank everyone for being here. Thank you for making your way to Jacksonville. And Happy Halloween.

I'm going to be serving as the Designated Federal Official or DFO for this meeting. At previous meetings that role had been filled by Miles McEvoy, who left the National Organic Program at the end of September.

I worked side by side with Miles for six years. So, sitting in this seat today is a true honor and very, very meaningful for me.

He's not here with us today. But I'd like to recognize his service. Can we give him a round of applause?

(Applause.)

DR. TUCKER: Thank you. Next, I'd like to give a special thank you to Tom Chapman to my right here. Tom is the Chair of the Board and this meeting.

That role takes tremendous focus and organization. We're really, really grateful for his work. So can we give him a round of applause in advance for a great meeting?

(Applause.)

DR. TUCKER: And finally, I'd like to recognize and thank Francis Thicke. Francis is completing his fifth year with the Board So this is his last in person meeting as a Board member.

So -- yes.

(Applause.)

DR. TUCKER: Francis has invested many, many hours. And has brought extensive insights and experience to this group over the

last five years.

We're incredibly grateful for his service. We'll be formally recognizing him on Thursday. But I wanted to mention him right up front.

So again, Francis, thank you.

(Applause.)

DR. TUCKER: I'm going to introduce the rest of the NOP team during the NOP update. But right now I'm going to hand things over to Tom.

MR. CHAPMAN: Thank you Jenny. Hello and welcome everyone. Thank you for traveling here today to participate and observe the NOSB meeting.

I hope everyone traveled safe. And is enjoying Florida's hospitality.

I'm going to briefly review the agenda. And then we'll do brief introductions of the Board Members.

So this morning we're going to take care of some formalities and introductions. And

then later we'll hear reports, the NOP Report and ANSI Peer Review Audit from Jenny, the Associate Deputy Administrator.

After a brief update from the Chair, we will then move onto a panel of experts on imports with representatives from several federal agencies.

In the afternoon we will be getting an update on the National List and Petition status. And then get into public comment for the rest of the day.

Tomorrow we'll continue with public comment in the morning. And then move onto crops and the CACS Subcommittee after that.

On Thursday we have livestock handling in the Materials Subcommittee. And then we'll finish with any deferred items, review of the current work agenda, recognition of outgoing member, if we let him leave, and an election of officers.

With that we'll move onto introductions. Jenny, as she said, will

introduce NOP Members later during her presentation.

So let's start with NOP Members today. If we could start with you?

MS. BRIONES: A-dae Briones.

MR. CHAPMAN: And maybe the seat you sit in.

MS. BRIONES: Oh, Public Interest. And I've been here for two years.

MS. DE LIMA: Good morning. Lisa de Lima. MOM's Organic Market. I'm in the Retailers seat. This is my third year.

MR. BRADMAN: Asa Bradman with UC Berkeley. And I'm also on the Board of Trustees of the Organic Center. And I'm in the Environmental and Conservation seat.

MS. MOSSO: Joelle Mosso. I'm with Olam Spice and Vegetable Ingredients out of Fresno. And I am in my first year along with Asa. And I'm in the Processor/Handler seat.

MR. ELA: Steve Ela. Ela Family Farms in Hotchkiss, Colorado. I sit in the -- one of

the Growers seats. And this is my first year.

MR. MORTENSEN: Dave Mortensen. A faculty member in Agro-Ecology at Penn State in State College, Pennsylvania. Finishing my first year on the Board.

MR. BUIE: Jesse Buie. Ole Brook Organics, Brookhaven, Mississippi. I sit in the Organic Producers seat.

And I've been on the Board a year and a half. And I'm the Secretary of the Board.

MS. SWAFFAR: Hi. I'm Ashley Swaffar. I'm from Fayetteville, Arkansas. I sit in the Producers seat. I have a small certified organic mixed vegetable farm.

I also do animal welfare and organic inspections. I'm the Chair of the Livestock Committee and Vice Chair of the Board.

MR. CHAPMAN: Tom Chapman. I work for Clif Bar & Company. This is my third year on the Board. And I currently chair it.

DR. SEITZ: Dan Seitz. This is my second year on the Board. I fill a

Consumer/Public Interest seat. And I'm also the Executive Director for the Council on Naturopathic Medical Education.

MR. RICE: Scott Rice with the WSDA, or Washington State Department of Ag, Organic Program. I sit in the Certifier seat. And this is my second year.

MS. BAIRD: Sue Baird. I am from Missouri. And I represent Public Interest/Special Interest groups. I am on the Crops Committee and currently Vice President -- Vice Chair of the Livestock Committee.

MS. BEHAR: I'm Harriet Behar. I'm from Wisconsin. I'm a certified organic grower. I'm the Chair of the Materials Committee. And this is my second year.

MS. OAKLEY: I'm Emily Oakley. And I have Three Springs Farm in Northeastern Oklahoma. It's a full time job for me. And it's a two-person operation. And I sit in one of the Farmers seats.

DR. THICKE: Francis Thicke. Organic

dairy and crop farmer from Iowa. I sit in the Environmentalist seat and then chair the Crops Subcommittee.

MR. CHAPMAN: Thank you. Up next we have the Secretary's Report. Secretary Jesse Buie, can you report?

MR. BUIE: Mr. Chair, the minutes of the April 2017 Biannual Public Meeting has been distributed behind the reference tab in the binder. Are there any corrections or comments?

(No audible response.)

MR. BUIE: Mr. Chair?

MR. CHAPMAN: Seeing none, without objection we'll approve the report by consensus.

(No audible response.)

MR. CHAPMAN: Seeing no objection, the report is approved. We'll now move back to Jennie for the NOP Report and the Peer Review update.

Jennie, you have three minutes.

(Laughter.)

DR. TUCKER: I want to start my timer

just so I leave enough time for questions here. So, okay.

Okay. So good morning everyone. I am very pleased to be here today. Again, my name is Jennie Tucker. I am the Associate Deputy Administrator of the National Organic Program.

I have been there for six years. I love what I do. I am committed to the success of the organic community. And I am pleased to share this update on behalf of the Agricultural Marketing Service.

So here's an overview of what I am going to talk about today. First we're going to do some welcomes and thanks.

I'm going to give you a transition update. I'm going to talk a bit about the Sunset 2017 Final Rule. Then we're going to turn to enforcement and imports.

And an integrity update, so organic integrity database update. I'm going to give you an overview of the -- of the Office of Inspector General's Report that came out in the last couple

of months here.

And then we'll do a peer review of NOP. So, an update on what ANSI found during their 2017 Peer Review.

And then we will close. And I want to leave time for questions from the Board.

So first, I just want to welcome everyone to Jacksonville. And I want to thank the 15 members of the NOSB who sit up here today.

These volunteers devote enormous amounts of time to represent the interests of the organic community. They've read your comments. They're going to listen to you this week. And they will continue to serve you in the months ahead.

All of us thank you for your dedication. Can we give them a round of applause, please?

(Applause.)

DR. TUCKER: I also want to thank the hundreds of people who are participating in some way during this meeting. So I want to take a

look at that engagement.

We got more than two thousand written public comments before this meeting. So that's a lot of folks who took the time to submit a written comment online. So we thank them all.

Fifty-two people provided oral comments on two separate webinars. There were a total of 165 webinar attendees. And then we have 93 people signed up to speak in Jacksonville.

So, a truly committed community helping to move very, very important work forward. So thank you all.

I also want to extend a welcome and thanks from USDA leadership. And so we have a Secretary, Sonny Perdue.

We have a Deputy Secretary, Steve Censky. We have Former Acting Undersecretary of Marketing and Regulatory Programs. His name is Kevin Shea.

And I list him because Kevin literally stopped being Acting yesterday when the new Undersecretary, Greg Ibach, was sworn in in

Omaha.

So, again today, starting this morning, we have an Undersecretary of Marketing and Regulatory Programs, Greg Ibach. Which again, just sworn in yesterday.

And then we have Acting AMS Administrator Bruce Summers. Okay.

And so for those who are less familiar with the organizational structure, I'll quickly mention how all of these fit together. The NOP is part of a larger agency called the Agricultural Marketing Service.

AMS is in turn part of a larger mission area called Marketing and Regulatory Programs. The Undersecretary of MRP reports up to USDA and the Secretary.

So, what's real important here is we are still very, very much in a transition period. Okay, we've just gotten our Undersecretary literally yesterday.

So we've had a lot of people up and down the chain in acting roles. We continue to

have an Acting Administrator.

So the next step here would be the appointment of an Administrator that follows the Undersecretary. Okay? So that's still in very much transition mode here.

So, it is an honor to represent these folks here today. And they all do send their welcomes.

Okay. Next I want to welcome our new Organic Program Acting Deputy Administrator. So, Dr. Ruihong Guo. Ruihong is going to serve in this temporary role for the next several months as the recruiting process for a permanent Deputy Administrator is underway.

So for the past several years, Ruihong has served as the Deputy Administrator of the AMS Science and Technology Program. She's also held a variety of other leadership positions within AMS, including serving as the Associate Administrator, and serving in a number of NOP leadership positions.

So, Ruihong moved into her new office

yesterday. Okay? And we're really, really pleased to have her with us in a leadership role.

For those who don't know Ruihong, here are a couple of pictures. We had a really nice welcome meet and greet with her. And so here she is with some of our NOP managers.

Hello? There we go.

Okay. And finally a hello from Team NOP. So we currently have 36 staff members. And here's our most recent team picture from last month.

I just wanted to give you a sense of who's on the other end of that call or email. We have five of those team members here now.

So, I'd like to recognize and thank them for their hard work. So I've got Dr. Paul Lewis on my left here, our Standards Division Director.

Lisa Brines, our National List Manager. Devon Pattillo, our Materials Specialists, and oh, so much more. And of course our Advisory Board Specialist, Michelle

Arsenault.

And so deepest thanks to all of you.

(Applause.)

DR. TUCKER: Yeah. These folks invest a tremendous amount of time for the Board. And it's a wonderful, wonderful team.

I'd also like to introduce David Glasgow. Who is with the AMS Public Affairs Office. So David's back there. Hi, David. Thanks for being here with us.

Can we just -- yeah. Thank you.

Okay. I would like to now turn to the 2017 Sunset Review Final Rule. So, this rule was published in July 2017.

It removed eight substances from the National List. And the rule also renewed three substances.

The NOSB had recommended that those three be removed. So we wanted to explain our process here.

So the organic community has many opportunities to comment on proposed changes to

the National List. The public comment process happens at two NOSB meetings and during USDA's proposed rule public comment process.

Both forums, the NOSB meetings and the rulemaking process, are important sources of feedback. The final rule to re-list these three substances were the result of public comments during rulemaking.

Which showed that these three substances remain essential ingredients for organic handling. And alternatives are not yet available in the quantity, quality, or form needed.

These comments were new. Rulemaking is an important part of the National List management process. And the administration chose to heed those public comments about those three substances.

A key take home here is that for all interested folks to participate at all phases of the process. If you are using substances being considered for removal by the Board, let them

know your views.

If you commented before Board meetings, also comment when proposed rules are published. Very important. Okay?

We're also developing rulemaking to change the National List based on petitions and recommendations from the National -- from the National Organics Standards Board.

So this proposed rule will address recommendations that expand from 2000 to 2016. The proposed rule will include such substances as zinc sulfate, acidified sodium -- oh boy, acidified sodium chlorite.

I can't read my own handwriting there. Sorry. Methionine and hydrochloric acid. And so that rule is entering the clearance process.

Okay. Going to move onto an enforcement update and an imports update. And those are sort of hand in hand. They have been key areas of focus for us this year.

Enforcement and protecting organic imports are key Administration priorities. This

summer AMS asked the NOSB to add the topic of imports to the Board's work agenda.

To support this work, later this morning, there's going to be an imports panel. We're going to get multiple perspectives on this topic from the federal side.

And so let's take a look at some numbers. Here are some key figures to summarize our compliance and enforcement work in fiscal year '17, which ended at the end of September.

First, I want to highlight the current count of certified operations. As of last week there were a total of 39,035 certified operations in the organic integrity database.

That's almost two thousand more than we reported in January of 2017. It really demonstrates the continued growth of the industry.

And as a result, the enforcement numbers really need to be considered within that context. So the vast majority of organic operations are in good standing under the

regulations.

Last year there were 379 incoming complaints. And that's a little lower than in past years.

We found that a lot of our complaints are really questions. So we're providing more information in response to those questions.

Once we've answered the question, often the people contacting us are satisfied. They're happy. This has two benefits.

It provides better customer service, because we're helping people right up front get their questions answered. And it also allows our compliance and enforcement staff to better focus their efforts on the cases that are truly complaints with evidence about someone who may be breaking the rules.

We also completed 462 complaint reviews and investigations. That's a record for us.

And we attribute it to process improvements in the Compliance and Enforcement

Division. The team is focusing more on evidence collection and analysis with increased consistency between specialists.

During the year we levied $187,500 in civil penalties. These mainly came from uncertified operations who had been representing products as organic.

Interestingly, and this does continue a trend, of the complaints last year, 75 percent were about uncertified operations. So the majority of the complaints that we review and investigate, are of uncertified operations representing themselves as organic.

A good part of our civil penalties are for those uncertified operations. And also for suspended operations who continue to represent themselves as organic after being suspended.

Finally, the Organic Integrity Database tells us that approximately 311 operations were newly suspended or revoked in FY 2017. That includes actions taken both by the NOP and by certifiers.

We've also made significant advancements this year in data postings on the AMS website. So this summer, we posted a new searchable spreadsheet of fraudulent certificates, which makes it much easier for the trade to search and track over time.

We are also now posting enforcement actions more frequently than in the past. You can access appeal decisions, NOP suspensions and revocations, and NOP settlement agreements online.

So we get lots of questions, for example, about enforcement actions taken in the import investigations. Keeping an eye on this website will keep you informed about appeals and final actions that have been posted.

These are in addition to actions taken by certifiers. As the investigations proceed, as additional enforcement actions are taken, they're posted here.

We also have a new link on that web page where you can quickly pull up the list of

suspended and revoked operations in the Organic Integrity Database.

Okay. Let's turn to imports. First, some context.

The organic industry has been experiencing tremendous growth over the last several years. Consumers continue to choose organic products.

This rapid growth has resulted in dramatically increased supply chain complexity. We need everyone in the organic control system to act on the implication of these changes.

The organic control system, which operates worldwide, includes organic standards, inspections and auditing of organic farmers and handlers, accreditation of certifiers, an enforcement process that includes civil penalties, suspensions and revocations.

This control system requires all actors at all levels to protect organic integrity. NOP sets standards, accredits and oversees certifiers and enforces.

Certifiers complete certification actions and inspections, and investigate complaints. And need to be doing careful trace back and mass balance audits in that process.

Processors and buyers of products need to be doing their due diligence in making sure the products they are receiving are compliant. It takes all of us in the system to maintain organic integrity within a rapidly growing and increasingly complex industry.

So, here are some of the actions AMS has been taking over the past several months. We've issued proposed and final revocations of operations.

We've issued focused directives to certifiers working in Eastern European countries of interest. Requiring increased inspections and sampling and testing of specific commodities coming out of the region.

We have conducted compliance and satellite audits of certifiers operating in what have emerged as high-risk regions. Satellite

offices are what we call certifier branch and regional offices.

And, we have partnered with other federal agencies for enforcement. For example, the Animal and Plant Health Inspection Service, APHIS, and Customs and Border Protection, CBP, were recently extremely helpful in ensuring some noncompliant grains were stopped before entering the U.S.

Like many federal enforcement agencies, we're not always able to talk about our successes. There are some very sophisticated bad actors out there.

They have deep knowledge of how the system works. And they're using that knowledge to exploit the control system.

We're taking action. And these actions continue to be a high priority across the program.

This summer, we also increased our training with certifiers and handlers on how to maintain organic integrity across complex supply

chains. We've done live webinars for handlers, separate training with certifiers.

And we've posted training on the AMS YouTube site for handlers and certifiers. These posted trainings have gotten thousands of views since posting this summer.

In August we also posted an oversight of organic import summary of actions, reporting on the work that's been done. We'll continue to deepen our training this year with imports being one of the many focus areas at our in-person certifier training this winter.

As another action, last week we published a new interim instruction on organic imports. It's available in the NOP handbook online.

The instruction explains current regulatory requirements for certifiers overseeing organic products imported into the United States. It also recommends best practices and provides examples of actions that certifiers can take to comply with the existing regulations.

The instruction covers the certification requirements and documentation needed to import organic products into the U.S. It also covers certifier responsibilities in reviewing or issuing import related documents.

The document specifically emphasizes requirements for organic system plans, audit trail record keeping, and conducting thorough onsite inspections. The instruction also reiterates that foreign operations are subject to the same requirements as U.S. operations.

As we noted before, it takes all of us working in the organic control system to protect its integrity. This instruction provides best practices for certifiers on how to do that.

The instruction is open for comment until December 26. So we welcome your feedback.

Okay. So, as I shared earlier, the Secretary supports our enforcement initiatives. We're continuing our investigations of fraudulent imports at the certifier level, at the operation level, and when we receive evidence of

potentially fraudulent shipments.

We're following up on certifier directives, continuing to conduct certifier audits, and we're considering the feasibility of increased compliance audits in high risk regions. We've engaged a number of people in different federal partner agencies.

We'll talk more about that later in the presentation. We're also exploring options for standards related initiatives as well.

We've asked for the NOSB support in our work on imports. Again, we're having a panel later this morning.

We'll continue to support NOSB at the committee level. We're advancing specific technology initiatives, which I'll touch on further in a bit.

In short, we're working on -- in short about the technology initiatives, we're working on export certificates to support U.S. producers. We're exploring ways to communicate electronically with CBP, again Customs and Border

Protection.

We're maximizing the benefits of the Organic Integrity Database. And we're developing a concept of operations for super -- future system work.

We're also planning for our winter training with certifiers. Where again, imports will be a key topic.

To close this section, I want to emphasize that all organic enforcement and oversight rests on three core pillars, the Organic Foods Production Act, the USDA Organic Regulations, and evidence that can stand up in a court of law.

That's the ball game for all NOP enforcement. We hear people say, you know, this certifier must be noncompliant, because another government changed its accreditation status. This dairy must be out of compliance based on this nutrient test.

We must have sources of evidence that are legally defensible. We do have equivalency

agreements that include a mutual commitment to enforcement.

However, enforcement actions themselves are not reciprocal. It's our regulations that dictate the compliance of any specific certifier.

We do require residue testing. However, nutrient tests are not currently part of the regulations.

We have to govern and enforce based on the regulations and based on evidence against those regulations. When we stand before an administrative law judge, that's all that matters.

We enforce based on the law. And we'll continue to do so.

Now let's turn to a different topic. The Organic Integrity Database. I'll open this by highlighting our certified farms and businesses in Jacksonville.

So there are eight listings for Jacksonville. And 453 in Florida overall. You

can learn more about all of these businesses at the Organic Integrity Database.

The Farm Bill funding for technology modernization was five million dollars from 2014 to 2018. Our first public release was in September 2015.

We launched release seven in September 2017. The system does more than we thought possible when we wrote our initial needs assessment in 2013.

Now we have a full year remaining to make sure everything is sustainable for the long term. This is officially called operations and maintenance.

This allows us to really stabilize the system, fix bugs, and continue to refine reports and digital connections as needed. We were successful with this system in part because of a fabulous user group of certifiers.

They provided us input throughout the process. And continue to provide regular feedback. To those of you here today, I'm

really, really grateful for your engagement over the last few years.

I also want to thank the integrity team. This has been an extraordinary team to work with. The developers really, really embrace their work with us.

Their willingness to get into the details on certification statuses and product taxonomies, truly impressive. And we've been really lucky to work with them.

Now it's all about the data. Integrity has been a learning curve for certifiers and us. And as certifier staff change, they're learning the system through a whole new lens.

So new technologies are driving efficiency and better customer service throughout the organic control system. As we move into the long term, data quantity and quality will drive our success.

Here are some examples of where we'd really like to see more reporting for several

reasons. So, reporting of acreage. This is absolutely critical to enforcement and traceability.

We want to see more reporting of business types. For example, slaughterhouses and dairies. This information helps us understand the market and helps connect buyers and sellers.

Adoption of the product taxonomy. Better structured data is vital to provide accurate and complete reports and to track trends over time.

For example, we want to keep learning how much grain acreage is growing over time in different places. We need structured data to answer those questions.

Finally, we recently launched a Certifier Data Quality Dashboard that certifiers can see to help them assess their own data quality. This dashboard was built to help us celebrate certifiers who are investing in data quality and to motivate other certifiers to improve where needed.

It matters to farms and businesses if their data are up to date in integrity. The dashboard helps certifiers see where they can meet that need.

I also want to highlight one relatively new feature in integrity that we've built out and want folks to be aware of. In September 2016, we launched an Optional Federal Certificate Module.

And certificates can be -- can be generated by certifiers within the database. And then are available on the integrity website to anyone for free.

I want to say congratulations to the two certifiers that are already using integrity to generate operation certificates. LETIS and the Rhode Island Department of Environmental Management.

Certifiers can customize the certificate addenda statement, add a list of certified products, they can review draft certificates before publishing, and generate

batch downloads of certificates for their records. So what's the benefit of that?

It reduces the cost to confirm certification status. The certificate includes the USDA website address and a QR code. So anyone with a certificate can confirm its authenticity.

Another benefit is that it can reduce the time organic handlers and processors spend verifying the supply chain. Because it makes all the certificates that are available for operations in their search results.

So if a buyer wants to buy a certain commodity from producers in a certain U.S. state, if the certifier has used the product taxonomy and the integrity certificate, the buyer could access that set of producers and their certificates from integrity.

If you're a certifier, we encourage you to look at this capability. We really worked hard to establish it as an option for you.

If you're a certified operation and

want an integrity certificate, consider reaching out to your certifier to express that interest.

Next steps. As mentioned, we're continuing to emphasize data quantity and quality with certifiers using the Data Quality Dashboard as a new guide.

We're also able to use some of the Farm Bill investment to invest in technology to make our accreditation management processes and work flows more efficient.

To that end, at the start of last year, we purchased software to support the work. The system is called ACCREDIT.

We're also looking ahead at international activities. I'll be speaking about that later this morning during the imports panel.

We're working on projects involving both import and export certificates. And developing concepts for future technologies to support that work.

Okay. I'm going to turn to the Office of Inspector General Report. So this is the

first big Acronym that I'll keep on repeating, OIG, Office of Inspector General, OIG.

This report was published in 2017. It is available online. And includes the audit process, findings, and AMS's response.

So the OIG conducts independent audits and investigations of the Department programs and operations. OIG audits happen all the time.

They are an important part of the Department's work to enhance customer service and efficiencies. Previous NOP audits have helped the program tremendously. And this one will as well.

So here are some examples. There were program-wide audits in 2005 and 2010. There were National List audits in 2012. That was a no findings audit.

And then there were organic and milk audits in 2012 and 2013. It was actually one of the organic milk audits that led -- that drove us to complete the needs assessment that led to the Organic Integrity Database.

So audits led to new successes. So, the goal of the audit was to evaluate AMS controls over the approval and oversight of NOP's agreements for international trade and the imports of organic products.

There were four OIG findings. AMS's process for determining equivalency between the U.S. organic regulations and foreign countries' standards were not fully transparent.

Number two. Organic import documents were not verified at U.S. ports of entry.

Number three. Controls over organic products fumigated at U.S. ports of entry were inadequate.

And number four. Onsite audits for existing agreements were not conducted in a timely manner because AMS has no established requirements for frequency.

Now across these four findings were nine recommendations. And AMS proposed responses to each of those recommendations.

It's those recommendations and

responses I'm going to talk through next. So here's the first. And this is the one that related to transparency.

Organic standards around the world are generally similar, but not identical. When the U.S. negotiates with another country for equivalency, it compares the USDA organic regulations to the other country's regulations.

The OIG recommended that AMS publically share the differences found in that comparison. So AMS has accepted that recommendation and will implement it.

Now to understand the next three OIG recommendations and AMS responses, it's useful to pause to define some terms. And we're going to get into some acronyms here for folks who want to take some notes.

First, there's the NOP import certificate. Right now it's required for equivalence agreements like the one we have with the European Union, EU.

An NOP import certificate must

accompany every shipment of EU organic product entering the United States. The EU certifier approves the NOP import certificate to verify that the product entering the U.S. is organic.

Import certificates are not currently required for organic products imported from countries that don't have equivalency agreements with the U.S. Those products must be certified.

Next, Customs and Border Protection, that's CBP, Customs and Border Protection, has a lot of authority at the border that the U.S. -- that the NOP does not.

CBP has a system, here's another acronym, called ACE. It actually stands for automated commercial environment. Which is why really all you have to remember is ACE. Okay?

That process, ACE processes import documents for products entering the United States. So all sorts of products entering the United States get entered into the system ACE.

Right now the ACE system does not hold organic import certificates. Here's where a new

term comes in, called a message set.

A message set is what allows the ACE system to accept and store an electronic version of the NOP certificate in addition to all the other required shipment information.

So, in this figure, the form on the left undergoes a technology transformation to become the message set or data stream on the right that ACE can work with. These terms are really important in understanding the next three recommendations.

So, we're moving onto the first of three recommendations related to import verification. So, CBP is the nation's largest law enforcement agency.

It has special authorities at the U.S. ports of entry. NOP enforces organic laws but has no authority at ports of entry.

Certifiers confirm organic compliance on both sides of the border. But we don't have a presence at the border itself.

The OIG recommended that AMS and CBP

create an official partnership so AMS can use CBP staff to check organic import certificates and make sure they are valid for organic products entering the U.S. from equivalency countries.

So AMS supports expanding the MOU with CBP. AMS already has an agency level MOU, Memorandum of Understanding. So we support expanding that.

We do know that CBP officials right now have limited capacity and no current authority to review organic imports or NOP import certificates. So we're going to develop a report outlining how AMS and CBP could collaborate.

Next, as I mentioned before, ACE is a system for tracking products coming into the U.S. The OIG recommended that AMS work with CBP to add instructions to ACE to explain what CBP officials need to look at on import certificates to make sure they're valid, and what to do if they suspect the paperwork or product is not truly -- organic.

So AMS accepted that recommendation.

NOP import certificates right now are only required from the EU, Switzerland, Korea, and Japan.

So AMS is requesting access to additional areas of ACE. And we are submitting an organic message set proposal to CBP. Remember, the message set is what allows the ACE system to generate the import certificate.

Okay. Next, for this item the OIG recommended that AMS develop a plan to ensure that incoming organic certificates that we've been talking about are actually valid when organic produce comes to U.S. ports of entry.

The OIG recommended that the system also identify fraudulent certificates and gather data on organic products entering the U.S. So AMS accepted that recommendation.

We'll prepare a needs assessment for an organic verification system that validates organic import certificates, identifies fraudulent certificates, and captures data. This needs assessment would create a baseline for

future technology development work.

Let's do another background slide for context about the OIG recommendations related to fumigation. So, for this recommendation, we're going to talk about another key federal agency, one of our partners, again, another acronym, APHIS, part of USDA.

So, we're going to talk about them and CBP. So for those of you new to this discussion, here's what happens at a port.

So let's say a fruit shipment arrives in Florida. APHIS conducts a risk-based inspection of the container.

If APHIS finds -- so let's say APHIS finds a pest that could harm Florida orchards. The shipment must be treated or fumigated to enter Florida.

The importer is notified of the requirement. And the organic importer then has two options.

They can accept fumigation, selling the fruit, but not as organic. Or they can re-

export the shipment to a place where the pest isn't a risk.

Now this is happening already. Certified organic importers know that they can't sell products that have been fumigated with prohibited substances as organic.

If they hear that one has, those are their two options. They can sell the fruit, but it can't be labeled as organic. Or they can re-export the shipment.

So, with that background, let's turn to the three OIG recommendations on fumigation. OIG recommended that AMS partner with APHIS so whenever organic imports are fumigated, AMS is notified.

Once imported organic products are fumigated, they can't be sold as organic. Again, because they're treated with a prohibited substance.

So, in January of this year, AMS and APHIS executed an MOU to document collaborative efforts to identify imported organic shipments of

products that had been treated or are treated as a condition of entry.

Okay. Now we're back to ACE again. So, remember ACE is the system that CBP has to track all the incoming products to the U.S.

OIG recommended that AMS work with CBP to update the ACE database so it tells APHIS officials when organic imported products are fumigated for pests. And, gives them instructions for what to do next to prevent that product from being sold as organic.

So, we need to know what is happening. And we need to tell them what to do next.

For this next item, OIG recommended that AMS develop a system with procedures for tracking organic products that are fumigated so the fumigated products are not sold as organic. This information could be shared with the organic community to protect integrity.

So the last recommendation was about telling AMS and, and us telling APHIS what to do next. This recommendation relates to how we

track all this and notify the trade.

So AMS and APHIS are establishing procedures to notify importers and certifiers when organic products are treated and can no longer be sold, labeled, or represented as organic.

Okay. Now we're turning to the final OIG finding on timely audits.

First, OIG recommended that AMS track information about onsite audits for equivalency or recognition agreements. This would show AMS is doing audits in a timely fashion, ideally every two years as OIG recommends.

Earlier I told you about the ACCREDIT system which we're using to track certifier audits. AMS plans to also use that system to track and report on our reviews of trading partners.

Finally, and this is the ninth recommendation. OIG recommended that AMS update its procedures to specify that equivalency or recognition audits should be conducted every two

years.

Right now there is no specific time frame for equivalency audits. Only recognition agreements. We accepted that recommendation and will revise the procedure.

Okay. To close this section, AMS accepted all the OIG's findings and responded to all of its recommendations. And our actions will be in place by July 2018.

OIG reports have helped AMS shape NOP into the program that we are today. And we thank them for their work and feedback.

On a personal note, I started working with NOP while the -- when the program was implementing the findings from the 2010 audit. When I started as Associate Deputy Administrator, it was very clear how much that audit was serving as a critical roadmap for moving ahead.

The program is better because of it. This audit reaffirmed the actions that we've already started to protect the integrity of organic imports.

AMS is committed to that work ahead. We're going to be better because of this report and the actions that we've committed to here.

Final section. I am now going to go through the ANSI Peer Review of the National Organic Program.

Okay. So the ANSI Peer Review in 2017, again, it was conducted by the American National Standard Institute, or ANSI, under contract.

It was done by a panel of three independent auditors. The process was driven by an NOSB recommendation, a memo to the Board in November 2014, an NOP 1031, which is in the NOP handbook, called peer review of NOP accreditation.

So peer reviews are a vital component of our continuous improvement. This was our second year working with ANSI. And I'm really impressed with their level of precision and detail in reviewing our documents and procedures.

These folks really dive into the

specifics. They know what our procedures say. They see what we do and how we do it. And they note discrepancies at a very granular level.

So the goal of the peer review is to determine whether NOP actions align with our own procedures and with ISO/IEC 17011. Which is a quality standard.

So the context for the peer review is for a small program serving a growing industry. We have strong and robust accreditation procedures.

We have public and transparent standards. We have a skilled pool of auditors who receive ongoing training. And we provide annual training and webinars to certifiers.

So, here's an overview of ANSI findings. Overall, NOP is following its procedures.

There were no major nonconformances related to accreditation decisions. The ANSI audit identified opportunities for NOP to improve record keeping and clarify procedures.

So, let's go through the ANSI findings related to procedures. NOP corrective actions are not tracked as described in NOP 1020.

So, this was our corrective action procedure. NOP needs to ensure the timely implementation of corrective actions before the next audit.

NOP does not have a procedure for determining the number and location of certifier satellite office audits. And NOP assessments of certifiers occur every two to two and a half years, not every one to two years as recommended in ISO 17011.

Okay. So, here are our corrective actions related to procedures. We have revised our procedures to monitor peer review corrective actions on our operating plan.

So, NOP 1020, which is the document that ANSI referenced, was the document we used to track corrective actions from peer reviews, internal audits and management reviews.

We found that it just became one more

document to try and struggle with. Which was not helpful.

Instead, we now correct all -- track all corrective actions through our program-wide operating plan. Which is helping build those actions into our daily work better.

The launch of ACCREDIT and additional staff will help accreditation time line management and satellite office tracking.

One action that we think would significantly help in satellite office management would be to require that all satellite offices that are currently under separate management be accredited as separate entities. So, we're currently exploring that option.

So, more generally, NOP continues to improve its record management. We have a dedicated quality manager.

We're improving our processes and training. And we're updating and retiring procedures that we no longer use, because they're built into another process.

Now on the final item, a corrective action related to procedures, our regulations require that accreditation renewals occur every five years. And midterm audits occur every two to three years.

NOP is going to review its accreditation policies and procedures to explore options for more frequent assessments. We don't currently have resources to perform onsite assessments every one to two years according to ISO 17011 recommendations.

We are reviewing how we could use the annual report process from certifiers for more frequent follow ups.

Here are ANSI's findings related to records. NOP didn't complete the review section of accreditation application documents.

There were some instances of incorrect versions or incomplete records. So, for example, a date was missing or a signature was missing.

NOP accreditation certificates do not contain the certifier's full address, and do not

indicate the current version of 7 CFR, part 205. And there was one isolated instance of a date discrepancy.

So as I mentioned before, ANSI reviews are very detailed and precise. And so these findings are very specific.

So, here are corrective actions related to records. We do conduct robust certifier audits of new applicants, midterms and renewals.

In fact, AIA, the division that's responsible for that, Accreditation of International Activities, they conducted 60 audits last year. Including midterms, renewals, desk audits, witness audits, peer reviews, and recognition audits.

These activities take significant amounts of time. So for those new to the process, take a look at NOP 2000 and 2005 in the public handbook.

These walk through the detailed processes that our auditors use as well as their

checklist.

We are refining our application processing approach. So when ANSI found that we had not completed the review section of an existing form, that's because that information is now stored elsewhere. It's in a different form.

So, it's not that we're not doing it. It's that we're doing it in a different place than our procedure says we are doing it.

So we need to update our procedure to report accurately where all of these activities are happening across this robust process.

We have instructed auditors about required signatures on certain forms. We will continue to train on this.

We're going to revise our accreditation certificate template to reference the current regulations and include the certifier's complete address. And we'll review our procedures related to accreditation certificate issue dates.

So, in closing, peer reviews are a

vital part of our quality system. The 2018 Peer Review, which will also be with ANSI, will start in the spring.

In the meantime, we're going to post the ANSI report and our NOP corrective actions. We're going to continue to advance our records management practices, refine our accreditation processes, continue to launch technology aids, and conduct regular training for auditors and certifiers.

And so we pass along a big thank you to ANSI and the audit team.

And that's it. I'm going to close by again thanking you all for being here. And for all the work you're doing to protect organic integrity around the world.

I am now happy to take some questions from the Board.

(Applause.)

MR. CHAPMAN: Thank you Jenny. You had some big shoes to fill there for Miles' usual update. And you filled them well. So thank you

very much.

I will now open it up to questions from the Board. Do we have any questions? I see Harriet.

MS. BEHAR: I have a few questions. But, maybe I'll do just one or two and then go around to other and then you can come back to me.

So just based on the report that you just gave us, thank you, Jenny, for being so detailed and comprehensive.

The fumigation system that you have now that's dealing with notifying the certifiers of what's been fumigated, that came in as organic but should no longer be sold as organic, I'm wondering if that could also be somehow, be put up on the website?

Because I think the buyers need to know. Many times this -- notifying the certifier, it might be a little late for the buyer to realize that they are bringing in a product that maybe didn't -- no longer had the organic integrity that it should have.

So, I'm just wondering about posting that. And then the second, on the -- I'm wondering about at imports -- oh --

MR. CHAPMAN: Let's do one question at a time. And I'll go back to you.

MS. BEHAR: Okay.

DR. TUCKER: Thank you. I think the work we're going to do over the next several months will, I think, identify both components.

It's how does everybody inform each other? So certifiers and also the trade.

So, how do you get information out of the systems, transmit it to the right people in a timely manner, alert the trade to anything that might be coming in that should not be sold as organic?

That will all be part of sort of the system and concept of operations that we work on in the next several months. So, agree that that's very important.

MS. BEHAR: Then I'm wondering about looking at the NOP program manual. And actually

have some system for managing risks.

So you mentioned about that if an accredited certifier who was under an equivalency agreement with another entity, revoked or had its certification -- its accreditation revoked. That we couldn't revoke their accreditation under the equivalency agreement without evidence.

But, I'm wondering if we couldn't have something in the program manual that would then at least bring extra scrutiny to that accredited certifier? Because there's obviously a risk that's going -- that another entity has identified.

So I'm just wondering if we couldn't improve our program manual to bring up the procedures there?

DR. TUCKER: Yeah. Risk-based oversight and audits is something that we're spending a lot of time talking about. So, how do we, both in our enforcement and surveillance programs, take more of a risk-based approach?

And so that's something that is of

great interest in the program. We have done increased compliance audits and increased satellite office audits in response to some of those risks.

But yes, that is an area that we're very interested in looking further at. Thank you for the questions.

MR. CHAPMAN: Dave?

MR. MORTENSEN: Yes. Thank you Jenny for that overview of things. That was quite detailed.

And I have a question. You said that AMS has accepted the findings and AMS will act on the findings by July 2018. That's pretty soon, I think. Less than a year.

And I'm just wondering, has there been a kind of a mental sensitivity analysis done on, you know, what are the -- what are the big hammers?

And what are the tweaks out of those nine that are -- that really need attention first in order to make the greatest improvement in the

integrity in the system?

If everything wasn't done by 2018, July 2018.

DR. TUCKER: Good question. So let me sort of clarify the July 2018 date. Right?

So the way OIG audits work is that we do responses where we need to have responses to everything in a year. It does not mean the work will be done in a year.

So for example, a couple of these recommendations are things like needs assessments and concepts of operation. So that doesn't mean we'll have a system built by July 2018, it means we'll have a concept of operations and plan for a system developed by then.

And that's actually worked in the past. We did the same with the Organic Integrity Database.

We put a needs assessment out there in 2013. It was -- it sparked an awful lot of feedback and conversation, this is what we need. Is this not what we need?

So for example, back to Harriet's question about well, how do you alert certifiers and trade? A concept of operations might lay out some, here are some options for doing that.

Which would then generate feedback about okay, is that the right way of doing it? Is there another way of doing it?

In terms of the big hits, those are things we're doing already. So, separate from the OIG audit.

We're continuing to do certifier audits. We're continuing to look at these risk-based approaches. We're continuing to track ships.

So those are actions that we are taking. We'll continue to take concurrently with looking longer term, is what is the capability development that has to happen to sort of accommodate the growth of this industry?

That's something again we invite everyone to take a look at. You know, it's not -- so NOP will do it's -- what it can do in the

system. But industry owns a part of this, the certifiers own a part of this.

So, I think as we're working on the OIG audit, starting to put materials out there that will also feed feedback about well, what is everybody else doing? And how do these all touch together in the long term?

Does that make sense? And does it answer your question?

MR. MORTENSEN: I think it makes sense. I, you know, I'm the "scientist" on the Board. But I work a lot and interact a lot with grain growers and -- grain growers.

And I hear a lot of concern about how quickly we can improve the integrity of the shipments coming in. And the concern about its impact on price, et cetera, et cetera.

DR. TUCKER: Yeah.

MR. MORTENSEN: So, I think as we move forward, it will be very helpful to have a sense for how quickly we can improve the system in a way that's going to make a difference to folks on

the ground.

DR. TUCKER: Yeah. I would say also that good science is supported by good data. Which is why I emphasized so much the importance of the Organic Integrity Database and reporting of things like acreage data.

We really need that data both domestically and abroad. And I think that data will also help support sort of more science-based actions and faster actions.

So we understand the landscape better. Yeah. Thank you. Good question.

MR. CHAPMAN: So I have a quick follow up question. Then I'll go to Emily and Francis.

I also want to just put a quick reminder out. I'm not trying to discourage import related questions.

But we do have that import panel of experts which Jenny is a part of. So we'll have additional time at that time to ask it as well. I see you as well, Harriet.

Really quick follow up. You mentioned

acreage data, Jenny, domestic and abroad. What's the -- how would we go about accumulating that information?

As my understanding now it's not required to be listed on organic certificates?

DR. TUCKER: Right. It's also not -- it's not required in the Organic Integrity Database.

And so that's where we'd really like to have the data. Is the system will allow for operation level reporting of acreage data.

And also has -- there are ways where certifiers have figured out how to report it on a field basis. And it's not just acreage, it's also livestock counts.

So the system is set up to accept that data. Not a lot of certifiers are providing that data right now.

So we're really trying to emphasize the importance of that data coming into the system.

MR. CHAPMAN: And then the OID itself

is not applicable to equivalent countries. And so how do we --

DR. TUCKER: You mean Integrity Database?

MR. CHAPMAN: Yeah.

DR. TUCKER: Right.

MR. CHAPMAN: How do we deal with that gap?

DR. TUCKER: It's a good question. So I think a lot of other countries are looking at the Organic Integrity Database as a model for the kinds of systems they could stand up.

Right now they're -- right now there's no plans to include equivalency countries in the Organic Integrity Database. Its operations are certified to the U.S. standards.

However, we -- I think conversations happen with other countries about what systems they have. We have built a very public data dictionary.

And we publish all of our, what are called APIs, application programming interfaces.

So anyone can take our data, can grab our data, the publically available data and use that information.

MR. CHAPMAN: Emily?

MS. OAKLEY: I have two questions. Do you want me to ask the first one first?

I was wondering if you had any sense of when you would be announcing the new position who will be replacing Francis's seat?

DR. TUCKER: Which position? I can't -- oh, Francis's. Sorry. There's a little bit of an echo.

So, we got some very qualified candidates for that seat that's becoming vacant. That application review process is still underway.

So, we would anticipate an announcement in the next few months.

MS. OAKLEY: Okay. And then my second question is related to complaints. I believe you stated that 75 percent of the complaints are regarding non-certified operations that are

representing their products as organic.

And I know that with the limited staff there are constraints into how quickly you guys can resolve those complaint issues. But, I know I've actually submitted one, and it's been over a year since it's been through the pipeline.

And I'm wondering what are some of the things that could be done to help speed up that process short of additional staff?

DR. TUCKER: Okay. Good question. So, how are we -- we are -- we are re-looking at the overall complaint management process.

So I shared that we're taking in some of the intake. That's actually helping a lot.

That's been introduced in the last few months. And it's already making a significant difference.

So I'm going to give a real example. We used to get complaints and -- well, we still get emails in saying, well, how do I know that Farmer Brown is organic?

Right? And so you can hear that in

two ways. How do I know Farmer Brown is organic? Or I can hear, hey, how do I know Farmer Brown's organic?

And so it turns out that a lot of them are that hey, how do I know? They're just questions. They're not, I think he's falsifying.

And so when we've trained our intake specialist to recognize the difference and to ask the right questions right up front. Which takes care of a lot of those.

Because we can answer the question. And then our analyst doesn't need to spend the time looking up, is he in the Organic Integrity Database? Is he certified? Is he currently certified?

And so there's a whole service out there. We're also teaching the staff more about risk-based approaches in terms of how do you quickly look at an incoming complaint? And how do you quickly get information out?

So, for example, some folks are selling as organic. They still don't know that

there are laws related to that.

And all you have to do is send them a letter saying, did you know there are laws related to that? Stop doing that. And they stop doing that. Oh, I'm so sorry. Let me stop doing that.

And so I think the trick is getting those letters out faster. So we have a new Compliance and Enforcement Director, Betsy Rakola.

She is doing a superb job of recognizing those opportunities and implementing them very, very quickly. So, we're really pleased by how that's playing out.

And I think the numbers are going to continue to reflect that over time.

MR. CHAPMAN: Francis?

DR. THICKE: Thank you Jenny for your informative presentation. I have a question about one of the enforcement actions taken this year.

It has to do with the 15,000 cow dairy

in Colorado that was alleged to not be grazing. And recently the response of the Compliance Department was that it was in full compliance.

And it's a lot surprising to some people. I'd like to have some more information about how that was come to that conclusion.

DR. TUCKER: Okay.

DR. THICKE: We've all seen -- in fact just to preface it, we've seen the articles in the Washington Post that they had investigated over three months, eight times they had investigated that scene.

Fewer than 10 percent of the cows grazing. And they had done tests on omega-3 fatty acids and conjugated linoleic acids, and found they were on the level of conventional agriculture.

And so I called the Compliance Officer at NOP to see did you schedule this ahead of time? Or did you do it unannounced?

And she told me that they scheduled it ahead of time. So I was really concerned that

you would do that, come one day and tell them you were coming so they could put the cows out and conduct -- do what they had to do with their records.

And it's a real concern for me. Are you going to be looking more into that?

DR. TUCKER: Okay. Thanks for the question Francis. You know, I can't comment on the specifics of any particular investigation.

I will mention that unannounced inspections are very, very important tools in the organic control system. Very important and NOP does conduct unannounced inspections.

We also rely on certifiers to do unannounced inspections. In fact they're required to do up to five percent a year unannounced inspections.

So, they are a very important tool in the compliance tool box. As I mentioned earlier, the evidence needs to be what is in -- against what's in the regulations.

So nutrient levels are not part of the

regulations right now. So that's not -- it's not a regulatory criteria against which compliance can be evaluated.

And really, there's no substitute for the annual inspection of getting into the farm. Of walking the fields. Of reviewing the records in real time onsite.

And so trained auditors go onsite and they review these records. And they look at the practices. They look at the animals. They look at the pastures.

They see what's going on across the entire farm. And so there's really not a substitute for that kind of robust inspection.

DR. THICKE: Okay. Thank you.

DR. TUCKER: So, unannounced inspections as I mentioned earlier, we are continuing to look at how risk-based inspections could feed more into the system.

And so I think unannounced inspections are a good tool in that risk-based framework.

DR. THICKE: But I would point out

that the Washington Post article indicated that the inspection was done by the certifier after the grazing season. So there was no way they could know if they were grazing.

And this is a real concern. Because a lot of small dairy farmers are suffering greatly. And there's a huge oversupply of milk.

And the same organization is going to be an -- they're announcing they're going to put 30,000 cows in Missouri. So, I would really urge stronger kind of enforcement on this.

I'm reminded of this thing with CLAs and omega-3s, that they are pretty good evidence. And the fact that there are pictures of cows not grazing, it reminds me of Henry David Thoreau once said about dairy farmers in his day that were diluting milk with water.

And he said, sometimes circumstantial evidence can be very great, like when you find a trout in the milk.

And so I think that we have to be a little stronger on some of these things. I would

urge you to do that. Thank you.

(Applause.)

MR. CHAPMAN: Thank you everybody.

DR. TUCKER: Thank you for the feedback Francis.

MR. CHAPMAN: Harriet?

MS. BEHAR: I have two questions. First for Jenny and the second for Paul.

So, I just wanted to know if there has been any thought with this risk-based, as well as the new procedures for the import, if that will be translated into new questions on the accreditation auditor's checklist?

And more training for -- I know you're doing some training for certifiers. But I want to make sure too that at the accreditation level, when they are being -- going through their accreditation that these new procedures are going to be translated into a checklist, you know, sooner rather than later?

DR. TUCKER: So I would say the checklist is always evolving as we continue to

find new things. Right?

As the industry continues to grow and change, new things get added to the checklist. I would -- I would also say in addition to our auditors being well trained and looking for a risk-based, we also need certifiers to be making sure that all their inspectors know how to do trace-back audits. How to do mass balance audits.

So, inspector training is as important part of a risk-based system. So, all the certifiers need to take responsibility to make sure the inspectors that they are putting on the ground can also do that kind of risk-based assessment.

MS. BEHAR: And then for Paul. I know that the Materials Subcommittee has put forward for a work agenda item, a comprehensive review of sanitizers, disinfectants, the products that are in contact with organic foods.

And I'm wondering where that is in the process? And we did kind of put that forward to

help both the NOSB and their deliberations when we get new sanitizers, et cetera -- petitioned, so we can see where they fit in the greater picture.

And see if there's any holes or, you know, where they're needed. Certain, you know, environments that they work in, or whatever.

As well as for the trade. So they can see where there possibly are holes or duplications as we have petitions and go through sunset.

So where is that standing now?

DR. LEWIS: Sure. So thank you Harriet. So we just received that request for a work agenda item from the Board.

So thank you for that. This is something that I know that we've been talking to the Executive Committee about this work agenda item.

As Dr. Tucker just mentioned, we have new leadership in transition with the National Organic Program, Dr. Guo. So, I'm looking

forward to talking to her and familiarizing her with that information.

One thing to think about, as this work agenda item is being developed, as the public knows, we have an open docket system. So, if you have information that could help the Board explore this topic in terms of are there particular sanitizers that may be useful for a particular use on a particular substrate, that would help the Board in terms of some of its work.

So again, you know, use the public comment opportunity, especially written comments to help educate the Board and help the Board with its work.

MR. CHAPMAN: Ashley?

MS. SWAFFAR: Thanks for your update, Jenny. You snuck in there a little bit about methionine.

I'd just like to know a little more about where that is in the process.

DR. TUCKER: So there is a -- there is

a proposed rule that has been drafted and has entered the early clearance process.

So, when that rule makes it through clearance, then it would be announced, a standard process that any proposed rule once it's -- goes through clearance would be published for public comment.

MS. SWAFFAR: Thank you.

DR. TUCKER: Thank you.

MR. CHAPMAN: Dave?

MR. MORTENSEN: Jenny, the Board is -- and the Materials Subcommittee is wanting to move ahead with amending the inert ingredients list. This has been something that the Board over the years has worked on.

In 2010 the EPA moved away from the EPA List Four to their new Safer Choice Program for compounds. The Program is supported by EPA.

And it would provide a framework by which inerts involved in organic production can be critically evaluated for inclusion on the National List.

In order for us to move ahead with this, we are going to need to have a Memorandum of Understanding. Some sort of open and active dialog between EPA, NOP and members of the Materials Subcommittee on the NOSB.

And we're poised to move ahead with that. And what we're going to need is the MOU to get the crosstalk going between the agencies.

DR. TUCKER: Right. So we have that item. We're very aware of that item.

We're still going through transition. EPA is also still going through their transition.

So I would say as both departments and agencies find their way in the new administration that that is a conversation that we'll have in terms of how do we proceed with that.

DR. LEWIS: If I could just add, just about that comment. Is that this is one thing, Dave, that we're aware of.

We've had a number of interactions with EPA with Office -- that Program colleagues. So, this has been a dialog we've had over the

years.

And this is a topic that we're looking forward to presenting to Dr. Guo. And with the new administration coming onboard in terms of prioritizing.

MR. MORTENSEN: I'm just curious. Because I was very involved with the EPA when I was -- during the Obama administration.

Do we have some sense for how long this will take?

DR. TUCKER: I do not.

MR. MORTENSEN: Are there active discussions underway where, you know, where this is being entertained as something we can get going?

DR. LEWIS: We've had ongoing discussions with OPP and EPA.

MR. MORTENSEN: Um-hum.

DR. LEWIS: So, you know, again as folks come onboard we'll see in terms of the timing of that activity.

DR. SEITZ: Jenny, if I understood

correctly from your presentation, if the NOSB recommends removal of a substance from the National List, and then there's subsequent rulemaking and there's public comment that is strongly in favor in keeping that on the list and there may not be any public comment, further public comment on removal that there still is discretion on the part of the USDA to keep that substance on the list.

In other words, the recommendation from the Board may not necessarily be acted upon in the way that the Board recommends. Is that --

DR. TUCKER: Your interpretation is correct.

DR. SEITZ: Yeah. So, in other words if there were people who presented testimony or advocated the removal of a substance, they should be aware that during subsequent rulemaking, they may want to -- they may want to provide public comment again, just to make sure that that's finally acted upon.

DR. TUCKER: That's why I emphasized

that process.

DR. SEITZ: Yes. Okay. I just wanted to be clear on that.

DR. TUCKER: It's really important -- yeah. So it's important for folks who are using materials to say that during the Board process.

And there are people who -- for folks who want to advocate removal, it's important for them to say that during the rulemaking process and vice versa.

So, it's important for everyone to participate throughout the process. Because both parts are important, the Board public process and the rulemaking public process. Yeah.

MR. CHAPMAN: Harriet?

MS. BEHAR: Just a quick comment on the inerts. I'm hoping as we work through -- you, the NOP works through the MOU with the EPA that you'll come back to the NOSB in case we have some input into possible additions or modifications to that MOU.

Because you know, we are in charge of

materials. And those inerts are, I mean, not ultimately, but in the review.

So, we would like to make sure that that MOU is robust. And really does meet the criteria of the EPA.

DR. TUCKER: Yeah. I would assume that be a collaborative process. Absolutely.

MR. CHAPMAN: Jenny, I have a question. First of all, I was happy to hear of the -- I guess appointment or hiring, I don't know what the correct term is.

But the hiring, I guess of Acting Deputy Administrator Ruihong Guo. It's great to see a familiar face in that role in this transition period.

But can you go through a little bit the process of finding a permanent Deputy Administrator? And what that looks like?

DR. TUCKER: Sure. So I can talk through sort of the generalized process of how this works.

The NOP Deputy Administrator position

is what's called a career senior executive service position. That's another acronym, SES. SES stands for senior executive service.

So I'm going to now use SES. So SES, career SES positions are -- go through a very structured and lots of procedures associated with that kind of hiring process.

So what will happen is that generally for SES, career SES positions, they will be announced on a website called USAJOBS. So you can just type into Google, USAJOBS.

And it will put the job announcement out there. You can go out into USAJOBS now and search for SES and it will come up with all the SES positions across federal agencies.

That announcement will include a job description. It will also include what's called executive qualifications.

Those are sort of five categories of executive qualifications that anyone applying for the SES must meet. And then there are also a -- generally a set of technical qualifications.

So those are specialized sort of technical experience that one needs for the job. So, that application window is also set by regulation in terms of how long the position must be open.

Applications will come in. They are then reviewed by an initial panel. And then they go through a hiring manager process that involves interviews.

The process can take a while. So, we're -- it's about usually somewhere between six to nine months. Which is why we have an Acting Deputy Administrator.

So generally, if you're going to have a vacancy at the SES level, they like to put in temporarily another SES. So somebody who's already in the SES corps into the position during that hiring period to provide that continuity.

Does that --

MR. CHAPMAN: Yes. Thank you. All right. I'm not seeing any more questions. Jenny, thank you so much for --

MR. MORTENSEN: I have one more question.

MR. CHAPMAN: Oh, I'm sorry. Dave, go ahead.

MR. MORTENSEN: As a university person I get involved in a lot of searches, job searches that is. And I'm curious, who appoints the search committee?

DR. TUCKER: Who appoints the search committee? Okay. So, initially the way SES hiring works, and this is all on the OPM website.

So if you're interested in how this works, the OPM, which stands for Office of Personnel Management. Sorry, another acronym there.

Office of Personnel Management is the office that dictates how this kind of hiring happens. How all federal hiring happens.

And so there is a screening process that involves other SESs in different agencies that review the applications. Because they're interested not only in technically are you able

to do this job, but do you have the skills and the executive qualifications to be in the corps itself, the senior executive corps itself?

So, there will be review panels of folks outside the agency at the SES level that will review applications. And then the panel within the agency to do the interviews is selected by the Administrator's office.

MR. MORTENSEN: The Secretary --

DR. TUCKER: So right now Bruce is -- Bruce Summers is the Acting Administrator.

MR. MORTENSEN: Okay.

DR. TUCKER: And so he would be the one that would convene that panel generally.

MR. MORTENSEN: Um-hum. Okay. Thanks.

MR. CHAPMAN: All right. Thank you Jenny very much for your time and comments. We'll now move on the agenda to the NOSB report.

So I'll try to keep it brief. But as I was writing this up last night, I realized I kept going on and on.

But I am what separates us from break. So, I will try to keep it brief.

(Laughter.)

MR. CHAPMAN: This is our first meeting back in Florida after a long time. And I'm happy to be here.

Florida is home to -- Jenny kind of stole some of my fire with her love of agricultural statistics. But, home to over 450 certified operations, and one that she didn't mention, 72 million dollars of sales from organic farmers and ranchers.

In April I started our meeting then talking about the weighty issues we have on our work agenda. Most of those still remain. And we now have several more.

The organic community has come far over the years. And yet we continue to struggle with the issues that affected us from the very earliest days.

With concerns over integrity, disputes over standard setting, regional differences that

come consider shortcutting, or diminishing their view of what organic is. Even the areas where we agree, we continue to struggle with working within the confines of a federal administration in dealing with various regulatory hurdles that that entails.

When I get discouraged by the challenges we face, I find reassurances in looking back and taking stock of how far we've actually come. Organic has gone from a fringe program at the USDA to one of the most prominent and public programs of the AMS.

And while we still struggle to get the appropriate funding and staffing to support the system, it's still far better than where we started. I'm heartened by the progress of our discussions. And that we've moved beyond blunt topics.

For example, the exclusion of GMOs to more nuanced topics like discussing specific genetic methods that are prohibited. And while nuanced topics are no easier than the blunt ones,

it's still progress that the conversations have moved along.

The organic community has always been made up of a patchwork of different folks motivated for different reasons, coming together for a common cause around an alternative path for organic -- for agricultural production and consumption.

This path has multiple aspirations. And it's difficult at times to balance these multiple aspirations when pulled in different directions.

Some view this is as dysfunction. I view this as a product of a passionate and engaged diverse community.

The very attribute that makes a community so resilient that it continues to bring farmers and consumers together, growing the organic movement and marketplace.

Back in April I also asked for the public's patience during this time of transition of administrations. And unfortunately I will

need to make that same ask today.

Six months after our meeting in April, we do have a Secretary of Agriculture now, a Deputy Secretary and an Undersecretary.

But we're still working with an Acting AMS Administrator. And as everyone is aware, with Miles's retirement, we now have an Acting Deputy Administrator of the NOP as well.

I'd be remiss if I did not say that I missed Miles. Although I do enjoy Jenny and Paul's company up here.

He was a strong advocate for organic within the USDA. And was critical to allow the progress I mentioned earlier.

However, Miles's legacy lives on. Especially in the strong staff that he recruited during his tenure, like folks like Jenny and Paul, Lisa, Michelle, and Devin. And with them we'll continue to be in good hands.

I also look forward to working with the new Acting Administrator, Ruihong Guo. And continuing to make progress on our work agenda.

We have 13 and a half hours dedicated to public comment. I'm not going to go into the stats, because again, Jenny loves stats as much as I do. And you saw them earlier.

But from the numbers you can tell, we have a very engaged public. And we appreciate and value those comments. I'm always impressed with the range and thoughtfulness of the comments we receive.

I also want to welcome my fellow NOSB family members. And that's what you guys feel like these days, like family members. While you may not always agree with your family, you've still got to love them.

Your service and time commitment is amazing. And I thank you for your thoughtful engagement, careful reflection, and respectful debate.

Your commitment to the organic community is invaluable. And I thank you for your countless hours, unpaid, away from your farms, your businesses, your research, away from

your students and colleagues, and most importantly, time away from your family.

With that I'm going to move onto some housekeeping items. And first off, I'd like to review the NOSB conflict of interest policy in accordance with our policy and procedures manual.

NOSB members are classified as representatives under the Federal Advisory Committee Act. And each representative is appointed to articulate view points and interests of a particular interest group.

The Organic Food Production Act prescribes these interest groups, which include farmers and growers, handlers and certifiers, environmentalists, conservationists, scientists, consumers and public interest groups, and retailers.

As such, NOSB members are not expected to provide independent expert advice, but rather advice based on the interest of the group served. NOSB members represent interests of a particular group such as many of the -- as such, sorry.

It's a flip flop of words there.

As such, many of the interests are acceptable interests. An interest is acceptable if carried out on behalf of the represented group. And if the Board member receives no disproportionate benefit from expressing the interest.

True conflicts of interest arise when an interest one, directly or disproportionately benefits you or a person associated with that member; or two, could impair the objectivity of the member in representing their group; or three, has the potential to create an unfair competitive advantage.

The appearance of a personal conflict or loss in partiality while not a true conflict, must also be considered when conducting NOSB business.

Once discussion documents and proposals are posted for public comment, each NOSB member is to review the documents across outside committees and research any potential

conflicts of interest due to the organizational affiliations and relationships.

Prior to the meeting, the program provides a matrix, which is now being displayed, to all NOSB members that lists the items being considered at the meeting. Members use this matrix to disclose conflicts of interest and for us to reference for any recusals when voting on items.

If an individual is unsure if they have a conflict of interest, then the question is posed to the NOP's DFO. And working with the USDA Office of Ethics as needed, will make a determination about whether a conflict of interest exists.

The matrix is not being displayed. And as you can see, we have no recusals at this time.

If we were to have recusals, we would remind the Board members at the start of each subcommittee section of debate. However, given there is no recusals, we will forego that

formality.

If Board members wish to disclose any information about their interests, they're welcome to do so at this time. This is a general request and voluntary.

And no specific statements are required. Does anyone wish to make a statement?

(No audible response.)

MR. CHAPMAN: Thank you. Moving on, I also ask folks to be courteous to their neighbors, public commenters and to the Board. Please silence your phones, silence your computers, and take any conversations outside into the hallway or the foyer.

We have stanchions placed up here. And we ask the public to refrain from coming behind the Board as it is distracting to the Board members listening to testimony or deliberating on issues.

This is not to deter from public interaction with individual members during the break. And I encourage that interaction where

possible.

I remind the public that photography and the use of other media is allowed at this public meeting. And I ask for those that use those devices to be respectful of the Board and public commenters, and not to be distracting.

If individuals become disruptive at this meeting, they will be warned. If the disruptions continue, those individuals will be asked to leave.

I do plan on running a tight ship with a little bit of humor now and then. And my only ask is that you laugh at all my jokes.

(Laughter.)

MR. CHAPMAN: Yes. It worked this time. Because the last time I did that, and no one laughed.

(Laughter.)

MR. CHAPMAN: In fact I had already written something in here about man, no one laughed at that this time. All right. Very good. People learn.

All right. A few announcements of activities surrounding us. First of all, if you haven't realized, today is Halloween.

So if you brought your children with you, and perhaps a spouse or other responsible guardian, there's a downtown trick or treat event from 11:00 to 2:00 p.m. today.

And I know most folks will want to stay in this room for whatever ghostly haunts are in store for us on our agenda. But as a father of young children, I wanted to throw that out there for all the parents that are in the audience.

Also today during lunch, some members of the Keep Soil in Organic movement, will be holding a rally offsite. They will be meeting, as I understand, in the parking lot during lunch to walk over to their event location. Which is, I think, about a five minute walk.

More information -- I believe more information about that is available outside. And if you're interested in that, I encourage you to

find Dave Chapman.

Lastly, QCS is generously hosting a reception at the Intuition Brewery tomorrow night after the meeting. I can think of no better motivation to get done on time than beer.

That's it for me. I think we're ready for a break. And then after that we'll start back with our expert panel on imports.

Thank you everybody. We're in recess until 10:30.

(Whereupon, the above-entitled matter went off the record at 10:09 a.m. and resumed at 10:40 a.m.)

MR. CHAPMAN: All right, we're going to get started here. Thank you, everyone, for getting quiet and finding your seats. We're going to start back up with our panel of experts on federal agencies and imports, and I'm going to hand it over to Dr. Paul Lewis for an introduction.

DR. LEWIS: Thank you, Tom, and thank you to the members of the Board. Last August,

the National Organic Program provided a charge or work agenda to the National Organic Standards Board on improving oversight of imported organic products. The Agricultural Marketing Service National Organic Program, as background, determined that certain shipments of corn and soy shipped from Turkey were fraudulently labeled as organic.

As Dr. Tucker spoke about earlier this morning, AMSNOP has taken steps to deter additional fraudulent shipments and to protect the integrity of the organic system. As part of that work agenda item from last August, the NOP requests that the National Organic Standards Board provide recommendations on improving the oversight and control procedures used by AMSNOP certifiers and operations to verify organic claims for imported organic products. Today's panel is really the beginning of an opportunity of a dialogue for federal perspectives on the import of organic products.

We're excited, this morning, to bring

together several players from the federal community to provide a background for the Board, as part of its beginning work dealing with this important issue, in terms of maintaining the integrity of imported organic commodities.

We have four panel members this morning. I want to introduce them to you. First is Michael Durando, who is from the USDA's Agricultural Marketing Service Marketing Order and Agreement Division. Mr. Durando will open the panel discussion, providing an overview from a federal perspective.

Michael serves USDA's director of the Marketing Order and Agreement Division in this capacity. He oversees the administration of numerous regulatory programs, including federal marketing orders for fruits, vegetables, and specialty crops and related programs. Second, we have Mr. Daniel Collier, from the Department of Homeland Security Customs and Border Protection. Mr. Collier is an international trade specialist in the Office of Trade. His focus is on

interacting with other U.S. government agencies to effectively carry out various public health, safety, and trade enforcement missions.

Previously, he served as a presidential management fellow at the Department of Homeland Security. Third, we have Mr. Matthew Farmer, from USDA's Animal and Plant Health Inspection Service, the Plant Protection and Quarantine Program. Mr. Farmer is the assistant director in that office for the Quarantine Policy Analysis and Support Division. He has previous experience with the Department of Homeland Security Customs and Border Protection.

He also worked at U.S. Forest Service, Department of Justice, and he's a graduate of the State University of New York College of Environmental Science and Forestry in Syracuse, where he earned dual degrees in biology and natural resource management. The first three panelists will really help set the stage, in terms of what's happening, really, in the broader federal community. Then finally, Dr. Jenny

Tucker, as you all know, is the associate administrator of the USDA Agricultural Marketing Service with the National Organic Program, really helps set the stage in terms of what the charge is for the Board and to help set the stage in terms of opening the questions and a dialogue in this area. I'd like to first turn to Mr. Durando.

MR. CHAPMAN: Just for the Board, we're going to run through the four presentations, and then open it up to question and answer after.

MR. DURANDO: Good morning, everybody. Let's get the slides adjusted here. Paul, thank you very much for that introduction. Good morning, Mr. Chairman. Good morning, members of the National Organic Standards Board. Good morning, members of the audience.

I want to thank our good colleagues at the National Organic Program for the invitation to be here today and attempt to shed a little bit of light, begin to build awareness among the

members of the Board here, about importation of agricultural products and their regulation from a marketing perspective, not from a phytosanitary perspective, which Matt will certainly be addressing that in the course of his presentation. A couple of key points I'd like to cover today.

First of all, pointing out how, through work with CBP and department wide and with the system that we have built within the Marketing Order and Agreement Division, how we have improved government services through cross-departmental use of information technology, and then to leave you with a bit of a sense of the high degree of complexity of agricultural import regulations.

There are a lot of moving parts. As soon as one gets into it, you begin to learn that you didn't know what you didn't know, and you finally discover new aspects of it each time you make a step forward.

Going to discuss a little bit of what

we've done in my division, in terms of regulating agricultural imports, specific commodities, that is, and a system we built in our experience with that and what those outcomes are. Finally, I'll leave you with some thoughts about my perspective of what are the critical elements for success for a program like mine, and perhaps like the National Organic Program, in terms of moving forward. What do I think were the key components that allowed us to be successful within the Specialty Crops Program area of AMS with the build and implementation of our system?

Jenny Tucker has already thrown out some acronyms, and we appreciate her spending the time to walk you through and remind you what all of these mean. I've put them up here again. I think repetition is good. You're going to here, today, ITDS and ACE. They refer to the International Trade Data System. This is really the whole project that was worked on for, actually, several decades.

Daniel Collier, from CBP, will be

talking a lot more about that. Within ITDS is the actual system, called the Automated Commercial Environment. A little bit redundant, but it's a system that's owned by Customs and Border Protection. This whole effort began with an authorization by Congress, in 1993, of a very specific statute, designed to begin to improve the efficiency of agricultural importing into this country -- pardon me, all importing, not just agricultural -- provides a single centralized access point for government and the trade community. They call it the single-window approach. Fifteen to twenty years to build out. I guess the most important point of this slide is 47 partner government agencies -- you'll hear us refer, potentially, to the term PGA or PGAs.

That's a partner government agency. These are all the folks around the federal government who are working across departments, and really throughout, to capitalize on this system and, in essence, improve the integrity of and, if you will, the Homeland Security of the

country. A lot of this is through economic security or phytosanitary security, in the case of agricultural products.

A lot of advantages to this system. You've got coordination among 47 agencies, like we've never had before, streamlined industry compliance, real-time decision making, and long-term reduced costs. Definitely, we're moving out of the paper business. Any of these systems -- and, indeed, as the National Organic Program contemplates participating in ACE, potentially building a system that interacts with it, it's important to understand there are partnerships involved, and there's a deliberate governance system, which is very common in the information technology community. The ITDS board of directors, I serve as the representative for the Agricultural Marketing Service to the ITDS board. That's comprised of the 47 PGAs.

It really oversaw the development and build of the ACE system, and then continues to oversee its ongoing development, as it will

change over time. There's a second entity involved in governance, called the Border Interagency Executive Council, or the BIEC. It focuses, really, on operations and maintenance, and then ongoing modernization and enhancements.

For those of us who are already in ACE, with message sets and our executing, if you will, there is a need, from time to time, to build improvements or enhancements. Also, if a regulation changes, sometimes it can be a couple of words in a regulation, it may mean that one has to go in, change a message set. That requires time and investment and overall efforts. The BIEC, we're in a process right now where it's really trying to focus on how to prioritize the needs of 47 agencies and who gets in line first when changes need to be made. I've talked about the different departments. Agriculture is one, but you can just see, in that blue box, how many other departments around the government are involved.

The importation into this country of

goods and services is a very, very complex effort. It's wrong to ever assume that our agency, AMS, for example, is the only entity looking at a shipment coming in. There are probably, on average, another 10 or 15 agencies doing their jobs, pretty much out of the limelight, to ensure that product or that good or service actually belongs in this country.

I'm going to drill down, now, and focus in. Within USDA, we're one department, and within that, we have four PGAs, USDA AMS, that's the agency within which I serve. Animal and Plant Health Inspection Service is represented by Matt Farmer today and has a very robust system they're working on and interacts very closely with ACE. FSIS is the Food Safety Inspection Service. They're looking at a lot of meat and livestock imports. They have a system that they've built and have been in play now for quite some time. They are a major player within USDA. Then lastly, the Foreign Agricultural Service, which is primarily a data user.

They don't really have control capability at the border, but they use the data that comes from ACE, really, for statistical purposes, reporting purposes, and evaluation of foreign countries' activities. Going to drill, now, from USDA down into AMS.

We're now into AMS, one of 17 agencies within the U.S. Department of Agriculture. There are really five different entities within AMS that have a stake in the utilization of ACE. They are the Marketing Orders and Agreements Division, where I reside, and we'll talk more about that in a minute, in terms of regulating imports of 14 different commodities.

Specialty Crops Inspection actually handles the inspection of all of those commodities that my division regulates. We have a Shell Egg Quality Assessment program that monitors the importation of all shell egg and shell egg products for very specific health and safety purposes. We have two other entities. Our Market News Division's throughout AMS, a very

robust reporting system of market news, not just in specialty crops, but in livestock and the other commodity sectors. They are a data user.

Then the Research and Promotion programs, which, unlike Marketing Orders, don't necessarily regulate quality and standards and minimum grade, but they do provide opportunities for generic research and promotion activities for domestic industries.

They pull a tremendous amount of data from ACE for purposes of enforcing assessment collections against imports. You can really group the five entities into two broad categories, one the interactive users, which would be the three on the left, and then the second is the data users, the two on the right.

Data users, they don't need to build message sets. There is a thing called an ACE portal. It's a computer window, if you will. You have to have a clearance to get on. Within our agencies, those Market News and those Research and Promotion program personnel are able

to log on to that portal and pull the data down that they need, in the format they need, and then use it within their systems for compliance purposes. On the interactive users, that's where we actually build out a system that interacts and talks with ACE. We have messages going back and forth because, as you'll see in a minute, we actually have a role in deciding whether, in my division, whether products actually enter this country or not.

What is it that the Marketing Order and Agreement Division does? It does a lot of things, but among them, there's what we call Section 8(e), Import Regulations. Without getting into the weeds, there's a very specific statute, the Agricultural Marketing Agreement Act of 1937, that authorizes these things called marketing orders.

Within that act is a very specific provision that says whenever a marketing order is in effect for a specific commodity -- maybe it is citrus, maybe it is tomatoes, maybe it's table

grapes -- then any product imported into the United States during that marketing period must meet the same minimum standards -- they can be quality, grade, size or maturity standards -- that are applied to domestic producers. This relates to 14 different commodities. In essence, it says if you want to import these products in, then you're going to have to have the same inspection upon entry into the United States as is required of domestic producers or handlers at shipping point, before they ship product into the market within the United States, or even for export purposes.

Going back to, I think Jenny may have used a grapefruit example, maybe, in one of her slides, there is a citrus marketing order that regulates grapefruit. In Florida, grapefruit must meet certain minimum sizes, grade, quality standards.

During that time period, any grapefruit coming into the United States from South America or South Africa or anywhere else

around the world, prior to being released at the border, it must meet those same standards and be inspected to prove that is the case. Approximately 250,000 to 350,000 entries per year into the United States just within those 14 commodities that we're talking about that my division oversees. An entry is any, what we call a lot. I'm kind of getting into Daniel's area a bit, but typically has a customs entry number. A lot can be a shipment of one pallet of product. A lot could be a shipment of ten shipboard containers, with maybe 20,000 or 30,000 boxes of product. It really depends on how the broker categorizes the load.

These are the 14 commodities, to give you a little bit of perspective as we move through and into this case study. These are the 14 commodities that my division regulates from an import standpoint.

None of these commodities get into the United States, either on a year-round basis, or some of them are on a cyclical seasonal basis,

without my division ensuring that they are inspected by federal or federal state personnel to meet the same standards that American producers and American shippers have to meet.

A little quick picture of before ACE and after ACE. I'm going to give Daniel license to correct me if I go a little bit wrong on this. I think we have it nailed down. I was trying to put it in just plain language and what does it mean for us, in the government, and perhaps for all of you in business out there. Before ACE, all importers were basically working with paper. They had reams of paper that they were filing with CBP, and really, going way back before, there would be these dossiers, if you will, of paper that would travel with loads, either air freight -- air, land, sea, whatever it would be -- that would be physically checked at the border.

Ultimately, when a product entered, there was a requirement that we had internally called a stamp and fax, where the entity would be

notified -- if customs got down to that level in the weeds, they would remind the importer that you need to get an inspection by AMS to ensure that it meets the right minimum standards.

Then it was up to that -- before crossing, that broker to then, in essence, make contact with our inspection personnel and show proof of that, that they provided a heads up that they were coming. This was all with paper and with faxes and phone calls and everything else. Then we would conduct an inspection. Then there were paper inspection certificates that the shipper or the owner of that product on site would hang on to. Then probably three or four copies of this paper document would go different places, and they would be held in files by our inspection division, and then ultimately, if we wanted to reconcile entries with inspections, we had to somehow obtain, in my division, thousands, tens of thousands, several hundred thousand paper inspections and start going through those one by one and match those up against CBP data.

Creates real difficulty trying to reconcile paper certificates with import data. This affected timeliness of enforcement. In essence, if we did not respond to Customs and Border Protection within 30 days of entry, it was automatically presumed by CBP that the load met -- they had to let it go and basically release the exporter from any further reliability.

We relied on a weekly data transfer from CBP to us via a CD. Literally, a CD with data on it would be couriered over from CBP to AMS, or mailed. We would get that. We'd load it into our system and start building our spreadsheets and attempt to reconcile. The long and the short of it is it really affected the visibility of entries. With all due respect, I'm not sure CBP's data was as accurate then as it is today. We'll talk about after ACE. Definitely, at our end, we did not have good visibility of every single entry. There's no way we could. We didn't have the manpower and certainly couldn't line that up with all of the inspection

certificates.

After ACE, which actually was, I guess, built out and in full production, we could say, by December 2016, things changed dramatically. The paper went away. Importers and their brokers were filing electronically, which, upon filing, would generate automatically an inspection request to AMS. In other words, they would go into the single window, as they call it, and there are all the different datasets that the importer or the broker would have to enter.

As soon as it was identified as one of the 14 commodities that we regulate, and it was during the time of year when it needed to be regulated, it would generate an automatic signal to our inspection division, saying heads up, you've got this inspection coming, and it's going to be arriving, and it's going to need to be inspected in Los Angeles or in Phoenix or in Denver or in Philadelphia or wherever. The inspection would be conducted, and then that

inspection data is electronically transmitted, in an automated fashion, back to my division, and ultimately, then, on a very real-time basis, what's really happening is we're getting inspection data back on one side -- and you'll see this in a minute -- and then on the other, we're getting the full load of data from CBP.

The systems are reconciling, and what we get are the flags, then, of who hasn't fulfilled their inspection requirement. It's a real-time inspection system. What's important is with this new system, there really isn't this 30-day default release by CBP. AMS, through my division, has what we call hold-intact authority.

Daniel can elaborate on the two different types of authority. Hold-intact authority means that product is not released, legally, from custody of CBP, and the exporter is not released from liability, until we've determined that it meets. We're one of potentially up to 47 agencies that may have something to say about that shipment. With this

new system, with ACE, most of our entries are released within 24 hours. Then very, very importantly, we have visibility of all entries, now, for our regulated products. How do we do this? We do this with something called CEMS, or the Compliance Enforcement Management System. Basically, it works this way.

Again, I'm presenting this as a case study because you might be thinking how might this be applicable to the regulation or the oversight of organic imports, or those that have been certified as organic, in ensuring that they retain that integrity? It starts out here.

The importer files in ACE, says I'm bringing in a load of kumquats or grapefruit or tomatoes or whatever. Immediately, ACE transmits data from its window or from its system there into CEMS. The next thing that happens is CEMS, as I mentioned, automatically generates an inspection request to our inspection division.

It doesn't go to a centralized division office. It, on an automated basis,

sends a request to, I believe we've got more than 30 or 40 inspection offices around the country. It automatically decides which office needs to receive that request, depending on the final destination of that shipment. The inspection office then, with the exporter and the shipper, arranges for the inspection and conducts it, and the inspection certificate says this load passed. That data is automatically, then, transmitted back to CEMS, which then looks at it and says this is inspected, we no longer have an interest in it.

So automatically, it goes back and it tells CBP that we release our hold, and it's cleared to proceed. It doesn't mean that shipment is cleared to proceed -- that's CBP's final decision. We're saying from AMS Marketing Order standpoint, it's cleared. We no longer have an interest. Obviously, if it doesn't clear, then CBP doesn't get a signal yet from our system, and it knows that there's a problem.

It's really no questions asked. It

will not be cleared until AMS is able to reconcile that. CEMS development. How do we build the system? Again, this is important to think about as the National Organic Program contemplates how it wants to deal with the import situation that it has, but it does take time. For us, it took three years to -- actually, we're probably about seven or eight years in conceiving the concept and pushing for the support, and it wasn't until the ACE build really got traction, in the last four years of its build, but it took us three years, pretty much start to finish, to build out our system, and about $3 million, so it takes money. The resources included our own information technology service.

That's our own in-house IT shop of developers and other folks who really work with the contractor's. We had a team of contractors that we retained, as is very common in most IT projects, to build out the system. You've heard the term message sets. We built nine different message sets that are interactive with CBP for

the different commodities.

Some of you might be asking wait a minute; you have 14 commodities. Some of the commodities -- more than one commodity can fit into a message set, without going any further into that, so don't let those numbers throw you. What were the results? The results are important. We increased our visibility of entries from about 500 lots per week to 5,000 entries per week. That's a ten-fold increase. This is very significant for us. The compliance case investigation and average closing time was reduced from about three months, on average, under the before ACE situation, to down to three weeks, on an average, for after ACE and once we built out CEMS. Some of these cases, we have to track them for a while if they have to be re-exported.

We also have provisions in our regulations that allow, rather than re-exporting, they can either destroy the product, they can ship it to food banks. They can also put it to

other non-competitive uses. For example, they can send it to a processor or those types of things. We're still piloting our system, and there's some regulatory reasons for that.

We haven't finalized a particular rulemaking yet. It will happen. With probably about 5 percent or so, maybe 5 to 10 percent of our imports coming in under our pilot program right now, we've opened and closed 1,200 compliance cases just since July 2017. You can see it's a very robust system, with strong capability. It gives us, finally, full enforcement capability for our Section 8(e) important regulations. We had the responsibility before, but the technology just wasn't there. You couldn't afford the hundreds of additional employees to try to do that on a manual basis. Very importantly, it leveled the playing field for American producers. An imported product cannot compete unfairly with them on an economic standpoint.

Then lastly, and certainly very, very

importantly, assured quality for American consumers. They were not subjected to potentially substandard product coming into the country at a time when they're demanding and wanting a consistently high and standard product quality of a commodity. Critical elements for success.

No. 1, you need the legal authority -- in our case, the legal authority to regulate imports and hold them to a standard and have the ability to enforce compliance on that product. Secondly, a clear process of that authority that's supported by regulations which is clearly spelled out. In our regs, where we actually clearly define that entry in the United States is considered to be -- or defined as release from custody of Customs and Border Protection. You need the funding for system development, operations, and maintenance, the staff resources for compliance enforcement. Actually, with our new system, one would think you're going to streamline; you don't need as many people.

We're actually going to have to add a number of additional people because of the compliance caseload, but the benefit to the Department, the industries, and the American people is we're actually enforcing compliance of these regulations.

Then last but not least, a lot of communication and outreach to stakeholders. We've had to partner with major brokers at various ports of entry to develop, test, and pilot our system. You need to have a constructive working relationship with them, not an adversarial relationship. With that, I say thank you. We'll remain available for questions and look forward to the other panelists' contributions. Paul, thank you.

DR. LEWIS: Thank you, Michael. Let's give it a moment for Michelle to pull up Daniel's slides. Again, Daniel Collier, from DHS. Again, this is part of getting the broader federal perspective Michael spoke about, in terms of interacting with the federal partners. Daniel

will be adding to that and focusing more in terms of his role with the Department of Homeland Security.

MR. COLLIER: Thank you very much. Is this good volume? I want to make sure I'm not leaning in too far into the mic. Thanks, again, very much, Mike. That was an excellent presentation. I kept thinking, during his presentation, that there were things that I wanted to talk more about because he touches on things that I want to talk about. Hopefully, there won't be too much overlap between what I discuss and what he discussed.

I'm going to try to provide more of a broader picture of what we call the single-window project implementation that included the agricultural marketing service, USDA, as a whole, and dozens of other agencies that interact with ACE in a variety of ways, which Mike touched on, the data user role versus the data -- I'm sorry, the data user role and the enforcement role that other agencies have upon entry in the United

States. There's a wide variety of that throughout the federal government. Just to get started and provide a general overview of ITDS, which is, as Mike mentioned, the International Trade Data System, which is the large project into which the development of the Automated Commercial Environment, ACE, falls into.

ACE has been around for quite a while, and it is the successor to our legacy system, the Automated Commercial System, ACS, which, as ACE has been developed, we have been phasing out ACS. That transition is not yet complete, so ACS still exists in the background, behind ACE, but ACE is the public facing system that both the federal agencies rely on and our partner government agencies, the PGAs, rely on, and what the trade community uses, our brokers, importers, etc., to file data, file entry information, manifest information, entry summary information into ACE, and then we, as the government, process it on our end.

The timeline that we have worked with

for the past couple years officially ended in December of 2016, last year, which was the implementation of the core ACE functionality, which involves the essential functions that each of our 47 partner government agencies undertake for their various trade enforcement missions. That deadline was set by the previous administration, via executive order, which was issued in February of 2014, or maybe that was 2012, excuse me. Now we're in what we call the post-core environment.

We are working with our federal partners, our trade community partners, and within our own agency to prioritize enhancements to the system, based on requests from the trade community, based on regulatory needs by other agencies, under which any future organic product work would fall into would be this what we call post-core. We've completed Core A.

It undertakes the essential trade functions that we have been provided and we have implemented. But there's a lot of, not only

operations and maintenance work to be done in this post-2016, but there's also a lot of, what we call enhancements to be made to the system that are on behalf of our various stakeholders and partners. As Mike alluded to earlier, various federal agencies have, obviously, their own requirements for admissibility of imported goods into the country, whether that be agricultural requirements or requirements on behalf of the Environmental Protection Agency for ozone-depleting substances or pesticides or various vehicle engine requirements.

There's also the National Highway Traffic Safety Administration, NHTSA, which falls under the Department of Transportation, which has its own motor vehicle requirements for entry into the U.S. We also work with the Food and Drug Administration and the Center for Disease Control and Prevention.

Both of those agencies, which fall under the Department of Health and Human Services, have their own various requirements,

depending on the law that they're enforcing. Each of these agencies have personnel that their own personal accounts in ACE to access the system that is used now across the federal government.

We're now all working from the same system and are reviewing shipments, either through automated checks that are put in the system on behalf of each agency, or there's often manual review of forms that have not been automated, but actually scanned into the system as part of our document image system, which is a functionality available in ACE, where someone from CDC, for example, could go in and look, check out a form, try to make a determination of whether it's authentic.

If not, go back to the broker and request additional information, or they can reach out, they can contact CDP, either at the headquarters level, through the system, or can actually contact other agencies, as well, within the system, if they see something amiss, they want to have another agency take a second look at

something.

As I mentioned earlier, each agency has had its own forms, which then we have translated into each agency's own unique PGA message set. When we talk about PGA message set, each one is unique to each agency.

AMS has multiple message sets for its various requirements. Other agencies each have their own, as well. Those represent data elements that have been taken from forms that they've -- each agency used to require upon entry, that are now being submitted into a system that can now be analyzed and reviewed in a way that wasn't possible prior to the implementation of ACE. We've learned several things throughout this process that I will cover briefly here, the first of which is the will that's needed from a very high level of leadership in government to actually see this huge project through, to get close to 50 agencies together working toward a common goal.

That really accelerated with the

executive order that I mentioned earlier. As you can see here, the programming for ACE actually began in the early 2000s and has been an ongoing process for completion, which officially occurred at the end of last year.

In addition to political will and sort of a consensus among various federal agencies that we all have a common interest in pursuing the implementation and continual development of a single system, during that process, we've had to map out what each agency's legal authorities are and to make sure that legal authority, then, translates into what actually can be done by each agency in the system, so that data isn't be shared in a way that's not legal, to ensure that an agency that is able to -- has, actually, what we call border hold authority, is able to place holds on a shipment, either through CBP -- some agencies can request that CBP place a hold on their behalf. A select few are able to place holds on their own.

Other agencies, while they have --

technically, they have regulations that prevent goods from coming into the country, unless they meet certain requirements, don't necessarily have the explicit authority to place holds, or the personnel at the border to do so.

Not only are there varying legal authorities, but there's also the resource constraints that allow some agencies to have individuals working side by side with my APHIS colleagues and FDA colleagues and U.S. Fish and Wildlife Service at the ports of entry.

Other agencies don't have that sort of manpower, and thus rely heavily on us to do things on their behalf, or they are looking at things using their various ACE accounts, and then pursuing various things once they are released into U.S. commerce in various ways. This is just to say that the legal aspect for each agency has played a critical role in carving out each agency's role in ACE. As I mentioned, and this still continues to today, this project has had oversight in the highest levels of the U.S.

government.

So not only does monitoring occur at that level, but the heads of the agencies often meet frequently to discuss the progress of ACE, the extent to which various agencies are participating, areas where there may need to be improvement or additional attention is needed.

When talking about major enhancements, when talking about funding, as Mike mentioned earlier, the governance board structure that has been in existence throughout the development of ACE is still in place now, as we continue to work to reach consensus on a variety of issues.

That includes changes that need to be made in the system as a result of regulatory changes, whether that's statutory laws passed by Congress, or whether that's a regulatory change that an agency makes based on pre-existing statutory authority. We continue to prioritize the changes that are needed based on those requirements, and then from there, once that prioritization takes place, the resources have to

be allocated for development work, whether that's for major projects, or whether that's for tweaking a few things in the system, which we -- it's a term that's used as IT best practice, operations and maintenance. That leads into the stakeholder engagement. We work with several bodies within the trade community.

That includes our own federal advisory committee, Customs and Border Protection, used for all of our various trade-related missions, but also through the BIEC, the Border Interagency Executive Council, as its own external engagement committee, which is made up of members of the government and the trade community.

That gives them a regular chance to voice any concerns they have about using this system to make suggestions, and it gives us a chance to keep them apprised of any changes, system outages in ACE and things like that, so that we're continuing to try to stay on the same page, as the system continues to evolve. This just provides a recent timeline that includes the

December 2016 deadline and some various functionality deployments in the system that have occurred since then. In the system, as I mentioned before -- and I won't repeat much of what I said here, but each agency that obtained ACE accounts and merged into this system, each did its own, what we term pilot, which is just sort of a test of their own functionality in ACE.

For each one, once all of the IT development work was done in a testing environment, we worked with members of the trade community, which would have to file the data that is required by each agency, and conducted a pilot that was on a voluntary basis. We worked with the trade community on a pretty -- a close working relationship to test the submission of the PGA message set for each agency prior to what we call mandatory implementation of that message set.

That pilot process serves as a best practice for going forward for creation of future functionality. Just to reiterate some of the key

benefits for the other agencies -- and this speaks to what Mike was mentioning earlier about the savings of time and resources, the increased visibility of data, since we're all looking at the same system, the cross-communication among agencies within ACE, and the elimination of paper. Through this process, we've eliminated hundreds of forms, due to the translation of the data into message set data, which is filed for those entries that a given agency requires. This is just a quick overview of various benefits, not just for the government side, but for all those participating in the process.

Just some key lessons learned that we, I think, definitely, at CBP, but as probably a government, as a whole, is to, at the very beginning, really go through the process of figuring out what our end goal looks like at a pretty specific level, so that we all know what exactly we're working toward and to, throughout the process, continue to evaluate readiness, continue to look for problems that may exist,

identify them quickly, and to ensure that we're each -- not only within the government, but also the trade community, we're all working at relatively the same pace.

Once the deadline comes around, we're all at a point where we can then go make this a mandatory process, and we're all comfortable doing it. Then at the end, once it's done, looking back to try to see where things went right, see where things went wrong, look at what has to be done going forward. This just gives some information about how to access our website and find out additional information about ACE.

That also includes information about our oversight bodies, the other agencies we work with, subscriptions to various messaging services that we provide that send automatic notifications to those on the list for a wide variety of issues. That's it for me. Thank you.

DR. LEWIS: Thank you, Daniel. I'd like to now shift gears and turn to our colleague from the Animal and Plant Health Inspection

Service. As Jenny mentioned before, we have developed a memorandum of understanding between our office and Animal and Plant Health Inspection Service. With that, we're pleased to have Matthew Farmer talk about his work in this area from his respective organization.

MR. FARMER: That was an interesting way to start. Thank you to the Board and to NOP for inviting me to come speak to you today. My name is Matthew Farmer, and no, it's not a cover name for USDA that they just assign people that have to come to meetings. I work in Riverdale, Maryland, out of our D.C. office. I have a few topics we'd like to cover today, look at the APHIS mission and our safeguarding continuum model, some market access and regulatory process, also the inspection process, some initiatives we have going on in APHIS, and some resources.

Again, this USDA org chart, which was taken from the website on Saturday, absolutely, there will be changes. There has been changes to it already. If you look down in the lower

right-hand side, you see the undersecretary for marketing and regulatory programs, and you'll see AMS. Right below that, you'll see APHIS, or the Animal and Plant Health Inspection Service.

You'll also see GIPSA, or the grain and packers. I believe they're getting moved under AMS in the future. That's why that org chart's going to change. As you can see, it's a very robust org chart. We'll go into the APHIS mission. The Animal and Plant Health Inspection Service is a multi-faceted agency with a broad mission area that includes protecting and promoting U.S. agriculture health, regulating genetically engineered organisms, administering the Animal Welfare Act, and carrying out wildlife damage management activities. These efforts support the overall mission of USDA, which is to protect and promote food, agriculture, natural resources, and related issues. Specifically, within APHIS we cover the animal, plant -- the Plant Protection Act of 2000 and the Animal Protection Act of 2001.

Those are promulgated in 7 CFR for the plant side and 9 CFR for the animal side. We also do work with Fish and Wildlife on some 50 CFR issues. There's the breakdown of what APHIS looks like, animal care, BRS, or the Bio Regulatory Service, international service, plant protection and quarantine is where I reside, veterinary service and wildlife service. I mentioned the safeguarding continuum.

It's more of a safeguarding model. Another way to think about it is the layers of protection APHIS employs to keep invasive plant pests and animal disease out of the United States. We begin at the top of the circle. There's the offshore programs. Again, there's no better way to keep dangerous or invasive pests out than to stop them in the countries where they're at. We move on to the permitting, which a permit basically advises an importer what the requirements are to bring something into the United States, what our APHIS requirements are. It spells those out. The purple box is the

border and port inspection. That's the box that I write policy for.

To explain that, the events of September 11, 2001 created the Department of Homeland Security Customers and Border Protection. During that, in March 1, 2003, the plant protection and quarantine officers at our ports of entry were transferred -- 2,300 inspectors were transferred from USDA to the newly created department, where they reside today.

The way that we fund those inspections at our ports of entry is through APHIS user fees. Those are collected monies to pay for the inspections of the importations. I'll move on quickly. We also do have a pest identification service, and we work with the Smithsonian, but we do have identifiers located throughout the country. We have a Smuggling Interdiction and Trade Compliance group. That's the SITC box. We also have new pest detection and response. What that is, that's our surveillance network here in

the U.S. We survey for various pests. The last one is our pest eradication and management. Let me make this point. APHIS is an emergency agency.

That means 24/7, we have to respond to outbreaks, whether it be a fruit fly outbreak in Florida, which has seen a few of those, likewise in California, any of our citrus producing -- citrus greening, which is currently marching westward toward California.

These are some of the invasive pests that have made it in. Moving along, so that we can definitely get some questions in. The market access and regulatory approval process. I outlined the steps. I'll go through them pretty quickly, but I will be here for the questions from the panel, but also from the audience.

Afterwards, I will be available for any questions regarding any of this. There's the pre-petition planning, which is does the U.S. have a market for or that consumers would produce. Some of those questions are asked.

Going through the process, we have the petition process, where we have to be engaged by the national plant protection organization of another country to gain market access for that commodity. They have to request of the United States, specifically APHIS, to enter a commodity to the United States. In turn, we work with them. They would provide a host pest list.

We would review that through our Center for Plant Health, Science, and Technology, out of Raleigh. They would work through and perform a pest risk analysis. Out of that, there may be mitigations to allow the entry of that commodity to come into the United States, whether that's in the operational work plan, whether it's a systems approach or IPM, or integrated pest management, or some other mitigation, such as chemical treatment or, for mangoes out of Brazil, hot water dipping or irradiation.

Again, I'm going to cover this really quickly because I know you did not come here to talk about rulemaking. But I did want to explain

an interesting thing that happened in 2007. The standard process of rulemaking takes several years. We moved to the notice based, which streamlines it, shortens the time frame, but there are some requirements. Those requirements, the commodity would have to be subject to inspection, has to come from a designated pest-free area. There would be some phytosanitary requirements, and it's for commercial entry only. I did put up there, if you want to look, it's 319.56-4 for the full criteria.

The steps after regulatory approval is how we operationally figure that out for entry. Those, we have manuals that Customs and Border Protection agriculture specialists use at our ports of entry. Again, we have to define those conditions for entry in our permit and, ultimately, an operational work plan with the country of origin.

Additionally, we do have to inform customs of that, of the requirements, so that --

there may be cutting requirements and other operational concerns that customs would have. The key there is it also lends us to opening up a pre-clearance plan if the country so chooses to have that done offshore. I did put this up there. This is one of the steps is our phytosanitary treatment. It's our operational guide for selecting and conducting quarantine treatments. The procedures and treatment schedules in this manual, they're administratively authorized for APHIS to prevent the movement of agriculture pests into or within the United States. Listed treatments include chemical treatments, such as fumigation with methyl bromide, and non-chemical treatments with heat, cold, or irradiation.

Quickly, I put up the agriculture quarantine process. I believe it was covered earlier by Dr. Tucker. The key question is can this commodity come in? You're an importer, and you want to bring this commodity in. There's steps that you can go to. One of them is

obtaining a broker. The broker understands the entry process and how to look that up.

But you can also go to the APHIS website. There's the fruit and vegetable import requirements, or FAVIR. I'll have a link to that later on, in one or two more slides. There's certain entry requirements for a commodity, notice of arrival, import permit. It may or may not have a phytosanitary certificate requirement. There's keys. The inspection of a commodity was covered. A pest is found. There's only certain things that can happen to that shipment. I did want to clarify this. If there is a pest that is not known to occur in the United States, and it's deemed invasive, we only have three options. You can ultimately destroy the shipment. The other option would be if there is a treatment available out of the treatment manual.

The third option is to re-export to the country of origin. I will add that CBP ag specialists -- this is kind of a neat fact -- submit, yearly, over 50,000 pests on imported

commodities. That ranges up to 90,000. Year to year, it's just an amazing amount of work that CBP does on APHIS's behalf. I wanted to put this picture up there. This is, again, the CBP ag specialist.

This is out of the Miami port of entry, air cargo. This was close -- it was in between Mother's Day and Valentine's Day, the two biggest days that they receive shipments, but amazing amount of shipments that they receive. They're actively looking for pests on the flowers. Some ongoing initiatives in the future. Again, I won't belabor the point, but the ACE ITDS. We're working internally, within APHIS, for animal care, BRS, PPQ, and VS. We're also looking forward. We've implemented, for our Quarantine 37, or propagative material that's imported, the risk-based sampling at our plant inspection stations. That's been a resounding success.

We're looking at implementation of risk-based sampling in the Quarantine 56, which

is fruits and vegetables. In the coming years, we will have that availability. That's similar to what FDA employs currently and what the Australians are employing. We will look at streamlining our permits. We're currently building a system that's in development to also engage ACE. That's our e-file.

That's being worked on. Additionally, that's not up there, we're working on government-to-government certifications. That's for our phytosanitary and sanitary certificates. That's government-to-government validation and verification of the permit for entry. That will be a big help to speeding and facilitating trade. I mentioned some resources. A great one is the APHIS Stakeholder Registry. There's the link for that. You can go to APHIS's home page. There's a very prominent Stakeholder Registry notice that you can click on. But I also mentioned the fruit and vegetable import requirement. You can go to that and click on any of APHIS's manuals and take a look at the entry requirements.

Additionally, if you have some more questions and you don't get in touch with me today, you can reach our customer service call center that's listed up there. Again, that's a summary of what we covered. At that point, I'll turn it over to Dr. Tucker. Thank you very much.

DR. LEWIS: Thank you, Matthew. We just heard, leading from Michael's presentation, what's happening with our other federal partners Matthew mentioned, in terms of Animal and Plant Health Inspection Service, and Daniel, Custom and Border Protection.

We're now going to bring this back, in terms of what's happening more from an AMS, specifically from a National Organic Programs perspective. Dr. Tucker will be sharing that, bringing us to what's happening with NOP. Then secondly, providing more clarity and refinement in terms of what we're actually asking the Board to do, in terms of looking at imports in the organic sector. Let me just also mention to the public that the slides that you're seeing today

will be posted and available on the NOP website. I know Matthew and Daniel gave some resources, so they'll be available for the public to look at that. Let me now turn to my colleague, Dr. Jennifer Tucker, providing an NOP perspective. Thank you.

DR. TUCKER: I think we're still looking for my slides. I have only three, so if you can't find them quickly, I can talk about what's on them. They're in the P drive, NOSB meeting, Jacksonville. There's a subfolder called Imports Panel. It's in there. I'm going to go ahead and get started. You've learned a lot about AMS, APHIS, and CBP, and their respective roles.

They are truly partners in organic integrity with us, and that's going to do nothing but increase as we move ahead. An awful lot of our work in responding to the OIG recommendations that you heard about earlier are going to hinge on all the work that you just learned about here, so I thought it was important to really

understand the landscape that we are working in. We are one of 47 federal partners here, and each of those have lots of different programs in them. The complexity of this is really quite significant, so very much appreciate Matt, Daniel, and Mike for joining us to talk through all that, so thanks so much.

I'm going to close with three topics -- there we are -- a quick review of our work in NOP, a look at what we're doing next, and some specific requests we'd like the Board to consider. First, our current work. In the NOP update, I noted that we are continuing to emphasize data quality and content, so quality and quantity, through INTEGRITY. We are continuing to develop our accreditation system and expanding our work into international systems.

For example, export certificates. You just heard a lot about import certificates. We're also working with export certificates. In the last couple of months, we were able to invest

and begin some development work in creating electronic export certificates for U.S. producers, using an existing AMS system called ETDE. It's electronic trade document something, but it has to do with electronic documents in the system. We call it ETDE. We are starting with populating an electronic certificate for U.S. operations exporting to Mexico, and then we'll turn to developing an export certificate to the EU. For those who work in that area, the system will connect with TRACES.

As part of this, we are working to reduce burden and errors, by using certifier and operation contact information from INTEGRITY to pre-populate certificates. Now that we have the investment of INTEGRITY -- again, we finished development on that -- we already have a very stable baseline of operation data, that can then be pushed out to other systems, as needed, which would save a lot of data entry for certifiers, as they're working with these systems, so as they feed into other systems.

As I mentioned in the NOP update, we have several actions involving technology that are going to respond to OIG audit report recommendations. One of these is the very detailed process of building these proposed message sets to send to CBP. Again, we're one of many programs that want to be able to have message sets in CBP. They, again, are what will allow ACE to generate that organic import certificate. The goal is to first learn how ACE will generate and accept import certificates under our equivalency agreements.

In the future, once we learn how to do that, that import certificate capability could be expanded to cover imports from international organic businesses outside existing trade agreements. All of this work would rely on having specific regulatory authorities. That kept on coming up in Daniel's presentation. You must have regulatory authority. That's always the first bullet.

Understanding how our regulations fit

within that universe is a very, very important first step. We'll get input from CBP on how that could unfold. As Mike mentioned, we have been able to start the message sets already. Again, the export certificates we're working on is already funded. Lots of OIG audit recommendations that relate to this area, so first steps of many, many to come. For upcoming work, we're starting to explore the development and implementation of an international supply chain traceability system using what is called Blockchain or similar technologies. These technologies could allow certifiers to approve transactions along an organic supply chain, in real time, enabling them to detect falsification of documentation and to trace inventory counts across the supply chain.

This type of system could also allow the NOP to audit across a supply chain, really fulfilling the goal of tracing product from farm to market and back again. Again -- I said the term already -- we're learning a lot about

Blockchain. It's both a governance and a technology framework that can be used to create electronic networks to connect players and products through transactions along a supply chain.

For example, a farmer could, say, use an app on a phone to enter the availability of a certain amount of organic commodity, say corn. The certifier could approve it as a valid product. Then when somebody else on the chain, this Blockchain, takes ownership of a certain amount of the corn, the chain could record the changes in inventory as it passes from one player to another, all the way to the receiving processor. Blockchains are designed to confirm transactions as valid and authentic. There are lots of different ideas for how this kind of a system could work. It could be a distributed industry-run system, with federal oversight.

Given the way organic certification is structured in the law, it is a public-private partnership, with the certifiers and the industry

doing a lot of the transaction work directly. So it could be an industry-run system with federal oversight. It could also be a federalized data warehouse. It could involve tracking devices associated with shipments. It could involve global positioning system data.

It could pull acreage data from integrity. There might be many, many, many other options. We are in the earliest stages of envisioning the different possible concepts of operation and look forward to learning together what the possibilities here might be. Let's turn to how the NOSB can help. Paul opened by reminding that we had sent a memo to the Board this summer, so here's some specifics, in terms of ways in which the NOSB might be able to help. You learned a lot about government systems involved in overseeing imports, but these are areas we think the NOSB could provide proposals to advance our work in this area. We're open to other ideas here. This is a starting point for consideration.

First, No. 1, as representatives of the organic community, provide your insights to USDA on the respective roles of industry, certifiers, and AMS, when it comes to protecting the organic integrity of imports. Again, you've learned a whole lot about the government systems involved here, given the structure of the organic system that we have, that includes the government certifiers and trade.

How could that framework -- within that framework, how could we consider new technologies and practices? These insights need to stay within our existing regulatory framework and authority, so start with the system we have and contemplate what the different roles could be. What do you see as best practices for how industry, certifiers, and AMS should each engage with this problem through the existing system? Again, you've gotten a glance at what the technology side looks like on the government side. What roles could industry and certifiers, what could those roles look like. Second, the

current accreditation system focuses, really, on audits of specific certifiers. We go out and do on-the-ground audits and witness inspections with specific certifiers.

We have started to talk about how to design and implement full supply chain audits. Often, complex supply chains involve many certifiers operating in many countries. How could supply chain audits that truly trace from farm to table and back again be structured and implemented? That's a proposal that could really help us consider new ways of approaching these problems.

Third, I gave a brief overview of Blockchain. As representatives of the organic community, if that kind of international supply chain traceability system were to be implemented, who do you think should be doing what? What could the chain look like, in terms of governance? This is a very, very new and emerging area. If you chose to really dive into this item, we'd give you a crash course on

Blockchain. We've done some learning, to date, on Blockchain and different ways it could potentially be used, so we would give you more background on that particular technology. Finally, No. 4, inspectors really do play an absolutely critical role.

They must know how to and effectively complete advanced auditing activities, such as mass balance and traceback audits. We know the performance evaluations are a critical aspect of ensuring that inspectors are able to do this really complex work. What evaluation criteria and testing should certifiers be implementing to ensure their inspectors are skilled in these audit activities, particularly as supply chains become more complex?

How should certifiers assess and document these skills as part of the performance evaluation process? That's it. We're not expecting the Board to take on all these items, but these are needs that we've identified in NOP, that we believe the Board could have unique

insights about. So we're sharing them with the Board today, and with the public, to get you started on what is very clearly a very, very complex topic. I'm going to close, again, by thanking Mike, Daniel, and Matt, really appreciate your being here, so thanks.

DR. LEWIS: Before I turn the meeting back to our chair, Tom Chapman, I want to echo my colleagues, thanking, also, Jenny and my federal colleagues for all your work preparing for today's import panel and to now move the discussion to you, to members of the Board, in terms of this is the first educational opportunity and the background to help you provide advice to us and recommendations on improving oversight imported organic products. Tom, the floor is yours.

MR. CHAPMAN: Thank you. I'm going to start with a few questions, and then open it up to the Board to ask questions, as well. I see you, Francis, but I'm going to start with a few, and then I'll move on to other members. I see

Harriet and Dan, so one second. First off, one of the notes that was raised, I think especially by you, Michael, is there's 47 agencies, and there's a need to prioritize amongst all of them how systems in ACE are set up. I guess I'm curious to know how is that prioritization set, and what can be done by the NOSB, the AMS, or the community to sufficiently prioritize the organic integration into that system, based on the OIG audit?

MR. DURANDO: Thank you, Mr. Chairman. Probably what I was referring to, now that ACE is built, and it's operating, or as we say, in production, we now have all of these agencies at various stages of completion of their own systems. The actual core development, as Daniel referred to it, for ACE is completed.

CBP doesn't have core development contractors on hand at this stage. The next step is how does CBP, moving forward, prioritize the work that is put before it from all of these 47 agencies? One of the governance entities I

referred to was the Border Interagency Executive Council.

Not to try to pass it off on other workgroups or acronyms, so I apologize in advance, but that is really where that group has been toiling now for a number of months. I'm being very transparent. How does one reconcile not really competing needs -- we're all complementary, as government agencies, having to work together, but if everybody's lining up with work, how does that get prioritized, given the fact that you're going to have enough contractors only to do so much at a time? That process isn't resolved at this time.

I don't want to get too far ahead, but if NOP has a new build with, say, a message set, it might really depend on how large that is, what the level of effort is, as they say. Of course, if NOP's got the money ready to go -- I know there's been efforts that Jenny's referred to on the hill to line that up -- that can play a role.

Last, but not least, then maybe I'll

see if Daniel wants to add anything, is a lot of that prioritization may come once we have a full complement of political appointees, not only in the Department of Agriculture, but in all of the other departments around the federal government.

Because those political appointees will have significant -- underline significant -- impact on what gets prioritized. With all due respect to any of us in federal service, there's a big difference between a Mike Durando or a Jenny Tucker or a Matt Farmer trying to stake out a priority with CBP, as compared to, say, our deputy secretary or our secretary of agriculture. Indeed, the whole build out for ACE, and the big push for the last two or three years, was actually overseen at the deputy secretary level. We have a deputy secretary now.

We have an undersecretary now, I'm told. Since I left town yesterday, that's taken care of. It's early. We don't know what's happening today. But that's going to play a role. In the end, I think the mission is there.

It's a matter of working through the dollars and the resources. Daniel, would you want to add to that?

MR. COLLIER: Sure, I could add a little bit. Just to add on to what Mike said, regarding the stage where we are now, the ongoing operations and maintenance of the system involves not only what we call critical fixes to the system -- when problems arise, when bugs are identified, when certain minor changes need to be made, we have the funding to do that right now, which is what we're focused on, essentially, to keep the system going. In addition to that, there is what we call -- what was once core work, work that was originally designated as work that needed to be done prior to December 2016 that, for various reasons, has now been grouped into post-core work now. On top of the operations and maintenance, after that, the priority for us has been completion of that work, which was originally identified as core.

The third level is now the post-core

development, purely post-core, so not operations and maintenance, not holdover from core development. That involves, as I mentioned earlier, various requests for development from the agencies within CBP, as well as from the trade.

As Mike mentioned, that process for prioritization is still in the process of being ironed out, but I will say that an agency that is able to fund its own request, is able to help pay for that development, will most likely be higher on the priority list, and/or an agency that has the regulations to back up the requirement, so in other words, an agency that is mandated to fulfill a certain regulatory requirement that currently is not in place in ACE. That would be something we -- that's another factor that we would look at that would drive that request towards the top of our priority list.

MR. CHAPMAN: Thank you. There was mentioned several times, and you almost were touching it, I think, there on the end, about

ensuring that the agencies have the sufficient legal authority and regulatory systems in place -- and maybe, Jenny, this question is best for you. Under OFPA and other statutes out there, does the NOP have sufficient regulatory authority to control imports through the ACE system?

DR. TUCKER: That's a good question. The act prohibits the representation of a product as organic unless it's certified. We do not have, right now, stop import or stop sale authority. If we could identify the product and get the information about it, right now, we don't have the authority to say stop, you can't sell that.

I think we have the authority to get -- I think, I hope -- into the system -- this is part in our OIG audit response, where we say we have to have conversations with CBP about how do they interpret our authority, and what we have right now, what would that allow CBP to do and what wouldn't it allow CBP to do? We know we don't have stop sale authority, but we have other

authority, so how would they interpret that? That's, again, the beginning of a conversation that is real critical in the next few months here.

MR. CHAPMAN: Something like a stop import, stop sale authority would be through an act of Congress; it's not a regulatory thing?

DR. TUCKER: I believe that would have to be a change to the act.

MR. CHAPMAN: Thank you. Then one last, and I'll open it up to -- I have Frances, Harriet, then Dan -- in broad timeline perspectives, you talked about starting with equivalencies, and then expanding to non-equivalencies. Do you have a rough time frame, the roughest of time frames?

DR. TUCKER: Our first step is going to be coming up with this concept of operations, working with CBP to identify the requirements. I think that is the really -- planning always, done well, takes a good amount of time. By July of next year is when we owe OIG our concept of

operations. I think we'll know a whole lot more by then. At that point, we've already started conversations. We've already had somebody who's literally sat in front of a word processor and actually written the message set. We have somebody who's -- anything that doesn't cost contract dollars right now we've already started on. We've sent over draft message sets, how do these look? That conversation has started.

I think once you get the mechanics figured out for a certain set of countries, my guess is that it's not hard, necessarily, to scale out. That is, again, though, another limit -- right now, import certificates are required under the equivalency agreements, which is why we're starting there. They're not required for any other country.

That's another layer of that regulatory complexity that we would need to talk to CBP. Right now, important certificates are not part of the regs. Would they have to be for CBP to accept them, or can they go ahead and say

stick them in there? I don't know the answer to that, and I don't want to put them on the spot. Again, part of the beginning of a conversation of how the authorities work.

MR. CHAPMAN: Real quick, if we wanted to expand import certificates to all imports, would that be a regulatory change only, or would it also require a legislative change?

DR. TUCKER: I believe that could be achieved through regulations, but anything is stronger when it's at an act. The way the hierarchy works is there's an act, and then there's a reg. Daniel's nodding, so I assume that they would think that an act would have more power than a reg, but I do believe that's a requirement in the reg. These guys are looking at me. I assume you're going to wave if I say --

MR. DURANDO: I might just chime in here. I'm not versed in the organic act. Let me put that right out there. But as a person who oversees an operation, that's what we do is regulatory work, 100-150 rulemakings a year. It

really is a matter of taking a look at that statute.

We, the agency, has to sit down with our Office of the General Counsel and figure out how much wiggle room you've got with the words that are actually in the law. How far can you go? Then back to Jenny's point, from there -- this is what Daniel and the CBP's going to look for -- once you figure out your wiggle room and how far you can take the authority, then you've got to get it in real words in the regulations, so that the regulations spell out -- that's where the detail is. That's the execution of it, what you can and you cannot do.

I know from experience at working on CEMS with CBP, there was a time where CBP would not even give an agency access to the data, just raw data coming through the ACE portal, without showing them your regulatory authority to even see that data. They're very, very protective of that, as they should be. To set up a system down the road with NOP, these message sets or

whatever, they're going to want to see where's your authority to do this.

There'll be some work to do. Jenny's right. It's really hard to say exactly do you have to make a statutory change or regulatory change. I'm not versed in it, but it's all very doable, but it's a lot of work and our attorneys do get involved within our Office of the General Counsel.

MR. CHAPMAN: Thank you. Francis.

DR. THICKE: I really like that, what Jenny suggested, exploring the development of an international supply chain traceability system. During the break time, somebody reminded me that OCIA always had these transaction certificates, so that if a farmer had 100 acres of corn, got 150 bushels an acre, that'd be 15,000 bushels.

Every time that farmer sold any corn, a transaction certificate would go with it. That farmer could sell no more than $15,000 worth of transaction certificates. The buyer maybe bought 200,000 bushels, would have to have a transaction

certificate for every bushel total. That could be done electronically. I think that would be really a way to go. It's nothing radical. It's something we've done in the past.

DR. TUCKER: Thanks for that feedback. That's a great example. I think different certifiers are doing different things. There are some certifiers who are already doing this. They are tracking inventories. Yes, that's a great example of how this could work out. Then the question is how do you get that into, then, a system where data between certifiers can flow over an entire supply chain? I think that has -- it's a lot of very interesting potential. Thanks for the example.

MR. CHAPMAN: Harriet.

MS. BEHAR: I understand that we're talking -- the regulatory need for a government stop sale, but I am wondering if, through ACE, if the NOP can become a PGA -- I'm trying to work all my acronyms here -- or other way for there to be a notification, especially just something

simple, like it came in as an organic product, and it was fumigated with a prohibited substance.

Would there at least be some kind of notification because we wouldn't necessarily have to have a government stop sale on it. We have a robust certification system, ourselves. If certifiers were aware that this -- there was a compromise to the organic integrity of the product somehow -- I just don't know how NOP becomes a PGA through ACE.

MR. FARMER: This is Matt Farmer. Great question. You're absolutely right. There is an in-between period between, maybe, if they have to look at, maybe, a reg change or a new act, which that would be a huge undertaking. We have found a temporary bridge. You're absolutely right. In working with PPQ, Plant Protection and Quarantine deputy administrator and Deputy Administrator McAvoy, through that MOU, we did arrange for information to be passed over. We're still working out the kinks in that system. When you do any systems change, there's a process in

there. We did it, actually, pretty quickly. We were able to stand that up.

I did want to point out that we trained APHIS employees on how to recognize organic shipments. When organic shipments come into a port of entry, there's not the big label up there on a shipment. It could be a bulk vessel of grain that has no labeling and has no documentation. It's not coming under a tariff code for organic commodities.

That was provided by the organic program to assist us with training APHIS personnel in how to identify. We provided a couple changes to two systems. We added an NOP disclaimer, which helps them on their compliance and enforcement side. Additionally, when we do have information that leads us to believe this is an organic shipment, that we did apply a phytosanitary treatment, we do notify the organic program. Like I said, some of that is right now, I'm picking up the phone and notifying them, but we're working out to have it automated within the

system.

MS. BEHAR: Then the NOP, would it have access to your system? They're not an approved PGA yet, is that right?

MR. FARMER: No, but within USDA and our MOU, we've worked to provide information of possible non-compliance with their reg.

DR. TUCKER: A very quick comment on that. One of the things we're learning about with APHIS is how does that data come in. It doesn't necessarily come in and say the certifier is this certifier, or this is the operation. It doesn't necessarily come in as data that's immediately I can send that to the certifier.

Some of it is we have to figure out how do we read the data that's coming in to us and, frankly, notice some pattern. If we know that there are certain fruits or vegetables that are from a certain country are always going to be treated, so they really shouldn't be sold as organic in the U.S., knowing where those trends are. Again, I'm going to, one more time, plug

for the importance of using the taxonomy in the organic integrity database that can help us more quickly identify which certifiers are operating in which countries, with which commodities, so that we can more easily take that data from APHIS and let's run a very quick report on which certifiers are working with this commodity, from this country. That would be -- instead of this one off on each shipment, start noticing these trends and get the word out about that, so it is a double feedback loop.

MR. DURANDO: Tom, can I just finish up on her question? The whole issue, again, of PGA, don't get too hung up on that. I would encourage you not to. In essence, AMS is a PGA right now. NOP is part of AMS.

Actually, as NOP moves forward on whatever its solutions are, different message set or sets, plural, etc., those ultimately become encompassed in an overarching document called a CATAIR document, which stands -- we had to look it up. I couldn't remember it. It's the CBP and

Trade Automated Interface Requirements. AMS and every other PGA has its own CATAIR. We moved forward with CBP as an agency. That opportunity is there to make that happen, just a matter of time.

MR. CHAPMAN: Could you fit more acronyms in that sentence?

MR. DURANDO: We even had to look it up. I use the word every day.

MR. CHAPMAN: Real quick, the notifications that you're talking about now, is that mostly based on organic-specific HS tariff codes?

MR. FARMER: No, it could be anything from -- because shipments will come in that will say organic, but it's not under -- it's under the conventional tariff code. It could be labeling on the box. It could be any other documents that are provided with the entry that leads them to believe it's organic.

MR. CHAPMAN: Then under the current system, if an organic HS tariff code, though,

does have a fumigation on it, is there -- are those caught, or would those -- it's potential if it was noticed by the person in charge?

MR. FARMER: Definitely. Within the system, it would be identified, and it would be passed along to NOP.

MR. CHAPMAN: Dan, then Dave.

DR. SEITZ: Michael, I'd like to understand a little bit more what the final system is going to look like that you've described. It sounds like with the paper review that you did initially, that was probably a spot-checking system, right? You couldn't possibly look at the paperwork for all the imports coming in.

MR. DURANDO: It was a de facto spot check. Let me leave it that way.

DR. SEITZ: Okay. It sounds as if what you're aiming for is being able to comprehensively make sure all the paperwork is in place for any import through the electronic system. Is that fair, that you would at least be

able to track all the paperwork for every import that's coming in? Is that the goal, or it would still be a de facto spot checking, but just on a much broader scale? Just trying to understand.

MR. DURANDO: The goal, and hopefully the outcome, is 100 percent visibility. So every single item that's being imported into the United States, electronically, the documentation has been entered, fields have been filled, and then 100 percent of those shipments that require inspection, we would receive electronic notification of that. Our goal is 100 percent reconciliation.

DR. SEITZ: Then, as someone who's new to this whole area, I'm curious to know is there regulatory authority to test, in any way, shipments that come in that may be suspect, so, for instance, testing for pesticides that would not be on an organic product? Apart from the paperwork being in place, are there other things that, then, you can do if any questions are raised in your mind?

MR. DURANDO: In my organization, and in our legal authority, we do not have the authority to test for pesticides or require a test. We do have, in an instance or two, the authority to test for aflatoxin. We require that, and it must be within a minimum threshold or maximum threshold to enter. If an agency -- I'll go out on a limb -- had the authority to require that all imports be tested for some sort of chemical residue --

DR. SEITZ: Or suspect ones.

MR. DURANDO: -- or suspect -- and meet a certain standard, could a system be built, similar to ours, that would track that and enforce that? Yes, it could be done, but there would have to be the legal authority to do that. That's not within the scope of my program.

DR. SEITZ: Then a final question is, again, from a naive standpoint, are there typical ways that fraud is perpetrated through imports? If we're trying to understand how we might address this on an NOSB level, what would be the

two or three typical ways that this happens, if you can even describe that?

MR. DURANDO: I'm not sure I would want to go out there. I think more often than not, compliance violations, I want to believe, are inadvertent or unintentional, although probably the most common form, in our case, is for products to be mislabeled, perhaps being a certain classification of a commodity that is exempt, compared to the regulated version of that commodity.

You might have mislabeling, or there can be -- we've worked with CBP on a number of cases where product was -- the importer or the broker was assigning an inappropriate HTS code, an HTS code that would cause it to circumvent our regulations. The trick is with the mass volume of traffic entering the United States of product, CBP isn't necessarily in a position to look at a product and say whether the HTS code does or doesn't match.

It may be an HTS code for that

commodity, but it's of a classification that there's no way, visually, they could determine. That would be the other area. We've had a couple instances of that. That would be all I could give you at this point.

DR. SEITZ: Great, thanks.

MR. CHAPMAN: Dave.

MR. MORTENSEN: Yes, thank you. I have a question similar to Dan's. There's been quite a change in import/export volume over the last recent years. I was looking at a recent ERS report. Exports of organic products valued $412 million in 2011 and $548 million in 2016.

During the same time interval, imports were valued, in 2011, at $600 million, so roughly equivalent to exports, but have tripled in the same period of time, to 2016, to $1.65 billion. In trying, as Dan was asking, to wrap our heads around the capacity of our system to track things, could you guys reflect -- that's a gender neutral, inclusive you folks -- project where are some of the greatest vulnerabilities in

certifying what's going on the ground and in tracking in the pipeline, i.e. in the ships, the documents and all that, when a system is challenged in a way that the sales increased 3-fold over a very short period of time?

For some of these commodities, like wheat, it increased 25-fold in five years, soybeans and corn 4.2 and 4.4-fold increases in mass of grain coming in. I'm just trying to -- related to my morning question about a sensitivity analysis is trying to -- is this a computer tracking problem, or is this an on-the-ground problem? Is it boots on the ground at the ports or in the fields in Turkey and Lithuania? Anybody care to just help enlighten us on that?

MR. DURANDO: I guess maybe I'll -- maybe Matt's going to say something. I don't have a lot to offer there. In most instances -- I know in our case, and maybe one can extrapolate, it's a matter of having -- again, back to the statutory and the regulatory

authority to do something, or to enforce, and then it would be resources, whether it's boots on the ground or automation. I know in the specialty crop, fruit/vegetable specialty crop arena -- I don't have the numbers in front of me, but I know the Department and the trade organizations all report imports of fruits and vegetable specialty crops are continuing to increase.

We're a deficit country now. More than 50 percent of our consumption is imported, and that's going to just continue to grow. I would argue maybe in our case, we're meeting that growth or that demand through automation. There's no other way around it for us. We couldn't put the number of people in place to handle all the paper and everything else. That's what I would offer on that. Matt or Daniel, do you guys have a thought?

MR. FARMER: Absolutely. It doesn't matter if I'm wearing an NOP hat or an APHIS hat or a CBP hat. Especially when you're looking at

price differences in commodities, from conventional to organic, you're going to have people try to circumvent the system. What those weaknesses are, they range from certification up through mixing, partial mixing. It runs the gamut. You're absolutely right. With the government-to-government certifications, and with greater information that ACE ITDS will provide, I have no doubt that in the present and moving forward, that we have confidence in the system to determine where those weak points are.

MR. MORTENSEN: It would be helpful, and maybe there's not time to get into that now, but it sounds to me like ACE for organic could take a while, it sounds like, from what you presented. It would be helpful for us to, as a Board, think about what is done in the interim.

Personally, I still am concerned about whether we have the right kind of boots on the ground ratio to deal with a three-fold increase in imports, but we'll continue to try to figure that out as we go along with some of the

questions that the Board is considering taking on, but thanks for your answers.

MR. CHAPMAN: Thank you for people paying attention. You'll notice it's 12:30. We are going to run into lunch a bit if the panel experts have time to sit for a few more questions. I think this is an important dialogue, and I would like to make the most use of all you folks' time, if possible. Up next I have ASA, and then I had A-dae.

MR. BRADMAN: I just had a brief question. I think it was mostly answered. When you said the goal was to look at basically 100 percent of imports, I'm wondering is that going to be phased in, or is that current, and is there a threshold, in terms of volume or tonnage or dollars for different products that would trigger this evaluation, or is the goal really 100 percent, and how close to 100 percent are we?

MR. DURANDO: To be clear, the law hasn't changed. There always has been a requirement that 100 percent of the products

represented in those 14 commodities in the case study I presented, 100 percent of them must be inspected, of those shipments, before they're allowed to clear into the United States. The challenge, again, has been visibility. I guess you could argue we are phasing it in. I mentioned that we have a pilot program underway. With that program, it's 5 to 10 percent or so of the imports. The reason we did that wasn't necessarily worrying about catching people and wanted to give them a chance. They've known for years that they have to comply, and we've been out there leveraging penalties and fines and everything else.

It was a matter of ensuring, No. 1, that the message sets and everything else was working correctly in ACE, but secondly, make sure that our system, or CEMS, was stable, operating, debugged and everything else.

At that point -- the other piece of it, when you're dealing with all of these commodities -- I think Daniel or Matt was

reminding me earlier this morning, it's really the import brokers who are a pivotal entity in this whole process. These are very large operations.

They're all having to build out their own systems, their own software, so that it will effectively communicate, if I'm correct, with ACE and such. They're going to be able to message with the rest of the universe. For many of these companies, this is large, large investments in technology, and it also is taking them time. Some of them have been at it for a year, two, three, four years. A lot of them have been -- we have trade representatives. You have folks like UPS and FedEx and others on that ITDS board of directors. They've all been involved trying to bring the trade along.

Yes, it's a phase in, so to speak, with a pilot program, but once we put the regulation in place that says it's mandatory that you file in ACE, it will go, overnight, from 5 or 10 or 15 percent to something much closer to 100

percent, and then there will undoubtedly be a lag, not really because of will, a matter of just brokers gearing up fast enough.

You'll see, probably, a reshuffling of the trade. They're going to say I need to make sure I have a broker who is ACE compliant. They're going to gravitate over there while their other broker continues to build out their system.

I don't know if that answers your question. Didn't want to go down a rabbit hole there, but it's not -- but there's been no change in our compliance enforcement stance, if you will; 100 percent have always been required to meet those standards.

MR. FARMER: Just so we're clear, the APHIS and CBP inspections are for APHIS regulations. I don't believe anyone at a port of entry is looking to see if that shipment that came in is compliant with NOP organic standards unless there was an issue with a pest being found and we treat it.

Then we would look at the documents

for NOP and provide that information over. Just so we're clear, because I think some of the questions were about the boots on the ground. Correct me if I'm wrong, but there's no NOP personnel at ports of entry.

DR. TUCKER: Right, that's correct. We have certifiers on one side, and certifiers on the other side. We do not have anyone at the border, nor do we have the authority at the border.

MR. CHAPMAN: A-dae.

MS. BRIONES: Mr. Farmer, you briefly described one of the ongoing initiatives with ACE. Looking at the biotechnology regulatory services, what data are you tracking in ACE regarding the BRS stuff? Can you just describe that in detail a little more?

MR. FARMER: I wish I could. What I can do is get the information of what BRS will be. I know they're part of our APHIS core team. Their documents for entry requirements, that is a good questions. I definitely will get back to

you on what information they're collecting.

MR. CHAPMAN: Thank you. Steve.

MR. ELA: Jennifer, as I understand it, given what we've said, regulatory environments -- the organic system is a paper-based system. As you said, we have certifiers here. They generate certificates. We have certifiers over here that are supposed to check those certificates. The only way, at this point, that I see, as I'm hearing, that we can enforce these fraudulent shipments is after the fact of saying you've misused the word organic.

DR. TUCKER: I do think there are actions that are being taken and can be taken right now. Yes, we've been spending a lot of time about paperwork and data being transmitted, and every single operation must be inspected every single year. Those boots on the ground, the reality is the certifiers have the inspectors on the ground to do things like mass balance and traceback audits. What did you take in, and what did you send out? If that is being done at every

single operation across the supply chain, then I think that can really help. The certifiers know what to look at, at these certificates. We're all learning.

We have very sophisticated actors that are learning how to do -- they've learned how to do this, and we need to learn what they are doing. But we are learning what do you look at. When you have documentation that crosses borders, not in the U.S., but between two other borders, depending on what the countries are, what documentation do you look at?

What do you look at on their certificate and all their supporting documents? How do you weave that thread? I think we have certainly learned a tremendous amount about how the paperwork works -- on the ground audits and inspections and did you really -- can we actually trace what happened at this operation, so every certifier can say yes, I believe this operation is in full compliance, and I have all of these inspection records and traceback mass balance

audits to prove it. I think that's something we can all do now, today.

MR. CHAPMAN: Harriet.

MS. BEHAR: The Organic Trade Association recommended that port of entries become a certified entity. Is that even possible -- certified organic -- in their comments to the Board. Having never been to a port of entry, I don't know how that might be accomplished.

DR. TUCKER: That's a great question. I think as we're looking at these concepts of operation, I understand your ports have multiple entities operating at the port. They're all distinct entities operating there. Whether the entire port or subsets of the port could be certified, I think, is a great question. It would be part of the concept of operations. Daniel, anything that you can say on that? I don't want to put you on the spot too much.

MR. COLLIER: That's actually the first I've heard of that concept. Was there anything in the details of that recommendation

about how that would work, or was it just a general recommendation?

MS. BEHAR: I suppose when they give public comment, we can ask. It was a comment that -- because the port of entry is part of that physical transfer area, and that's the way our certification system works is everyone who's physically handling a product through the chain is inspected to make sure that they are not providing prohibited materials, they're not comingling. They have personnel that understand the organic certification system.

MR. CHAPMAN: Scott, do you have any thoughts, as a certifier?

MS. BEHAR: I have no idea, maybe Scott? I've never been to a port of entry.

MR. RICE: We have a couple of ports in Washington State that are certified. Our agency does not certify them, but another certifier does. I think you kind of described it as it happens. As much as you have a split operation or a split handler that may be handling

both organic and non-organic product, you have measures in place for cleanout and handling, as you would see in other lines.

DR. TUCKER: That's really helpful. Eventually, perhaps in the Organic Integrity Database, we could have port as a business type. There's a lot happening. Again, all of this -- we're still learning, too, so all of this is really helpful in bringing your experience and knowledge out there of what's happening back to this group, so thank you.

MR. CHAPMAN: All right, I think people are getting antsy for their lunch. I'm going to wrap it up with two quick questions, and then thank you guys for your time. One question, and this is probably directed best at APHIS -- I guess probably any of you.

We have this organic certification scheme in place, where we require practiced standards of operation. There's going to be certified handling operations within the U.S. that then receive these products, at some point,

that are imported.

Are there best practices or documents that they could use or they should be looking at to determine if a product was treated, at some point in the import process, phytosanitary certificates or others? Are there documents that they should be requesting to ensure the integrity in the supply chain?

MR. FARMER: Yes, and no. When we take a phytosanitary action on a shipment with a treatment, there's going to be an emergency action notification, which is the -- it'll either be a CBP Form 523 or a USDA Form 523. Those would be attached -- usually, the importer is unaware of what's going on with their shipment while it's at the port of entry.

It's their broker that has the awareness or is given the request if they want to re-export or treat the shipment. The broker would determine yes, I'll go ahead and treat the shipment. That could be an issue. Then there's the other one, which is a condition of entry

treatment.

That would not have a form, other than a certification of treatment, which there's no certificate provided. It's just done. You really have to be aware of what country commodity combination you're importing from and whether or not there's a standing treatment that's required for entry.

MR. CHAPMAN: That would be in those databases you mentioned earlier?

MR. FARMER: Correct.

MR. CHAPMAN: Then my last question is I noticed, Michael, under your presentation, there was a discussion around programs being focused around marketing orders and other commodity programs. I know there's an organic checkoff program proposal status working its way through whatever that regulatory system is. If that were to pass and become an official organic checkoff program, would that at all change the way you guys interface with organic imports?

MR. FARMER: It would not, my

understanding. That's a research and promotion program. I'll stand corrected. If anything, it may assess imported product to help fund those generic programs, but it would not change anything that we do.

Any of those 14 commodities that we regulate, to the extent that any of those are imported as a certified organic product, to us, that's interesting, in my division, but again, we wouldn't be looking at that as a criteria for entry and for any compliance enforcement.

If there were a research and promotion program up and running for certified organic product, and it did require that assessments be levied against the imported product, it would be logical, and it would flow from current practice that those overseeing that R&P program would be pulling data from the ACE portal and somehow using that to identify all imports of certified organic agricultural products. Then they would be using that to match that against assessments made by importers, but it wouldn't change

anything that we do.

Typically, our research and promotion programs do not have hold authority. They do not hold intact authority. All of the enforcement is really after the fact because the entity is still there. You can always go after them.

MR. CHAPMAN: Okay, thank you. We're out of time. I want to thank our panelists for their time and input and dialogue. I think it's important and vital to our community. Thank you for taking the time to travel out here with us today. Paul, do you want to say anything?

DR. LEWIS: I have nothing else to add, thank you, Tom, just to echo the support that my federal colleagues have -- again, this is part of an ongoing dialogue. I know we spoke about having another panel discussion looking at possibly a panel of certifiers. We'll be talking about that in due time. Again, part of an educational experience, so that we're looking forward, in terms of recommendations that Tom and the Board can provide, dealing with this

important issue. Thank you.

MR. CHAPMAN: Thank you everyone. We will now recess for lunch and start back up promptly at, I think it's 1:30, 2:00? We'll start right back up promptly at 2:00. We are now in recess.

(Whereupon, the above-entitled matter went off the record at 12:50 p.m. and resumed at 2:10 p.m.)

MR. CHAPMAN: All right, we'll come back into order and proceed with our agenda. Up first is the National Organic Program with the materials update and the summary of new and outstanding petitions from Dr. Lisa Brines.

DR. BRINES: All right, good afternoon, everybody. So the purpose of the presentation today is just to give you an overview of materials that are of interest on the agenda today, but also what's in progress and might be on the agenda for future NOSB meetings.

So for this meeting, we have four petitioned materials that are on the agenda that

have proposals that came out of subcommittee that will be considered by the full board at this meeting. There are also 35 listings of materials on the National List which will complete the sunset process at the conclusion of this meeting.

In terms of the criteria that the board will use to evaluate materials, whether those are petitioned materials or materials being reviewed under sunset, those criteria are under statute in the Organic Foods Production Act, and they include a number of different criteria related to toxicity, human health, alternatives --- both alternative materials, and alternative practices that could be used in lieu of the petitioned substance. So those are the criteria for basing your decisions.

The petition guidelines that we have published in the program handbook, the template that we use for technical evaluation reports, and the NOSB review documents are all designed to align with those OFPA criteria to guide through the full petition process from the submissions,

through the technical report, to the NOSB documents that they are all aligned with those criteria that are under statute.

There are some additional criteria for handling substances, so the criteria are different depending on the use of that substance, whether it's for crop production, livestock production, or for processing or handling applications, and there is some additional criteria for synthetic processing aids as well that are in the regulations and not in the statute.

So for this meeting, the crops subcommittee is bringing forth a number of proposals for consideration by the full board. For petitioned materials, that includes a petition for fatty alcohols, which is a mix of octanol and decanol.

There is a petition for anaerobic digestate. It is not actually petitioning for addition to the National List, but does have some other issues that are of interest to the board in

terms of material usage in organic crop production.

In addition, there is an update, verbal update, that the board will not be voting on from newspaper and recycled paper. So that was not a result of a petition, but as a follow up from a previous sunset review.

In addition, since our last public meeting, the board did receive a petition also for ammonium nonanoate, and that petition is available to the public on the NOP website.

However, during the course of its initial review of the petition, the subcommittee determined that the petition did not meet the criteria for review because as a re-petition, it didn't provide sufficient new information to warrant review by the full board.

So those criteria for re-petitions, it is in the national petition guidelines. It's posted in the NOP handbook which is available on the website, and again, that petition is available to the public on our website as well.

Okay, so what's coming up for the crops subcommittee at future meetings? You have a number of petitions that have been submitted, many of which are undergoing technical review and might come up at the next spring meeting. Those include allyl isothiocyanate, natamycin, polyoxin D zinc salt, sodium citrate, sulfur as a molluscicide, ammonium citrate, and ammonium glycinate.

And some of you that have been around for a few years might notice that there's some familiarity with some of these substances including allyl isothiocyanate, polyoxin D, and the two ammonium salts. These are all coming forward as re-petitions.

So under our petition process, petitioners don't have a process for appealing decisions of the board, but again, according to the national petition guidelines, they can submit a new petition for consideration by the board if that new petition provides new information that wasn't considered during the initial review.

So all of these materials with the exception of natamycin are petitioned to add to 205601 of the National List. The petitioner for natamycin is requesting a classification decision from the board.

Okay, moving onto the livestock subcommittee, they brought forth two different petition material proposals for consideration by the full board. Those include hypochlorous acid and sulfur. Those petitions both included a technical review prior to the proposal development by the subcommittee, and both the petitions and technical reviews are available on the NOP website.

Okay, so coming up from the livestock subcommittee at future meetings, currently under review is a petition for a glycolic acid. That's petitioned as a teat dip for dairy animals. Recently received a petition for oxalic acid. That's for control for varroa mites for honey bees, and there's also a pending petition for thymol which is used in foot baths for livestock.

So all of the petitions are currently available on the NOP website, and the technical reports, once they're completed, will be posted there as well.

Moving onto the handling subcommittee, we don't have any current petitions on the handling subcommittee part of the agenda for this meeting, but currently under subcommittee review, we do have a trio of these antimicrobial sanitizer type products that are currently under review and have technical reviews either complete or in development.

So that includes the silver dihydrogen citrate, sodium chlorite for the generation of chlorine dioxide gas, and sodium dodecyl benzene sulfonate or SDBS. So I believe all these three of those petitions, again, are available on our website and the technical reports have been completed or are close to being finished.

Also under review by the handling subcommittee we have three different agricultural substances that have been petitioned for use to

Section 205.606, so that's a section of the list that applies to agricultural substances that can be used in non-organic form if they are included on 205.606.

So we have two -- a petitioner that submitted this Ethiopian and Japones pepper petitions, and then we have a more recent petition for tamarind seed gum which is under review, and a technical report is in development.

Okay, also of interest from the handling subcommittee at this meeting, there is a consideration of a reclassification of potassium acid tartrate. I think that came out of the last sunset review of this substance. So the decision would be whether to reclassify that substance from a synthetic substance to an agricultural substance.

There's also a discussion document on marine algae. That will not be voted on at this meeting. It's simply a discussion document, and the two verbal updates following from previous meetings included tocopherols and ancillary

substances in cellulose. And again, for the verbal updates, we won't have a vote at this meeting either.

Also of interest, we do have a new report available for bisphenol A (BPA), as a packaging substance, and again, that's posted on our website now. It was developed at the request of the handling subcommittee in response to a memo that NOP issued to the full board in 2014 regarding packaging substances used in organic food handling. So it's not on the agenda for this meeting, but we do have the technical report available, which was a follow up to that memo.

Okay, so in terms of things that will be voted on at this meeting, for petitioned substances, there are generally two votes that will occur for each material.

That first motion is a classification motion for things that have not been previously classified by the board, and that typically is a motion to classify a material as either synthetic or nonsynthetic or agricultural or

nonagricultural.

Once a material has been classified, the board will take a second vote whether to list, remove, or amend the substance as applicable, and both of those motions do take a two-thirds majority in order to pass the full board, and that threshold of two-thirds is established under the statute in the Organic Food Production Act.

So with a board of 15 members here, that's 10 votes in order to pass either of those motions. If someone is late back from a break and there are only 14 members in the room, it's still 10 votes, so 10 for membership here.

We will have 35 substances up for sunset review to complete the sunset review at this meeting. Those materials are part of the sunset 2019 review, and it's 2019 because for materials that are recommended for removal, the program does need that time to complete any necessary rulemaking by the sunset deadline. So I won't go through the materials individually

right now, but you'll hear from me later tomorrow and the following day with the introductions for those materials.

So in terms of the sunset 2019, one caveat I did want to point out is that only one of those materials that are being reviewed is actually scheduled under the regulations to sunset in 2019, which is the biodegradable biobased mulch film.

The rest of those materials are being reviewed early as part of the board's recommendation from 2016 to reorganize the sunset review process, so in effect we're moving up the review of 34 of the materials in order to better balance the work load of the board under sunset.

Okay, so these sunset materials, they were all on the agenda for the spring 2017 meeting, and again, this is the second meeting where the board will complete its review. For each of those materials, the board will take a motion to remove the substance, and again, that motion will take a two-thirds majority in order

to pass.

If you are interested in either these materials or future sunset materials, we did recently update the National List sunset date document which is available in the program handbook. That's NOP 5611, and that reflects all of the updates and changes that were made under the sunset 2017 process and is the most current resource for upcoming sunsets.

And just a quick preview on the sunset 2020, which will start at the spring 2018 meeting, there's a few more materials for next year, 52 listings that will be reviewed over the course of the following spring meetings next year. Again, six of those are actually scheduled to sunset in 2020. The remaining 46 are, again, under an early review as part of that NOSB recommendation to redistribute the workload for sunset.

Even though we haven't completed the sunset 2019 yet, we did ask the board over the summer to think about what technical reports they

might need in support of next year's sunset process. That's to give us enough time to do the contracting and technical report development to be ready for the spring 2018 meeting.

So as part of that review, we did ask the subcommittees to prioritize their technical reports. We were able to meet all of the, I guess, top priority requests and a few additional ones as well. This slide will be posted on our website, but just to give you a preview, that looks like seven, six reports that we'll be doing under sunset 2020.

I do want to point out just one in particular which is the gums report, which was requested for the handling subcommittee. So there are a number of gums on the National List. Not all of them are going to be under sunset review for 2020.

In consideration of the fact that gums are very often used for similar technical and functional effects, we did expand the scope of that report for gums so that it will cover all of

the gums on the National List, so it will include all of the water extracted gums that are on 606, but in addition, the other gums, tragacanth, xanthan, and gellan gum, I think, is the last one. So those reports will be coming soon. Once they're approved by the various subcommittees, we will post them online for the public.

I think this is my last slide. One update on the technical report contracts, as part of our normal business, we do have to update our technical report contract from time to time, so we did just reissue a technical report contract which will help with the support for the upcoming sunset reviews and petitions. That award was contract -- was awarded to two groups, the Nexight Group and Savan Group.

And I just want to point out one change that we did make for this new technical report contract in response to stakeholder feedback. We heard from various stakeholders about the disclosure of authors for the reports. Whereas in general, we have disclosed the

organization completing the report consistently, but not necessarily the individuals involved in the authorship. Under the new contract, we do have that mandatory requirement that the authors will be disclosed in the report.

So we're in a bit of a transition period right now, so everything being posted may not include that information if it wasn't done under the previous contract, but going forward under this new blanket purchase agreement, we will include authors, and that includes subcontractors as well.

And I think that is it, and if you have any questions, I'd be happy to answer them as well. Thanks.

MR. CHAPMAN: So quick question, you do have current contractors under contract that would be extending under the non-disclosure of authors contract?

DR. BRINES: There are a couple of reports that are wrapping up, nothing new that has been assigned recently. I believe the sodium

citrate report is under the old contract, and glycolic acid is under the old contract.

MR. CHAPMAN: And then those two were the totality of contracts, or those are just new contractors in addition to contractors already approved?

DR. BRINES: I see, yes, so this replaces an expiring contract, so this will be the two contractors going forward.

MR. CHAPMAN: Excellent, thank you.

DR. LEWIS: I'd like to turn to my colleague, Dr. Jenny Tucker, for some additional remarks.

DR. TUCKER: Okay, I came up here so we can acknowledge and recognize Lisa Brines for having won a big award within the National Organic Program, so this is a happy award moment. Lisa is the recipient of the NOP Employee of the Quarter award this last quarter.

Okay, so this is an award, again, it's a quarterly award, so it's issued each quarter. It's within NOP, and it is peer nominated, and so

a group of Lisa's peers nominated her for this award, and so she gets some goodies for that.

So first, there is a floating trophy that says USDA Organic and has a seal on it, "National Organic Program employee of the quarter in honor of your outstanding service," so she gets to keep this for the quarter, and then it gets passed to the next recipient next quarter, so there you go.

And then to keep, Lisa gets a -- it's a clock and pen holder, and for some reason, the pens weren't in the box, so I'll have to mail you the pens. I don't know how that works. It says, "National Organic Program Employee of the Quarter." It also has the seal on it, so she gets to keep this, so it's her keepsake for employee of the quarter.

And then no award would be complete without a plaque, of course, so here we go, and so here is the plaque. It says, "Certificate of Achievement. This certificate proudly recognizes Lisa M. Brines as employee of the quarter during

July, August, and September 2017 in honor of your outstanding performance and commitment to the Agricultural Marketing Service's National Organic Program's success."

We'll take formal pictures a little later. I do want to just say a couple of words. I think you all know how wonderful Lisa is, and so she has done tremendous work to really formalize and to explain, and to make more efficient the petition process.

She answers countless questions about the National List for stakeholders across the community, both long-term community members and new ones who are coming in. This technical report recompete that she just mentioned, that was a huge project.

Government contracting is hard, and she really, really mastered that process and really took over from beginning to end really how to work that process and make it the success that it was, so that was a huge project, and Lisa, so grateful for everything, so thank you.

MR. CHAPMAN: Thank you, Jenny. That's an award that's well deserved. We couldn't do our work without Dr. Brines' support, and I think everyone on the board agrees with me on that. Thank you so much, Lisa, for all your help.

All right, we will get onto public comment now. To start public comment, I'm going to go over a couple items from our policies and procedures manual. Before I get into that, and if we could pull up those slides, just a quick reminder to silence your phones and computers. I can hear someone getting a decent amount of email out there, so please just remember to keep that quiet so we can focus on the public comment and questions from the board.

All right, so public comment policy, I'm not going to read this in detail. I'm just going to go over some mechanics of it and some important highlights, but first of all, the public comment duration is three minutes.

We have a handy colored timer and

buzzer there. Michelle, do you want to start it going? So it starts at green. It will go to yellow and red, and we'll just see that happen as I start talking, but the yellow light is a warning, and then the red light is when the time is up.

Once you see that red light, please finish your sentence and your thought, and out of respect for the board and other public commenters, I ask that you respect the time limit and try to wrap it up as quickly as possible. At that time, I will ask the board members if they have any questions for the presenter.

If you have a presentation to go along with it and have provided that Michelle, she will have it loaded up, and there is a remote that you can use to move the slides forward. Michelle is modeling it at this time.

I will be asking everyone to start their comments by stating their name and affiliation for the record. We ask that you disclose all relevant affiliations pertaining to

matters of business before the board. If members of the board want further clarification, I encourage you to ask questions after the comment has been given.

I will be asking for commenters' name and affiliation before each commenter to remind folks to start with that, and also to give you an opportunity to set the record straight if I've butchered your name, and I apologize for that in advance because I will most likely do that to some names.

A reminder that -- can we go to the second slide, Michelle? No proxies are allowed. Commenters should refrain from making personal attacks or remarks that might impugn the character of an individual. If I hear something of this nature, I will interrupt the commenter and ask them to refrain.

Please be clear and succinct. It is your three minutes to talk about whatever you wish, previous point notwithstanding, but just because you're able to speed read doesn't mean

we're able to speed listen, and that's the end of my advice and what's in our manual.

So with that, we'll get started with public comments. First up, I'll be reading the names and then the names of people on deck. If you're on deck, we have a chair over here for you to sit on so we can rapidly move through the public comment process given we're already about 15 minutes behind.

So first up is Russell Taylor, followed by Jesse Maranville. Russell, are you here, and if you could start with your name and relevant affiliation?

MR. TAYLOR: Thank you. My name is Russell Taylor. I'm here today representing the Humic Products Trade Association as president. HPTA consists of 35 of the leading manufacturers in the humic product industry. I am also a committee member of the International Humic Substances Society, a committee of commercial and industrial applications on humic substances.

I have been in the humic acid

manufacturing business professionally for 20 years, and more importantly, I'm a certified organic farmer who uses humic acids on my farm. My comments today represent those of many humic acid both -- in the industry, both domestically and internationally.

Because humic acids is functionally defined as being only soluble in an alkaline solution, a small amount of synthetic hydroxide is needed to refine these products. In past years, concerns with humic acid at the NOSB has always been around the nutrient fortification with a synthetic substance added to refine these products.

After reviewing the minutes of the NOSB meeting in Denver, several misconceptions regarding the manufacture of humic acids caught our attention. Typically, humic acids are used in small amounts as part of compost heaps, drip irrigation, and blended with other fertilizers. Humic acid needs to be soluble to be used in these applications.

Humic acids can increase the availability of micronutrients and facilitate microbe activity. To assert these products as being used a crutch by farmers illustrates a lack of knowledge of how and why humic acids are used by these producers. Just like kelp extracts, humic acids are a tool that can help facilitate crop growth.

Also at the Denver meeting, comments were made in the subcommittee using confusing terms like "coal" and "naturally derived humic acids." Additionally, the assertion was made that coal for humic extraction diminishes the amount of fossil fuels available for energy.

Presently, humic acids are extracted from terrestrial deposits such as leonardite, oxidized lignite, bituminous coals, humalite, carbonaceous shales, peat, and sapropel. All of these naturally occurring deposits are ancient plant deposits that have no commercial fuel value.

Conversely, humic acids are not

present in fuel type coals and cannot be extracted from fuel type coals unless coal is subjected to a chemical oxidative process which are not allowed by NOP. This fact was confirmed by a rigorous lab testing method done by AAPFCO which is the American Association of Plant Food Control Officials.

Because oxidative processes for humic acid are not allowed by NOP rule, making additional annotation or guidance for coal-derived humic acids is redundant. The suggestion that more natural-based materials should be used overlooks the fact that humic acid needs to be synthetically extracted regardless of the source.

The bulk of the liquefied humic acid soluble available to growers is made from immature and brown weathered coals as indicated previously. Removing them from the allowed sources in the humic substance extraction process would virtually eliminate all liquefied humic acid as an available ingredient to organic farms.

The current rule describing alkaline

extracted humic acid derived from naturally occurring deposits is correct and requires no revision or annotation.

MR. CHAPMAN: Thank you. Any questions? Thank you for your comments. Up next is Jesse Maranville followed by Theojary Crisantes. Sorry, Theo.

MR. MARANVILLE: Hello, I'm Jesse Maranville.

MR. CHAPMAN: Sorry, if you could start with your name and affiliation?

MR. MARANVILLE: I'm president of Georgia Gulf Sulfur Corporation. Sulfur today as we know it is all produced by the Claus process as opposed to the Frasch process, which was the mine material that happened in the 1900s.

Frasch processed sulfur typically was 99 plus, however it had impurities including lead, selenium, tellurium. The processed sulfur we use today is 99.9 typical, has no impurities to speak of, 0.1 percent max.

It's also moved in molten tank cars

and trucks today as opposed to solid in the old days. We run our own tank trucks and bring it in that way.

We solidify it on a stainless steel drum. We store it in enclosed silos and bins, and then we take it to further processing. Further processing for us consists of milling it to a particle size, in the ag sulfur division about 35 microns.

We also add kaolin clay to it at this point to improve the flowability. The product is then packaged to a personal requirement of the customer, 50 pound bags, 30 pound bags, ton bags, whatever. It's never stored in bulk.

Elemental sulfur is environmentally safe. It's a very safe material, both as a raw material for handling, and as a finished product for the producer, I mean for the consumer, excuse me. Our ag products are both approved through NOP as well as OMRI for, again, production in crops.

It should be noted that target tests

for livestock are not really killed by the product, but actually repel for the most part. The exception to this is when it's in contact with pests that have exoskeletons that acts as diatomaceous earth in that respect.

At present, there are no known alternatives on the National List for livestock. A good use for this product is in poultry houses where it actually minimizes mites. If you minimize mites, you increase egg production, therefore it's just an economic benefit for the grower at a very minimal cost.

MR. CHAPMAN: Thank you.

MR. MARANVILLE: Questions?

MR. CHAPMAN: Any questions for Jesse? Asa first and then Harriet.

MR. MARANVILLE: Harriet?

MR. CHAPMAN: Asa first.

MR. BRADMAN: Just a quick question. When you package the material for applications to fields and poultry, is it in a dust form and is the application method by dust, or do you ever -

do you manufacture any wettable powders?

MR. MARANVILLE: It's actually - it's a duo label. You can apply it as a wettable or as a dust. You can dust it or spray it.

MS. BEHAR: Are there any respiratory issues when it's being used around livestock, poultry, or bovines, or anything?

MR. MARANVILLE: Not that we're aware of, no.

MS. OAKLEY: Sulfur is a known skin and eye irritant. Are there any concerns with applying it directly to animals with regards to their skin and eyes?

MR. MARANVILLE: I'm sorry, I didn't understand.

MS. OAKLEY: It's a skin and eye irritant. Are there any concerns applying it directly to livestock?

MR. MARANVILLE: No, actually we make another product that's a petroleum jelly-based product for skin problems for livestock. Most people won't dust livestock. They dust the

quarters just because it's easier and it's basically just as efficient, but there's no skin irritations that we know of.

MR. CHAPMAN: Thank you very much.

MR. MARANVILLE: Thank you.

MR. CHAPMAN: Up next is Theojary Crisantes followed by Peter Johnson. If you could start with your name and relevant affiliations for the record?

MR. CRISANTES: Hi, good afternoon, ladies and gentlemen. My name is Theojary Crisantes. I'm a grower at Wholesum Harvest. We grow organic vegetables in open fields, shade houses, greenhouses, both in the ground and in containers.

I would like to take this opportunity to comment on the crops committee proposal on hydroponics and container grown recommendations from August 29 of 2017, specifically the motion put forward that for container production to be certified organic, in which a limit of 20 percent of the plant nitrogen requirement can be supplied

by liquid feeding and a limit of 50 percent of the plant nitrogen requirement can be added to the container after the crop has been planted.

For perennials, the nitrogen feeding limit is calculated on an annual basis. Transplants, ornamentals, herbs, sprouts, potter, and aquatic plants are exempted from these requirements.

It is my view that regardless of the production method used, fertility needs should be addressed by site-specific conditions determined by the grower in accordance with his or her organic system plan and to promote biodiversity.

I strongly disagree to use a formula of 20 percent of the plant's nitrogen requirements determined for sodium nitrate, a highly soluble input which is immediately available to the plant as a nutrient, and compare it to hydrolyzed soybean meal, which is neither highly soluble nor immediately available to the plant as a nutrient, and then create a rule for the fertility need of a plant that is

inconsistent.

This statement demonstrates the lack of understanding of the crops committee about the process necessary for organic container production which they are pretending to regulate which requires presence in the root zone of natural and diverse soil ecology which is essential for organic inputs to be available to the plant as nutrients.

Their correct focus in container plant nutrition should be on the natural and diverse soil ecology found in the container and not in the amount of one single element and how the element is delivered to the plant.

I would like to encourage the board to continue to work on the minority view which is based on the 2010 recommendation, specifically the 50 percent carbon-based media requirement which to me seems arbitrary and redundant if the requirement for a media is already defined as a growing media shall contain sufficient organic matter. Thank you. Any questions?

MR. CHAPMAN: Thank you. Questions? Joelle?

MS. MOSSO: Hi, and thank you for your comments. I just had a question. I understand that you don't agree with what's in the majority proposal, but my question is could you comply with it?

MR. CRISANTES: Yeah, I could comply, yes, yeah.

MS. MOSSO: What would be the limiting factors being most problematic within it?

MR. CRISANTES: Well, there would be, you know, quite a few limiting factors, one being for sure we would have a lot of runoff of that 50 percent of that nutrient being already in the container. That would be, you know, the first one.

You feed the plant as they need to be fed, not, you know -- you don't feed your kids 50 percent of what they need at once, correct? So it's the same thing with plants. So imagine that you're throwing away that, and so that would be

one of the things that would come into mind right away.

MS. MOSSO: Thank you.

DR. THICKE: Mr. Crisantes, in July you testified before the U.S. Senate Ag Committee on behalf of the Coalition for Sustainable Organics and said quote, "The Coalition would support efforts to empower USDA and NOP staff to actively participate in the researching, drafting, and analysis of formal recommendations, and prioritize NOP's agenda. Further, we strongly support an active role for industry involvement."

So what is the active role you are looking for from the industry, and why is it that you want to see more of the authority of the NOSB turned over to the USDA?

MR. CRISANTES: I would like for the USDA to have a more active role on what the board needs to -- on the agenda of the board, on what the board needs to really be looking at.

For example, we had a great example of

it today. We have, you know, something that's really hurting our industry, which is the fraudulent imports, and I think that's something that needs to be addressed really quick.

And I think that's something that we should be working at, and I think that's something that's coming from them and it's not something that we're talking among us here, so those are the things that I'm talking about. Definitely the conversation needs to be including the industry, but it cannot be just industry driven. It needs to be a cooperation among everybody that's involved. Was that not satisfactory, sir?

DR. THICKE: I'm sorry?

MR. CRISANTES: Was that not satisfactory?

DR. THICKE: Probably not for me, but, you know.

MR. CHAPMAN: Thank you. Ashley?

MS. SWAFFAR: Theo, I'd just like to let you know that the NOP does approve our work

agenda items, so we as the board do not just come up with something to work on. We have to have it approved by the NOP.

We do submit suggestions of what we would like to work on, and then the program approves or doesn't approve it, and then in the case of hydroponics and container growing, the program actually asked us to further clarify this.

MR. CRISANTES: Correct.

MR. CHAPMAN: Thank you very much. Up next, we have Peter Johnson, followed by Melody Meyer. Peter, if you could start with your name and affiliation for the record?

MR. JOHNSON: Hi, my name is Pete Johnson. I have a farm called Pete's Greens in northern Vermont, 100 acres of organic produce, three acres of greenhouse production, and 200 acres of cover crops for a big crop rotation that we run.

I started as a farmer as an eight-year-old. My mom encouraged me to grow some

pumpkins and sell them, and immediately, even as a kid, it was obvious that focusing on soil fertility and quality was an important part of success. I'm here to speak in favor of eliminated hydroponic organics.

I'm from Vermont. We have an educated and interested consumer base there, and we regularly hear from consumers who are very concerned about watering down organic standards, and the top of the list that we hear about is hydroponics.

I'm not personally at all opposed to hydroponic production. I think it's an interesting way to grow food, and in the scheme of how we produce food in this country and feed people, there's a whole, you know, wide range of quality and all those things, and I think quality hydroponic production is a good way to feed people.

I think that the difference between a properly run organic soil fertility farm and hydroponic production is really vast, and there

are two completely different production systems and they should be called different names.

There's lots of good things we could call organic, you know, hydroponic production, but certified organic is the gold standard. We're trying to keep it that way, and it means a lot to a lot of people.

We have been, you know, humans have been farming now for 10,000 years, and that has been soil based. That's what people expect. That's what people think they're dealing with when they buy certified organic. They expect a natural system using natural biological factors, and, you know, I don't farm --

You know, I don't use soil biology to help fertilize my crops just because I believe in that. The standards require that. I can only use certain fertility products, most of which require some biological activity in order to be accessible to my crops.

So it's in the heart of the program and has been from the start, and it's really

important that we keep these standards and continue to have the integrity of USDA organic as we move forward because people care. People are interested.

It matters, and it's really going to matter in the coming years. And we appreciate your work, and I hope that you look at this very seriously. Thank you.

MR. CHAPMAN: Ashley, then Steve.

MS. SWAFFAR: So you talked a little bit about labeling. Would you be opposed if hydroponic folks used the USDA still, but just underneath it said, "hydroponically grown?"

MR. JOHNSON: I think that's a slippery slope. There's a lot of information out there in the world, and people don't -- you know, consumers don't see everything and it's hard to -- I would be opposed to that, yeah.

I think that we have a label for organic that does still really mean something, and it's really hard to educate people about all of the different parameters, the different kinds

of production, and I'd prefer a different label for hydroponic.

MR. CHAPMAN: Steve?

MR. ELA: You mentioned you had several acres of greenhouse production. Is that for more than just transplants?

MR. JOHNSON: Yes, it's mostly soil grown vegetables.

MR. ELA: And how do you fertilize that?

MR. JOHNSON: Mostly compost, lots of different rock minerals and things, but it's the same story there that I need the soil biology to produce the nutrients from the crops, and it's not easy.

It's a complicated system, and sometimes you can't respond as quickly as you'd like to to a crop nutrient need, but that's part of being an organic farmer and going down that path, and learning those processes and working with the biology.

MR. CHAPMAN: Harriet, then Emily.

MS. BEHAR: What percentage of your fertility costs do you think you have -- you know, in your overall costs -- what percentage is the fertility inputs?

MR. JOHNSON: On my farm, it's about two and a half to three percent. We use a lot of organic chicken manure that we apply during the cover cropping period. I have three times as much land as I grow vegetables on, and cover cropping and bulk manure fertility is a huge part of our program.

And basically when I get around to growing vegetables in a piece of ground, that's sort of the test of the previous two years of preparation, and it's highly successful. It takes a lot of forethought, but my input prices are quite low, so it does work out financially.

MS. OAKLEY: At previous meetings, we have heard from public commenters that consumers just consider organic to be about no synthetic fertilizers or pesticides and no GMOs, but you said you have an educated consumer base. I was

wondering if you feel your consumers share those views, or if you see that they care about a broader host of issues behind the organic label like biodiversity, etcetera?

MR. JOHNSON: Well, it's some of both. Of course it's a huge, broad spectrum, but in Vermont, we do have a very educated consumer base, and there is a large component of our customer base that understands this issue and cares about soil in soil production. I don't know that that's the case everywhere.

I suspect that in a lot of places, not having chemicals on the food is probably the number one priority, as it probably is for me as well, but as you know, this issue has gotten a lot of attention in the past two or three years and it's not going to go away, and I think that this is going to be a better and better known issue, and as it is, it becomes sort of more and more controversial in ways that are not good for the organic label.

MR. CHAPMAN: Sue?

MS. BAIRD: In your fields, I'm assuming that you would use soil tests to determine the micronutrients that you would need, and you said you use composted chicken litter, is that correct?

MR. JOHNSON: Mm-hmm.

MS. BAIRD: And then in your greenhouses, I'm assuming you use the same type of inputs, correct?

MR. JOHNSON: Similar, you know, different levels of course, but, yeah.

MS. BAIRD: Well, sure, depending on what it needs.

MR. JOHNSON: Sure.

MS. BAIRD: Are all of those inputs dry or are some of them liquefied?

MR. JOHNSON: We have used fish emulsion, for example, in our drip irrigation, but we -- actually, we find that the inputs that we use dry are less expensive typically per nutrient value, and we've gotten pretty good at predicting the needs of the crop through the

season.

Like I say, it's not perfect. It's an art. It's partly science, but it's also an art. Weather extremes can adjust those things. And I think that's another part of this issue too is that, you know, soil grown organic production is difficult, and it may be more difficult in some ways to create yields that could be created hydroponically, and so there could be a bit of an unfair playing field here and that matters as well, especially if we have a consumer base that actually wants what we're producing, but not everybody understands the situation.

MS. BAIRD: And I totally agree with you, very difficult. Do you have drip lines?

MR. JOHNSON: Yes.

MS. BAIRD: And do you run any kind of inputs through those drip lines?

MR. JOHNSON: Occasionally fish emulsion, seaweed, that sort of thing, but not at all the bulk nutrient needs of the crop.

MR. CHAPMAN: Okay, I'm going to do

one more, and then I'll stop it there because we need to move on. Joelle?

MS. MOSSO: It's a quick one. In your greenhouse soil-grown operation, do you do crop rotation or how do you address crop rotation or cover crop?

MR. JOHNSON: We don't cover crop much in the greenhouses, a little bit here and there, but the space is too valuable, so big rotation and heavy doses of compost seem to really help with the sort of issues that you might, you know, encounter in outdoor production if you didn't crop rotate, a lot of biological pest control, beneficials, a lot of attention paid to all of that because it's a highly diversified environment.

In some ways, I think it's easier to grow one crop in a greenhouse and keep it all closed up, but we're growing 50 crops in three acres of greenhouses, so we've learned a lot about how to use beneficials and things like that, and that too, imperfect, but a constant

learning challenge.

MS. MOSSO: Thank you.

MR. CHAPMAN: Thank you, Peter.

MR. JOHNSON: Thanks.

MR. CHAPMAN: Up next, we have Melody Meyer, followed by Justin Rich. We're about 25 minutes behind schedule now. Melody, if you could start with your name and affiliation?

MS. MEYER: Hi, I'm Melody Meyer. I'm with UNFI policy and industry relations. I'm also the executive director of the UNFI Foundation. I sit on the California Organic Products Advisory Committee, and I'm a trustee at The Organic Center. I'm no longer on the board of the OTA.

I want to thank you all for your tireless work, all the hours that you've put in, and your commitment to the organic process. I know it's a lot of work and I appreciate it.

I'm going to comment on a few things. Regarding the proposal to strengthen and clarify organic seed use requirements, I agree with OTA's

position that some changes need to be made before the proposal is passed.

Until a seed purity standard is developed, I urge you to simply clarify that non-organic seed must be commercially available in organic form and produced without excluded methods.

Regarding the proposal for hydroponic and container growing, I'm in support of the proposed standards that CCOF has developed for all types of soilless growing conditions or systems. Instead of focusing on inputs as the defining characteristics of various production system, the NOSB should focus more on the outcomes.

Minimum soil biology diversity should be applied to all container and hydroponic systems and all systems to ensure that soil biology remains an essential element of all organic systems. Selecting a one-size-fits-all strategy will not work for all crops and commodities.

UNFI supports separate labeling if done in such a way that simply adds a line beneath the name of the certification company and does not require a new UPC or PLU code. This would not disrupt commerce, and it would give the small fraction of consumers that care about soil the information that they need.

It's important that we take a sensible, balanced approach. We do need to find a solution. If NOSB cannot agree, we end up with nothing, nothing more than a haphazard mix of earlier recommendations and positions that are both unclear and insufficient to recognize the major changes that have occurred in organic production since OFPA was written.

I'm going to speak on eliminating the incentive to convert native ecosystems. I've come up here and mentioned this many times, so I really want to thank you for the recommendation. I would urge you to send this proposal back to committee to address a few details.

The term "native ecosystem" is yet

undefined, and the definition as proposed by Wild Farm Alliance provides a basis for understanding the types of ecosystems that this policy is striving to protect. It offers a basis for a practical verification method based on elements that are easily observable.

Regarding your research priorities, thank you for the inclusion of priorities related to plant disease management and the development of alternatives for materials on the National List. That's a really important thing.

As a trustee of The Organic Center, I echo their suggestions to consider biodiversity and the efficacy of practices as a topic for inclusion in your 2018 research priorities. I think this is especially relevant as the NOP's new biodiversity and resource conservation guide comes online. Thank you very much.

MR. CHAPMAN: Thank you. Any questions? Emily?

MS. OAKLEY: Could you elaborate a little bit on this new research topic of

biodiversity? I thought I understood from the webinar that the concern was that by increasing biodiversity on the farm, you were also increasing crop loss, so I wasn't entirely sure if I understood that correctly or what it was that the research you are suggesting should look at?

MS. MEYER: Just to consider the efficacy of different practices that are happening and how that affects biodiversity.

MR. CHAPMAN: Thank you very much.

MS. MEYER: Thank you.

MR. CHAPMAN: Up next is Justin Rich, followed by Mary-Scott Standish. Justin, is there a Justin here? All right, no Justin. Mary-Scott Standish, is that you walking up? All right, sorry to put you straight on the hot seat. You're up next, followed by Esteban Macias. If you could start with your name and affiliation for the record?

MS. STANDISH: Can you see me above the podium? Okay, I am Mary-Scott Standish from

Fresh2o Growers. Thank you to the board for your time. I would like to address the crop subcommittee proposal concerning hydroponics and container growing.

Fresh2o Growers is a certified organic hydroponic grower of lettuces and herbs located in Virginia. We are a family-owned and operated small business which employs 30 full time office and greenhouse staff.

Our owner, Joe Van Wingerden, has over 40 years experience in the greenhouse industry. It was on a mission project in Haiti that he first experienced growing produce organically. The people there needed a sustainable method to produce food, and there was no available fertilizer, so they had to source organic fertilizer locally.

He took that knowledge and experience back to the United States and decided to start an organic lettuce company. That is the mission of Fresh2o Growers: to grow more organic produce in a sustainable way. Our goal is to feed the

future the freshest, healthiest, and most nutritious produce possible while preserving our environment.

If the definition of hydroponics is changed to be defined as any container production system that does not meet the standard of a limit of 20 percent of the plant's nitrogen requirement being supplied by liquid feeding, and a limit of 50 percent of the plant's nitrogen requirement being added to the container after the crop has been planted, it will take away our organic certification and give field growers an unfair advantage.

First, plants do not take up dry fertilizer. They only take up liquid fertilizer. However, we do not use liquid fertilizers. We use the same dry fertilizers as field growers, and we dissolve the dry fertilizer in water.

Field growers do the same thing. The only difference is their fertilizer is dissolved when it rains. We control that part of the process better than they do. We use the same

fertilizers, except our use is targeted. Therefore, there is no waste and no runoff.

I think it is important to point out that our greenhouse is located within the Chesapeake Bay watershed. There is a great concern in the Chesapeake Bay watershed over the runoff from the agriculture because Chesapeake Bay is literally being poisoned by the fertilizers applied to the landscape, which is then carried off into the bay by runoff.

Secondly, our substrate is organic dirt. We use organic dirt and then we transplant into water, and when we transplant, our substrate is water. We add dry fertilizer to our substrate just like field growers. All of our fertilizer is already in our substrate, which is the water, when the crop is planted.

Lastly, field growers use more fertilizer per plant than we do. This rule allows organic field growers to use as much fertilizer as they want. The plant will use up only what it needs, and the rest of the

fertilizer goes into the dirt, feeds weeds, or runs off to pollute water sources.

The fertilizer we use in our substrate is used exclusively by the crop, and we use far less than 20 percent of what field growers use.

These three points illustrate how prejudiced this new definition of organic growing is. This will give field growers the only right to produce certified organic products.

I urge the NOSB to support modern, cleaner, and more sustainable and healthier methods of growing by supporting certified organic hydroponics, aquaponics, and container growing. Thank you.

MS. SWAFFAR: Thank you for your comments. Any questions? Asa?

MR. BRADMAN: I had a question. You said you use solid fertilizers and dissolve them in water, so are you making, like, compost teas, or what are the specific fertilizers that you're using, and how are you dissolving them, and then how are you delivering that to the plant?

MS. STANDISH: We use all OMRI and NOP approved dry fertilizers that are soluble in water. Our mix is a propriety mix of dry fertilizers, but the same as you would see in the field applications, but we're just dissolving them first and putting them into the substrate. Yes?

MS. SWAFFAR: Steve, you had your hand up first.

MR. ELA: So I saw in your comment and a number of public comments about the Chesapeake Bay area, which we all know has had serious problems, but are organic soil grown growers there contributing to that problem as well?

I mean, it seems like we're kind of comparing apples and oranges in that and, you know, my sense is most organic growers are controlling that phosphorus nutrient, you know, nitrate runoff through their growing methods. So do you know in that area, are the organic growers also contributing to that problem?

MS. STANDISH: I do know that there's

a small percentage of organic field growers in the state of Virginia. It's mostly conventional farming in the state of Virginia when it comes to field grown, so I don't know what you would consider, if there is data on the percentages of organic versus conventional that are contributing to the problem.

But what is a problem is that there are so many parts of the country that do not have the climate and weather that would allow for so many crops to be planted, so we're trying to contribute to our neck of the woods by growing something indoors that is not readily available year-round in our area of the country.

MR. MORTENSEN: Just to set the record straight on the fertility issue in the Chesapeake Bay region, that's an area that I work in specifically. About 40 percent of the phosphorous loading in the Chesapeake is from human waste from sewage, and the other 60 percent is attributed about 99 percent to conventionally produced corn in the region.

So organic farming in the region is considered not a contributor to the Chesapeake Bay problem mainly because of the diversity of crops on the ground and the use of cover cropping.

MS. SWAFFAR: Harriet?

MS. BEHAR: I know you said your fertilizers are proprietary, but could you just tell us what the actual sources are? We don't need to know the percentages, but are they manure based? Are they hydrolyzed --

MS. STANDISH: No, we --

MS. BEHAR: -- soy based, or hydrolyzed soybean meal based, or sodium nitrate? I mean, what are some, like, the nitrogen and the phosphorus sources?

MS. STANDISH: So we do use nitrogen from fish emulsion, not necessarily directly on the crop, but just as a source into our nutrient mix, and then we use other dry fertilizers that we bring in from our organic supplier.

MS. BEHAR: So is fish emulsion your

main source of nitrogen?

MS. STANDISH: Our main source of nitrogen is fish emulsion.

MS. SWAFFAR: Thank you. Tom says no.

MR. CHAPMAN: If it's quick.

MS. OAKLEY: It's really quick. I just wanted to make a point of clarification because I've heard this through the webinar, public comments, and here, that the intention behind the 50 percent requirement in the container was not that people load the containers with dry, soluble fertilizers before planting, but that they contain a substantial amount of compost and/or soil from which the plants would derive their nutrients.

So there wasn't an intent that there be leaching as a result of that, that the plants would be getting materials or nutrients from the compost and soil, so just a point of clarification.

MR. CHAPMAN: Thank you very much.

MS. STANDISH: Thank you.

MR. CHAPMAN: Up next is Esteban, followed by Urvashi Rangan. Esteban, if you could start with your name and affiliation for the record?

MR. MACIAS: Thank you. My name is Esteban Macias. I'm an agricultural engineer, and I have a master's degree in horticultural production. I work for a Mexican-based company named Grupo U. We are vegetable growers, and organics are about eight percent of our total production.

We are doing production in containers in hot houses, and, well, we've been doing it now for 12 years. I believe we were one of the very first operations that actually started doing it this way, and we actually started with trials in soil and different production systems.

So we had to make some decisions here and for us, the technical solution to several problems we had was the use of containers. Our water quality and our soil quality were quite not very good. We had a lot of salinity problems.

We had the option of trying to improve that by using extra water to leach the salts and do some organic amendments to improve everything, but in the end, our region is a semi-desert area.

We have a very limited amount of water. We actually do harvest all the water that falls for our greenhouses to be used on the fields. So the solution for us, the technical solution was to work on containers.

We came across that was also the best solution for using nutrients. Over the last years, organic fertilizer prices have skyrocketed almost triple. So our container systems are very efficient by placing the fertilizer, a little bit of it at a time.

I actually made a study with my technical staff and this was actually placing organic fertilizer, several different sources. So we used fish meal. We used soybean meal. We used soy-based bean meal, different materials we had at the time on our hands.

We placed them on containers with

soil, with actual soil, and we started irrigating every week, and collecting and analyzing the nutrients that leach from that. So we actually found for every element how they were behaving, and nitrogen, specifically nitrogen, once you reach the day number 15, it's all released by the microbes and then it starts dropping.

So if we were placing 50 percent of our nitrogen, our fertilizer just at once, after 15 days, it will be released, I mean, will be lost either by denitrification as ammonia, but most of it will be eaten by the plant.

Plant relation with nitrogen is my relation with chocolate. It doesn't have enough, so it will take it, and that will not be very good.

MR. CHAPMAN: Thank you. Any questions?

DR. THICKE: Was that in a water system? This is in a water-based system?

MR. MACIAS: No, we are working actually a core mixture with compost, and

minerals, and fish meal, and other stuff, so --

DR. THICKE: Okay, so perhaps if you had some of the soluble or labile materials, plus some more less labile materials, you could have a different curve if they're mixed together perhaps, right?

MR. MACIAS: Yeah, yeah, we start with the nutrition on the substrate, but we tend to keep it on a small amount in the very beginning and then keep on adding. Actually, we add the fish meal and we add the chicken pellets on each container under the dripper to make sure it then decomposes by the microbes.

MR. ELA: I'm curious when you water, do you have water going through the containers and coming out the bottom, and if so, how do you collect that and what do you do with that?

MR. MACIAS: Okay, the container's got a dripper on top of it, so we actually drip irrigate each container, and then the containers are on top of rigs, bands, so the water goes down and then it's collected to be placed on our

server, and then mixed with fresh water with less salt and used for open field production.

MR. CHAPMAN: Thank you.

MR. MACIAS: You're welcome.

MR. CHAPMAN: Up next is Urvashi, followed by Marian Blom. Urvashi, if you could start with your name and affiliation?

MS. RANGAN: Thank you. My name is Urvashi Rangan. I represent U R Consulting. It's my own business. I previously spent 17 years running safety and sustainability at Consumer Reports running test projects, label ratings, and national surveys on foods, and I've been to a lot of these NOSB meetings over the years. I'm really happy to be here again.

As a toxicologist who has also been a consumer advocate, I know how important it is to consider the science in the context of the policy work that you're doing, and making sure that the OFPA -- which seems like a long time ago -- is always top of mind in terms of what the intention and the spirit of what we're all doing here

really is.

I have lately -- I also wanted, Emily, to address your question on what consumers want. There is survey data out there. Surveys are a science. They're not phone calls, and I would highly encourage you not to rely on phone calls as a basis for making decisions, but rather ask the questions and ask them in a scientific way so that you can truly get the answers that you want.

These days, I've been spending a lot of time consulting to the sustainable agriculture foundation world, and I wanted to bring a little bit of that perspective into this meeting because it's really important for you to understand where the outer world is in terms of funding and sustainable agriculture. So Michelle, could you bring that up?

Steve Etka has coined this my eccentric concentric circle, but it is meant to talk about the big word out there "regenerative." The funders that I work for are incredibly interested in regenerative systems, and one thing

that I'm reminding these funders, some who are new in this space, some who have been there a long time, is that organic is a central part of what regenerative is.

There are label programs out there running that are going to launch without an organic piece attached to it, and that is going to undermine the organic program and organic products in the marketplace.

So it's incredibly important that all of us in the room understand that organic is not just central to regenerative, but it's the solid foundation underneath it.

And to the degree that integrity and continuous improvement needs to be maintained, in order to make sure that that little blue circle stays strong and maybe starts to incorporate some of the other things around it that are appropriate in terms of continuous improvement for organic, that's what it needs to be.

Hydroponics, in my opinion, does not fit these principles of biodiversity as soil

health of regenerating topsoil that are frankly part of the foundation of the OFPA. It's not that it doesn't have value, but they should call it something else, and USDA should come up with a program for them so that they can express what the benefits of their production practices are, but they're not organic.

Organic's really part of the soil system, and it's part of a regenerative system which goes even beyond organic, and labels are going beyond that now, and it really behooves the committee to look at that to see where continuous improvement is necessary. Thank you.

MS. BEHAR: So just to be clear, do you feel that hydroponic is a regenerative system?

MS. RANGAN: No, when we're talking about biodiversity, we're talking about building topsoil, which is an incredibly important topic. We're losing topsoil. When we talk about microbiology in the soil, these are all things -- you can't build biodiversity in a hydroponic

system. You can't achieve these goals.

Again, this isn't to denigrate hydroponic systems. It's just to say you're calling an orange an apple, and it's not, and so call it something that consumers can understand. Make it really clear.

Create boundaries around it, and market the product as it is, and that's what that industry should be doing rather than trying to sort of piggyback on this, and then create what I think will be likely consumer confusion as to, "Why is this labeled organic, and that isn't?" and to the many comments you already hear about consumers feeling that the standard may be getting watered down.

DR. SEITZ: Do you have any information on how carbon sequestration compares between soil-based agriculture and hydroponics?

MS. SMITH: I'm sorry, can you ask that question again?

DR. SEITZ: Do you have any information on how the sequestration of carbon compares

between organic soil-based agriculture and other kinds?

MS. SMITH: Yes, I don't have that information; I think that's really good information for you all to ask for, and perhaps Rodale has that information, and Jeff can bring that to your attention.

But the fact of the matter is, you can't improve biodiversity or topsoil or microbiology, per se, in a hydroponic system. That's more of starting with a sterile system, making sure it doesn't get contaminated; putting a lot of inputs into it in a controlled way.

But that's what that is; it's not exactly what we think of when you read the OFPA as an organic farm production system in soil.

CHAIRMAN CHAPMAN: Thank you.

MS. SMITH: Thanks.

CHAIRMAN CHAPMAN: Up next, Marian Blom, followed by Jim Fullmer, and you can start with your name and affiliation for the record.

MS. BLOM: My name is Marian Blom, and

I represent the organic farmers and industry in the Netherlands, and I speak here on behalf of IFOAM EU, the organic umbrella organization uniting farmers, processors, traders, researchers, and certifiers.

My comment is relevant for the crops subcommittee proposal on hydroponics and container growing.

So there are three reasons why I traveled 20 hours times two to give this three-minute comment: firstly, I want to convince you not to underestimate the importance of your decisions for us.

If the NOP will allow hydroponic and aquaponic operations, the conventional growers in the EU will use this to put even more pressure on the European organic groups, and this may lead to the conversion of at least 1,700 acres to organic hydroponic cultivation in my country, the Netherlands, alone, at the expense of organic soil-based cultivation.

By the way -- and this is the second

reason why I'm here -- such a decision would be quite contrary to the policy of the European Union, so please allow me to update you on the EU rules.

There is, at this moment, a political agreement that above-soil production will be forbidden by 2030, which is actually not such a big deal, as currently, only on 50 of the approximately 13,000 acres of European organic greenhouses are these so-called raised beds allowed.

It's a practice that's limited to Sweden, Finland, and Denmark, and contrary to what you may think, organic hydroponic production is not allowed in the Netherlands.

So in other words, the European institutions adhere to the principle of soil-related crop production; organic crops produced in living soil in connection with the subsoil and bedrock, and with exceptions well defined, like epiphytes, seedlings, sprouts, chicory heads, ornamentals, and herbs.

This brings me to the third and final reason of my presence here. The strengthening of soil-related crop production is an outcome of the revision of the European law for organic production, a revision conserving energy and money, and it has lasted already for five years.

The European Commission proclaimed its revision because Europe, in their view, needs simple rules, close to the principles of organic farming. This -- and we agree with that -- is the only way consumers will keep trusting the logo and continue buying organic products.

That is a consideration we would recommend strongly to the NOSB. Thank you very much.

DR. THICKE: Point of order, Tom. I think you should say the name, because the transcriber will have to know who is speaking when they write it up.

CHAIRMAN CHAPMAN: They have info from the microphones, but we'll start with Steve.

Mr. ELA: Thanks. I'm curious what --

and to kind of follow up on the question Dan asked the previous speaker about the role of carbon sequestration in organic agriculture in the soils, and how that plays in your thinking, or in your systems.

I mean, is carbon sequestration a goal, and do your systems promote that?

MS. BLOM: Yes. Carbon sequestration is very much debated at this moment in the whole of Europe because of the Paris agreement, the climate agreement, and it's been put into national policies.

So every production system is trying to improve their methods to allow for more carbon sequestration.

However, I have not seen a comparison between different greenhouse systems, if that is what you mean. So I don't know if this comparison on carbon sequestration has been done.

CHAIRMAN CHAPMAN: Harriet.

MS. BEHAR: So you said there was 1,700 acres of conventional hydroponics in the

Netherlands. Is it a robust market, and consumers are accepting a hydroponic label without an extra organic -- they're economically viable operations, or not?

MS. BLOM: Thank you for the question. Maybe I should make myself more clear -- I'm trying to convert into acres now. There are about 10,000 hectares in conventional greenhouses, and they're all hydroponic.

And of this, there is a forefront of companies who have expressed a wish to become organic hydroponic, and these are the 1,700 acres I mentioned.

But as such, the greenhouse products that are produced in the Netherlands, the conventional ones, they are very well accepted. But they are not specifically labeled as hydroponic or anything; they're just coming from a greenhouse.

CHAIRMAN CHAPMAN: Emily?

MS. OAKLEY: The Leaf system, or the practice behind in-the-ground, in-the-soil

production; would you say that's driven by consumers or producers, or a combination of the two in the European Union?

MS. BLOM: Well, it comes from more sites. The discussion I'm very much involved with comes from the producer site. They see the added value of an in-soil production in greenhouses, because it's already -- to say it quite honestly, it is quite an artificial system.

You already have a roof over your head. So the soil is what keeps the organic greenhouse producers connected with the rest of the organic producers, which makes it truly a fundamental principle.

But on the other hand, you have the European Commission, as I mentioned in my statement; they did a survey before they started the whole revision, on how the general public would think that the organic rules should be. And there was a strong input from consumers, saying that they would like the rules to be stricter.

So there are different discussions; they come from different parties, from different sites.

CHAIRMAN CHAPMAN: Thank you. Francis?

DR. THICKE: Thank you. So several quick questions. One is, did you say that in the Netherlands, a lot of hydroponic growers are growing it to U.S. organic standards, and they can't sell it in the Netherlands, but they can sell it in the U.S., they are selling it?

MS. BLOM: Yes, there is one consortium of several companies together. They are NOP certified. They produce in the Netherlands; they sell their produce on the American market as organic. They cannot sell it in Europe as organic.

And that's not the 1,700 acres; that's the smaller one. That's about 40 acres.

DR. THICKE: Okay. And if the U.S. allows hydroponics across the board and the European Union does not, what's that going to mean for trade? Will there be some change and

some problems with trade over time?

MS. BLOM: At least, we would call upon the European authorities to re-negotiate the equivalency agreement. That would be something. But at the moment, there are already hydroponic products produced in America, and technically there is no exemption made in the equivalency agreement. So it can be traded in Europe already as organic.

But if it will be really formalized through this decision and formalized through the regulations, I think we'd have to ask to start re-negotiating the equivalency agreement.

DR. THICKE: And one quick last thing; how likely do you think it is that European Commission will consider the suggestion that everything has to be in the soil; that that will be adopted by the European Union? Will that outlaw all container production? Do you think that's very likely to happen?

MS. BLOM: Yes, it's part of the whole revision. As I said, it's part of political

agreement, it has to be acknowledged and go through whole system.

I would say there is 90 to 95 percent chance that it will go further.

CHAIRMAN CHAPMAN: Thank you; Ashley, and then we'll have to stop there.

MS. SWAFFAR: So, Francis, you started on where I had my question. So, containers; are they allowed in your country right now?

MS. BLOM: Only for the exceptions; for the transplants and the herbs.

MS. SWAFFAR: Okay, so you don't allow any raised beds, anything like that? Everything has to be in the upper crust of earth?

MS. BLOM: Yes.

CHAIRMAN CHAPMAN: Thank you. Up next we have Jim Fullmer, followed by Kyla Smith.

MR. FULLMER: Hello, honorable NOSB, my name is Jim Fullmer. I am with the Demeter Association in the U.S., Executive Director. I'm also a certified organic farmer from the state of Oregon. And there's Mark Kastel taking my

picture.

I guess I'm going to lead where you left, with the crust of the earth, and I'll start there. Then I'll get into biodynamic agriculture if I have time.

But I'll start with a slide of the Earth. Those of you -- I was born in 1960, and this was a famous shot taken from Apollo 17, known as the Blue Marble.

I was 12 years old, but I remember it vividly, and I remember the excitement of humanity, of modern culture to be seeing ourselves for the first time, collectively.

So I just wanted to make a testament for soil in organic agriculture, and I'll start with a British scientist named James Lovelock.

Some of you might remember him; he postulated the Gaia theory, that proposes that the Earth herself is a self-regulating, complex system, involving the biosphere, the atmosphere, the hydrosphere, and the pedosphere, tightly coupled as an evolving system.

The theory sustains that the system as a whole, called Gaia, seeks a physical and chemical environment optimal for contemporary life.

The outermost layer of the Earth's crust, the pedosphere, going to Earth science, is the sum total of all the organisms: soils, water, and air. The pedosphere is the skin of the Earth, and only develops when there is a dynamic interaction between the atmosphere, which would be the air above and below the soil; the biosphere, which is the life, living organisms; the lithosphere, which is basically the bedrock; and the hydrosphere, which is water.

So essentially, this pedosphere, this crust of the Earth, the outermost crust of the Earth, is the foundation of all terrestrial life on this planet, period. So this thin, fragile layer is not only the foundation of organic agriculture; it's the foundation of all agriculture, of all life, and of human civilization itself.

So I argue it's a necessary foundation of organic agriculture. And I know this is philosophical; I have less than a minute to get into the agronomics; soil.

CHAIRMAN CHAPMAN: Thank you, Jim. Harriet?

MS. BEHAR: So we hear from people that our planet is polluted, and we have issues with overspray and drift, and needing to protect what limited resources we have. Can organic agriculture, in fields, in soil, do anything to correct that problem? Or do you think we just need to abandon that and go indoors?

MR. FULLMER: Or go to Mars or somewhere? I think this is where the discussion of regenerate comes from. I argue it's the premise of biodynamic agriculture, which is what I do.

But it's the idea that you organize a farming system in such a way that you're generating a natural resource out of the living dynamics of how you manage the farm itself;

integrating livestock back into the farming systems, specified and crop rotation. Your aim is to build soil humus. For lack of another word, that's a healing process.

CHAIRMAN CHAPMAN: Sue?

MS. BAIRD: When I was in Egypt, I toured a wonderful farm that is managed by SEKEM; are aware of SEKEM?

MR. FULLMER: Very much so.

MS. BAIRD: From Germany, and it's biodynamic. They had literally turned the desert into an oasis. But it wasn't the sand; it was a biodynamic prep. It wasn't the sand, the desert, that caused that oasis; it was biodynamic preps, run through a drip irrigation. Can you address that for me, please?

MR. FULLMER: Biodynamic preparations in 30 seconds; I'd argue it was the whole system. And so Helmy Abouleish and his father, who has now passed, literally formed a biodynamic farm organism, integrating livestock, goats, the whole thing, along with the biodynamic preparations.

They won a Nobel Prize for not only the social side of that, but the ability to turn desert into arable land.

CHAIRMAN CHAPMAN: Okay, I'm going to go with Dave, and then I'm going to have to stop there.

MR. MORTENSEN: Jim, in Marian's country, the Netherlands, and in Northern Europe, they don't allow the use of genetically modified crops; it's just not allowed. I had the opportunity to go over and speak there about this.

Would you say -- and in our organic community, we are very concerned about the use and the contamination of organic crops with genetically modified crops.

Would you say that the policies are more in line in Marian's country, when they don't allow genetically modified crops and have a concern about growing plants in the soil, than are policies on genetically modified crops and organic agriculture?

MR. FULLMER: You know, I'll reference the U.S. Demeter Farm Standard, which honestly is in a quagmire with the situation, in that the NOP has GMOs as an excluded method. It really doesn't address drift unless there is drift. The U.S. Demeter Farms Standard has a position of, none detected if tested.

And so it's a growing sector of the U.S. marketplace, Demeter product, and it looks highly unlikely that there could be biodynamic corn coming from Iowa, for instance, just because it's going to be contaminated.

So is that realistic, and is that tough on it? I don't know. Is it tough on farmers? Yes. The Demeter Standard would allow a farm that had, say, contaminated corn and still be a biodynamic farm, but it could not sell that corn as biodynamic.

So whatever that means -- and I'm not sure if that's answering your question --

MR. MORTENSEN: I guess I was trying to think through; I was struggling with the

inconsistency of our attitudes about policy. We are frustrated, and we don't want genetically modified crops; and I'm right there.

And Europe is, I think, much more forward-looking and progressive there. I then tend to look to the Europeans for what they are thinking about soil-grown plants. And it seems to me that the two are in parallel in Europe, whereas we're going in the opposite direction with some of our policies, between genetically modified crops and soil. Or maybe almost in parallel, at this point.

MR. FULLMER: With Europe, the same would be as our colleagues in the Netherlands, so the same with hydroponics also.

MR. MORTENSEN: Thank you.

CHAIRMAN CHAPMAN: Thank you. Up next is Kyla Smith, followed by Jo Ann Baumgartner. Kyla, if you'll start with your name and affiliation?

MS. SMITH: Good afternoon, my name is Kyla Smith. I'm the Certification Director at

Pennsylvania Certified Organic. I also serve as the chair of the Accredited Certifier's Association Board of Directors. PCO certifies over 1,300 operations.

I'll be commenting on the CACS's proposal on excluded operations in the supply chain.

First, I'd like to express PCO's support on this initial step towards tackling the issue of securing the integrity of the organic seal in the marketplace. As our industry grows, working together towards this goal is increasingly important, and we will need to apply a multi-pronged approach, utilizing all of the tools available to us, such as guidance and rule-making.

The approach recommended in this proposal is sound; however, the execution may not be. While the proposal stated that it did not address labeling, it did hone in on the word, labeled, used at 205.101, as required criteria to allow an operation to be excluded from

certification.

The section 205.101 does not specify which labeling provisions are required, and there are several. The proposal would essentially require the labeling elements outlined at 205.303, on non-retail labels, which is covered at 205.307.

It was stated at the NOC meeting during the presentation on this topic, that the regulations at 205.307 only apply to packaging labels when the product inside that package is labeled according to 205.303.

In July of 2016, an ACA working group completed a best practices document regarding products handled by uncertified wholesalers and distributors. It included this statement: Containers of packaged produce may only be labeled as per 205.307 when the packaged produce in the non-retail container is labeled in compliance with 205.303.

In January of this year, NOP conducted its annual certifier training, which included a

session on this topic, to clarify parts of the ACA best practice document.

Specifically, the NOP covered the labeling sections at 205.303 and 205.307. They did not agree with the working group's interpretation of 205.307, which as stated before, would have only allowed product being labeled according to 205.307 if the product inside was labeled according to 205.303.

If the Board passes this recommendation today, it will be imperative for the program to provide further guidance to certifiers to clarify if the revisions to this guidance support the regulations or not.

With confirmation and further training by the program, PCO supports this proposal. However, this is the critical piece; I cannot stress this enough, as this message has not been conveyed to certifiers in the past.

If the program does not agree with the proposed revisions; if they align with the current regulations, it appears that these

changes would need to be made through rule-making. PCO would welcome clarification in this area, as there seems to be ongoing confusion.

Thank you for all of your service and for the opportunity to comment.

CHAIRMAN CHAPMAN: Emily?

MS. OAKLEY: I have a question about vitamin B1.

MS. SMITH: Okay; I may not be the best person to ask.

MS. OAKLEY: I can wait and ask someone else.

MS. SMITH: If it's more material-related, Jen Berkebile, our materials program manager, will be commenting later today.

MS. OAKLEY: No problem.

CHAIRMAN CHAPMAN: Scott?

MR. RICE: Thanks, Kyla. I would whole-heartedly agree that we definitely need to be on the same page, and would welcome NOP's affirmation that our interpretation of the standard is parallel with their own. So I

understand we'll be trained on that again in February, at our annual training.

Hopefully at that point, we will get that affirmation. But I just wanted to offer that.

MS. SMITH: Thank you.

CHAIRMAN CHAPMAN: I had a quick question, comment on that as well. I read your comments and much appreciated it. It was probably an oversight that we didn't mention 205.307 in our document in sufficient detail.

But the logic that we applied to excluded operations applies to that section as well, because it clearly states, labeled, and so 205.303 would apply.

But for a question to you; is your interpretation of that section in line with what I had just stated here as well? That to truly be in compliance with 205.307, the product in the non-retail-labeled containers must be compliant with 205.303?

MS. SMITH: No.

CHAIRMAN CHAPMAN: That is not your interpretation?

MS. SMITH: And that's not what the NOP had trained its certifiers on.

CHAIRMAN CHAPMAN: Which is correct. Our additional guidance related to 5031 is not in there currently either. And so I would not expect them to train to that either, because they have not accepted that at this time.

Thank you. Up next is Jo Ann Baumgartner, followed by Anais Beddard.

MS. BAUMGARTNER: Hi, I'm Jo Ann Baumgartner, with the Wild Farm Alliance. On the subject of hydroponics, we think it's important that you consider soil biodiversity.

With regard to the NOP's biodiversity conservation guidance, I want to give you an update that the organic certifiers are starting to comply with it, although most still need to fix their OSPs, especially related to water and wildlife issues, as you can see in our recently published report on our website.

But what I mostly came here to speak about is protecting native ecosystems from conversion. Thank you, NOSB, for working on this issue. While the proposed rule is a good start, some changes need to be made.

First, don't narrow the scope of native ecosystem protection to land that has never been cultivated or grazed. Most land in the world that could be grazed, has been grazed. Some land that has been cultivated has recovered and now is considered a native ecosystem.

Define native ecosystems in the rule in a way that assessments can be made on species present, using these four categories of vegetation: natural, semi-natural, ruderal, and cultural.

Sites dominated by vegetation classified within the first two categories of natural and semi-natural should be treated as native ecosystems.

We recommend this wording as site-supporting; a native ecosystem cannot be

certified for organic production as provided under this regulation for a period of 10 years from the date of conversion.

Because of all these changes, we urge the NOSB to send this back to the subcommittee to get it right. The NOSB should clearly state its intent to focus on the transitioning to organic the 99 percent of land where prohibitive materials have been applied; and to conserve those native ecosystems that will be necessary to support declining and rare species, as you see here next to their degraded ecosystems, today and 100 years from now, when there will be much less land available, due to increased population and climate change.

Let's make sure the USDA label stays credible. Thank you.

CHAIRMAN CHAPMAN: Emily?

MS. OAKLEY: Hi, Jo Ann. I noticed that a lot of the commenters referenced the Wild Farm Alliance's analysis of this, and I'm wondering if you feel like you can confidently

state that you have a wide diversity of stakeholder support for this revised definition that you've proposed?

MS. BAUMGARTNER: Well, there were over 300 comments, and a significant number of them mentioned our comments. I think that they feel confident that we know what we're talking about.

And we are not just Wild Farm Alliance exclusively, our board and constituents, but we work with partners in the organic and conservation world.

CHAIRMAN CHAPMAN: Harriet?

MS. BEHAR: Hi, Jo Ann. As the lead on this issue -- and I know I've spoken with you many times; we've had what I like to call, earnest conversations -- about being careful, I'm totally with you on protecting those very rare, pristine, and precious areas.

But also, I don't want to cast too wide a net, to take away land that -- and as one commenter did mention, like a takings -- I just

want to make sure that we have a good definition that can be verified.

Just having some old, tired pasture that hasn't been pasture for 50 years, but has no biodiversity on it; that could still be organically approved; but lands that would have regeneration of a diverse group of plants and animals as a native ecosystem, that's what we were trying to preserve.

So I know that that's a big challenge, to figure that out, so we find the right line and don't cast the net too wide out there.

MS. BAUMGARTNER: Yes. I did see that one comment on takings; and takings have to do with when the government comes in puts in a freeway; they take your land.

But the NOP; it's a voluntary program, so it's not taking. Yes, the way we propose to define native ecosystems splits out those four definitions, and ensures that lands that have those native ecosystems, even if they were previously converted to agriculture but have

recovered; that they are protected.

There is a place within those four definitions; the premier native ecosystem is really easy to determine, and so is the cultural ecosystem, where it's just weeds, basically, or invasive species.

The nuance comes when you're looking at the different between semi-natural ecosystems and ruderal ecosystems; and in both situations, the habitat was significantly changed because of humans.

But in the cultural situation, it never recovered fully, and it's because that land cannot recover fully. It's surrounded by other lands that don't allow the recovery to occur; the natural dispersion of plants and animals, and the way that wind and water and soil helps to regenerate ecosystems.

CHAIRMAN CHAPMAN: Thank you, Jo Ann.

MS. BAUMGARTNER: Thank you.

CHAIRMAN CHAPMAN: Up next I have Anais Beddard, followed by Dave Chapman; and we

are 30 minutes behind at this point.

MS. BEDDARD: Hi, I'm Anais Beddard, and I'm the second generation of Lady Moon Farms. We're the largest organic vegetable grower east of the Mississippi, with farms in Florida, Georgia, and Pennsylvania.

We've been farming organically for 30 years. Our success is based on the founding principle that makes organic farming what it is; feed the soil and let the soil feed the plant.

We focus on nourishing the land and increasing our organic matter, which creates a strong and robust base to grow a variety of vegetables.

The most basic tenet of organic farming is that all health in plants, livestock, and humans flows from the immense biodiversity that is found in healthy, organically-managed soils.

Remove soil from the equation and you've removed the concept of what it means to be organic. Everyone agrees that straight

hydroponics should not be organic. The debate now is over semantics, with container systems claiming they are completely different production systems.

That is false, and while each of us is entitled to our own opinions, we are not entitled to our own facts. When you grow plants with daily doses of liquid feed, that is hydroponics. Whether the roots are suspended in water or coco coir, that does not make a difference.

And since we all agree hydroponics are not organic, the same logic follows that container growing is also not organic. The fact is reinforced under OFPA. Several places throughout the act, soil is mentioned specifically, using strong language such as, must and shall.

The intent of OFPA was centered around a holistic growing system. It focuses on building the soil, nurturing the ecosystem where the farm resides. When you have strong soil, you need less fertilizer; you have fewer insect

problems. And guess what? Your plants thrive too.

That allows us to grow successfully each year, without heavy-duty pesticides or many liquid nutrients. It isn't the lack of these items that makes the production system organic; rather, it's the production system that allows us to be judicious with our inputs.

You cannot relate a closed-loop container hydroponic system to this. Yet, some regulations in OFPA are not applicable for hydroponic container systems. The organic certification process is difficult, that's why a transition period was created; it takes a long time.

Annually, we are audited for crop rotations, cover crops, nutrients, soil tests. They are meant to understand how we are supporting soil and the land where we farm.

Container hydroponics do not have to meet those requirements, and thus they should not be organic. We are at a point in organic history

where we must stand up and protect this production system, because it could be our saving grace.

The greatest threat to our generation is global warming. Soil-organic farmers are combating this every day, using organic techniques with the ground beneath our feet.

I view myself as the future steward of the land that my parents raised before me. Much like a child, it is my duty to protect and nurture, and this is what will allow the land to continue to provide for future generations. Thank you.

CHAIRMAN CHAPMAN: Thank you. Emily?

MS. OAKLEY: Do you support the crop subcommittee's proposal that the motion on containers, or are you opposed to any form of containers?

MS. BEDDARD: I would prefer it to be in the ground, in the soil. But I think we are at a point, if nothing is passed, then we will continue to have more businesses grow and expand

using container production, and I do not agree with that.

So I think, with our options, I would be in support of the proposal.

CHAIRMAN CHAPMAN: Harriet?

MS. BEHAR: So that would be kind of a compromise position for you?

MS. BEDDARD: It would be a compromise. It would be a big compromise. But I think we have such differing views, it is a strong compromise, because it at least levels the playing field a little bit.

We are talking about two completely different production systems. This is night and day, what we do versus what these container systems do. So it's a huge compromise, but I think if that's the option on the table, I could get behind it.

CHAIRMAN CHAPMAN: Asa?

MR. BRADMAN: Yesterday I used the knife metaphor, like I'd like to cut myself in half, so I could vote both ways.

CHAIRMAN CHAPMAN: We didn't like that.

MR. BRADMAN: Maybe this is Solomon's knife. But I'm torn on this issue. Last week, I talked with somebody who is a generational organic farmer. The son is actually your generation, maybe a little older, but second generation.

He's been exclusively a soil grower all their lives, in both contexts. And he's open to these ponic methods, very emphatically, and feels like it's totally consistent with organic. And he really came from the same place you came from.

And without presaging your answer; what do you think of the label compromise? Is that a compromise, or would that essentially be a sellout, from your point of view?

MS. BEDDARD: So you're saying, USDA organic, and underneath, hydroponic?

MR. BRADMAN: I'm not sure what form it would take. Maybe it would be a hydroponic

label, but it would be run by USDA. Or it would be -- I've seen it in the comments, aquaganics, hydroganics. You know, there is a constituency out there that's not just corporate hydroponic, that is very grounded in the history of organic.

They take a different view, and I'm being asked to judge this at some level. So I would be interested to hear your comment as a second-generation peer to this person who had such a different view.

MS. BEDDARD: Right. I think there definitely needs to be a separate label, because consumers need to know the difference when they're buying soil or hydroponic. I've talked to a lot of friends about this, and most of them don't quite get what organic farming is.

I had a section on it, but I was running out of time, so I cut that all out. But I think there needs to be a label. I do not think using the USDA organic seal is the answer, because I think that will lead to more confusion.

A separate label that does not have

that seal; because if you have that seal, that is what we are known for. That is organic farming, and that is in the soil.

But I would be in favor, sure, of hydroganic; something like that, yes.

MR. BRADMAN: What if it was run by the NOP?

MS. BEDDARD: I'm really torn there. I think it needs to be something separate. If the NOP was able to create a completely separate label with separate functions; some similarities, I'm sure, would be there, with promoting biodiversity and being sustainable and renewable.

But I just don't think it can be the same USDA organic seal that everybody is used to using now for soil organics.

CHAIRMAN CHAPMAN: Thank you, we have to move on. Up next is Dave Chapman, followed by Gerald Davis. Dave, if you could start with your name and affiliation.

Mr. DAVE CHAPMAN: I try to keep it exciting here. I'm Dave Chapman from Long Wind

Farm, and I am a farmer; I think you probably all know me by now.

And I was also on the USDA task force, so I have actually investigated this issue a lot. I also have a number of close friends who are serious hydroponic growers, and I would just say they're all very proud of how they grow.

They're not embarrassed by it; they don't think it's secondary in any way. I know there's a famous comment in a C2F board meeting by a member who said, Hydroponic is better than soil growing.

So that's a different point of view from mine, and they've always rolled their eyes at me growing in the soil, thinking that it's kind of cute and old-fashioned.

The NOSB has decided twice now in the last seven years that hydroponic should not be called organic; firs in 2010, and again in the famous non-binding resolution, both of which passed overwhelmingly.

So it's interesting that the

discussion now is whether container growing is hydroponic, and it's an important discussion because probably over three-quarters of the currently certified organic production comes from two producers who are saying they are not hydroponic; they're container growers.

So I brought a container -- just a little fun and games, here. This is a container; this is maybe the size that you might grow a tomato in, in a hydroponic system.

This is a block of coco coir, which is used in about half of the conventional hydroponic production in the world. And Tom re-approved, and when you wet it, it expands to about eight times the size that it is now. And it kind of looks like soil.

So it's easy to say, Well, that's not hydroponic, but this is how most hydroponic production looks like for tomatoes, cucumbers, peppers, berries. If you just feed this water, it dies, it starves to death. If you feed it a nutrient solution, then it thrives.

The bioponic folks are saying, Yes, but we have biology with compost. However, they're saying, We can't add more than 10 percent of the volume as compost, or it doesn't work.

So it's not really a soil-based system, and again, if you add water, it dies. If you add a nutrient solution, it thrives. And that makes it hydroponic.

So just to get -- this isn't complicated. This is a simple thing. None of my hydroponic friends would say, That's not hydroponic. Of course this is hydroponic, whether you add the compost or not.

Now, I think it's a fair debate about whether hydroponic is better than organic; but it's not a fair debate about whether this is hydroponic. This is hydroponic.

What they do is, feed a lot this, which is 16-0-0; a nitrogen, hydrolyzed soy protein -- which, if you mis-mix it, will burn the roots off the plant, according to John Spargo at Penn State. So it's a hot thing, very much

like a conventional fertilizer. I'm sorry I can't go further.

CHAIRMAN CHAPMAN: Thank you, Dave. Questions for Dave? Harriet, then Emily. I'm going to have to stop it there.

MS. SMITH: I might ask Amri this question, but that hydrolyzed soy protein; does that come from a GMO source?

Mr. DAVE CHAPMAN: Better ask; better ask Amri that. I don't know.

CHAIRMAN CHAPMAN: Emily?

MS. OAKLEY: I want to ask the same question; if you support the crop subcommittee's motion on containers in the proposal?

Mr. DAVE CHAPMAN: Yes, my answer is similar to Anais'; I would far away prefer to have the EU standard, that organic should be in the ground; I think it's less complicated.

I do believe that you can have something with about 95 percent of the benefits of in-the-ground in a big container with a real soil compost blend. I do support passing the

proposal. I actually believe it's the last chance we're going to have to save the national organic program. I think this is it.

Divisive issue that's never going to go away, unless it gets resolved at this meeting, so I hope you will pass it.

CHAIRMAN CHAPMAN: Thank you, David. Up next I have Gerald Davis, followed by Davey Miskell. Please start with your name and affiliation.

MR. DAVIS: Gerald Davis, Grimmway Farms. I represent Grimmway Farms; I'm also an ex-NOSB member. I actually worked on the 2010 greenhouse and container-growing hydroponic recommendation, and my comments today are on that subject.

Grimmway Cal-Organic is the largest organic vegetable grower in the U.S., topping $500 million in sales in organic vegetables.

We grow 26 different crops year-round, primarily on land which is owned by the farm. Grimmway is family owned and managed, founded by

the Grimm brothers as shown here about 20 years ago.

Today, the next generation of Grimm family sons are taking their place, each in separate production, handling, and sales management areas.

Cal-Organic has grown with the organic consumer demand by transitioning over 38,000 acres of conventionally-cropped land into organic.

This land did not magically turn around through simple input substitution of organically-approved materials, but took years of compost applications, green manure, cover cropping, and proper crop rotation to be nurtured to healthy soils.

One by one, these individual farms are being stewarded through the healing process toward quality, high-yield organic vegetable production, matching or exceeding our conventional division yields within the company.

It takes time and commitment to

organic principles, which includes financial commitment to not take shortcuts. Outdoor container production is one such shortcut that bypasses land stewardship and soil ecology development altogether.

This production system does not follow many sections of the organic regulations, and virtually ignores the intent of organic principles of land stewardship.

Such outdoor operations that have sprung up in California have been wrongly certified, since no statutory standards exist to exempt them from adhering to land sections of the law.

Greenhouse production; at the request of one of our most valued retail grocery customers a few years ago, we conducted what turned out to be an eight-year feasibility study of organic greenhouse tomato production. We spent millions on this; we know very well the answers to some of the questions you are asking about this method.

It is our opinion that containerized production is merely a shortcut to bypass the expensive and time-consuming process of organic certification. We say, Let the hydroponics production method develop its own marketing label, based on the merits of their system; not ride the coattails of a successful label that doesn't match their methods or goals.

Any questions?

CHAIRMAN CHAPMAN: Thank you; Steve?

MR. ELA: Could you elucidate, in your greenhouse systems, what sort of fertilizer program you're using; what percent is liquid, what percent is non-liquid?

Mr. DAVIS: Initially, when we started it in the late 2000s, when I was still on the board, it started out as about 25 percent compost; coco fiber, rock minerals, mycorrhizae, other bacterial inoculants, and we extracted our nitrogen from stable, mature compost.

We did that for two or three years, until the wonderful compost we had acquired ran

out. After that, we switched to seabird guano sources from South America. Eventually, the last material we were using was -- we did use some fish over the years; that was smelly and not very nice.

And then the last material, the last couple of years, we just used sodium nitrate. Eventually, we closed the facility and it's for sale. We have decided this is not what we would call an organic system, and don't see it as sustainable.

CHAIRMAN CHAPMAN: Dan?

DR. SEITZ: Yes, can you elucidate a little bit further on why you don't see it as sustainable? I mean, what are the discreet factors that really drove that decision?

And also, in terms of the quality of the produce, whether flavor or nutritional content or whatever; was that a factor at work in your decision?

Mr. DAVIS: The quality of the produce, from time to time was pretty good. But

a lot of times, it was not so great. Feeding tomatoes soluble nutrients day in and day out leads to a lot of problems.

Whitefly infestations without pesticides that really control them is a big problem, and whitefly can do very, very well on soluble- and nitrogen-fed tomatoes.

Bacterial diseases like Clavibacter gave us a ton of problems. Again, it's well known that feeding soluble nutrients -- nitrogen -- to plants tends to lead to more disease. And we really discovered that in a very difficult and expensive way.

CHAIRMAN CHAPMAN: Emily and Harriet, and then we'll have to stop it there.

MS. OAKLEY: As someone who worked on the 2010 recommendation, could you give us your opinion about how the crop subcommittee's proposal fits in line or not with that?

And I don't want to disparage the minority view, but there have been some that feel that it is more in line with the 2010

recommendation, and I wondered if you had an opinion about that.

Mr. DAVIS: My basic thoughts on your recommendation; when I was on the board, we worked on the pasture recommendation for years, and we thought we had a very good, very definitive rule that we proposed, and it eventually became a rule. We just made the recommendation, obviously.

I see your recommendation as what will be subject to the same pitfalls. You will think that it's a good compromise, and you're trying to set up a system that you think will satisfy both sides. But with what we see with the scofflaw organic dairies that get away with it year after year and not pasturing; there's ways around your recommendation, if it's put into law.

You can't feed a crop in a container on only 20 percent of the total nitrogen need of the crop. It becomes a hydroponic system after a few months, even if it's super well-constructed; lots more compost. Eventually, in a nine-month

tomato crop, it runs out, and for at least the second half of the crop, you have a 100 percent hydroponic system.

And the reason I say that is sort of like what Dave Chapman just said in a simpler way. If you withhold the nutrient feed, the crop stops, and it will not harvest anymore within just a week or two.

And so yes, that's 100 percent of the need of that crop is coming from that; so how do you put a 20 percent level on it? I don't see how you can do it; I don't think it's enforceable.

CHAIRMAN CHAPMAN: Thank you. Harriet, and then we'll move on.

MS. BEHAR: Many of the currently organically-certified hydroponic producers will have an economic impact if we vote in the current crops committee recommendation. If that fails, would there be an economic impact on your operation if more and more hydroponic operations are carrying the organic seal in the marketplace?

Mr. DAVIS: Not sure; I know there is a large vegetable farm on the west coast that is waiting, I hear, to see how this board and the NOP eventually comes up with rules, and to see if their floating lettuce program will be allowed. They would love to make that as organic.

So yes, if they were able to do that and pull that one off, then yes. I don't know where it would lead. When I helped craft that recommendation, I had no clue that seven years down the road, there would be vast acreages of containerized blueberries and raspberries and so on and so forth, proliferating through California, basically doing what I was suggesting we should allow for greenhouses; to construct a good soil and make it as much like real soil as possible, biodynamically and everything.

So the unintended consequences of what I helped craft, I'm sad to say, I'm sad to see it come to what it has.

CHAIRMAN CHAPMAN: Thank you. We'll have to move on now, but thank you for your

comments.

Up next is Davey Miskell, followed by Tom Beddard. Davey, you can start with your name and affiliation.

MR. MISKELL: Yes, my name is Davey Miskell; I have half-acre organic greenhouses in Charlotte, Vermont. I'm also a co-founder with Dave Chapman on Keep the Soil in Organic.

And I think, with what we've proposed and the work we've done with farmers around the country, that you're going to see happening, rallies that were the past month. I'm sorry that you're not able to hear the comments of the farmers; It didn't work.

Well, that's typical. So the 18th rally of Keep the Soil in Organic was today. I know a few of you came; I'm sorry that all of you weren't able to come.

And they came from all over the United States, as well as Costa Rica and England. It was farmer-driven, and if the farmers like myself and Dave Chapman and a number of the other

farmers were completely concentrating on this issue, we would have had a couple hundred rallies around the United States, and at least 10 to 20 in other countries, but we all had to farm as well.

So it's amazing what's happening. And I think for me and the people at the rallies, the first rally was at the NOSB meeting at Stowe, several years ago. And at that meeting, Miles pushed intensely on organic integrity.

For me what's happening is, the true organic integrity is here; what's behind the screen here. It's the farmers like myself, as well as young farmers like Anais, who have this commitment to soil; have a commitment to the true precepts that are in the OFPA regulations and rules.

These regulations and rules, what we've heard back from, whether it's Dru Rivers, who is one of the longer-term organic farmers; or Eliot Coleman as well; organic has always meant soil. And it's meant living soil, and it's meant

improving the environment through our farming practices.

That is not possible with containers; it is not possible with hydroponics, which are the same thing.

The other aspect that came out in these rallies -- sorry, there was a previous one of Tom Newmark, one of the leaders of the regenerative.

I'm sorry my time is up. Any questions? I'd be glad to answer.

CHAIRMAN CHAPMAN: Thank you, Davey; questions?

MR. MISKELL: I do support the crops committee proposal; I think it's putting a finger in the dyke.

CHAIRMAN CHAPMAN: Thank you, Davey. Harriet?

MS. BEHAR: Are there any hydroponic organic operations in Vermont?

MR. MISKELL: We prohibit it. Vermont organic farmers do not certify any hydroponic or

container operations.

MS. BEHAR: And there are sufficient organic foods available in Vermont?

MR. MISKELL: Yes, in fact there's an abundance. It's pretty competitive. We have a lot of young farmers coming up. Quite a few of them don't want to be certified because of the denigration of the organic standards by the national organic program.

CHAIRMAN CHAPMAN: Thank you. Up next is Tom, and Jim Gerritsen is after Tom, although we will be pausing for a brief five-minute break after Tom. We are running significantly behind at this point, so only five minutes, and I will be strict on that one.

Sorry to have to do that right before your announcement, Tom. You can start with your name and affiliation.

MR. BEDDARD: Yes, Tom Beddard, Lady Moon Farms. This is my fourth time in front of you folks to testify in support of soil in organic, and I always have a really well-written

three minutes, right down to the second.

I'm up with here with nothing, because I said to myself, You know what? This is the fourth time, man. Either you get, or you don't, Tom. And I'm wondering if everyone watching me right now is going to get it.

Because here's my first question: If we brought in 500 first-graders, and had a tub of soil or this; and we said to them, Where's the soil?

They would all know; there would be no, Well, I'm not sure.

And I think it's the same with pasture. You ask kids, What is a pasture? This is easy stuff, and I'm hoping that all of us can agree to what seems very common sense.

Also, it's not every day you get to have something really important in your life. For instance, I'm here to try to keep Asa in one piece. And I would say, You know, Asa? I don't know why you're torn. I think we're at a crossroads in history. And I think this is

really, really, really important stuff.

Organic is soil; it just is. I mean, I get that there's economic interest on the other side. But, you know, it just isn't organic, and it's too easy to be organic. Organic is hard.

Cropking, one of the biggest suppliers to the hydroponic community, they said on their website, The word hydroponic give no marketing benefit, and raises questions and negative responses among the general public, compared to the more desirable word, organic, which commands a premium price in the market.

This is what the other side is interested in. Organic is soil; it always was, it always will be. It's what brought me to it. There's nothing like a handful of soil, living and alive, and just full of strength.

Backyard Farms, a well-respected hydroponic tomato grower in Maine; Our plants are grown hydroponically and are non-GMO-certified. We are not organic because we do not grow in soil, which is a prerequisite for organic

designation.

And I say again, get a class full of first-graders and say to them, Is this soil? I don't think any of them would say yes.

So it's my hope that we can possibly bring this long-standing debate to an end, and keep organic, keep the soil in organic.

As I like to say, What do we want? Soil. Where do we want it? In the ground.

Thank you all for listening.

CHAIRMAN CHAPMAN: Thank you, Tom.

(Applause.)

CHAIRMAN CHAPMAN: Emily, then Steve.

MS. OAKLEY: So if you want soil in the ground, would you agree with the CONSCIOUS motion on containers, or would you prefer to see production stay in the soil, in the ground?

Mr. BEDDARD: I'm totally for production in the soil in the ground. However, you're trying to get me in trouble with my daughter. I mean, this is the thing; compromise is what moves us ahead, and it's what's keeping

us behind in Washington for the last, I don't know how many years.

So it's so hard; I generally believe in compromise. But my gosh, I believe in the soil maybe more, and I'm fearful that the compromise will be too hard to fully enforce.

CHAIRMAN CHAPMAN: Thank you, Tom. All right, so I'll give you a little bit more than five minutes. It's 4:22; we're going to start back promptly at 4:30. Jim Gerritsen is up first, followed by Linley Dixon; I recommend you guys get here on time. We'll be starting up promptly.

(Whereupon, the meeting regarding above-entitled matter went off the record at 4:22 p.m. and resumed at 4:31 p.m.)

CHAIRMAN CHAPMAN: Okay, we are going to get started. We have a quorum of the Board present. First up is Jim Crawford, followed by Linley Dixon. If the public would please move their conversations outside or quiet down so we can take testimony. Thank you.

Again, if the public could please end their conversations or move outside. Jim, you could start with your name and affiliation for the record.

MR. CRAWFORD: Yes, I'm Jim Crawford. I'm an organic vegetable farmer in Pennsylvania and a member of the Board of Directors of Cornucopia Institute also.

When I became an organic vegetable farmer in 1972, 45 years ago, the first thing that I did was to make a trip through Emmaus, Pennsylvania. Sort of a pilgrimage, to familiarize myself with the work and ideas of J.I. Rodale, the originator in the USA of the concept of organic agriculture.

That trip started my life-long education in organic farming, and that education was all about soil. How biologically active, organically managed soil could grow healthier plants and cleaner, more nutritious food with the least negative impact on the environment.

Since that trip, soil building and

soil management have always been the primary focus of our farming efforts. Most of us here today, if we have ever heard of J.I. Rodale, I hope most of us have, would have to agree that J.I. Rodale would roll over in his grave if he heard us talking, considering calling hydroponic or container production organic.

I have an analogy that I think is useful. We all here would probably agree that human-caused climate change is a reality. Anyone with any common sense knows that we must listen to the scientists on this subject.

The only people trying to question climate change are the corporate players and their supporters who stand to profit mightily by having us continue to burn fossil fuels.

Same case with the question of hydroponic or container production being called organic. Anyone with any common sense knows, especially if they've heard of J.I. Rodale, that soil is the basis of organic farming. The only people trying to challenge the basic principle of

soil in organic farming are corporate players and their supporters and others who have access to far more capital and much higher level of technology than I have as a farmer.

The only people trying to challenge this basic principle are those who stand to profit mightily by removing the soil from food production while still calling that food organic.

I have no quarrel with hydroponic or container food production itself. But it is a travesty to describe this as organic. That is the plain and simple effort to profit from the word organic while failing to honor the most basic definition of the word.

In honoring the memory of J.I. Rodale, I agree with my fellow organic farmer Elliott Coleman, who says, quote, organic must mean grown in biologically active soil, connected to the Earth, and illuminated by the sun, end quote.

Thank you.

CHAIRMAN CHAPMAN: Thank you. Question, Steve, and Emily?

MR. ELLIOTT: I have a question on nutrient cycling. How do you see the difference between soils in containers or hydroponics liquid feeds on how nutrients are cycled and sequestered and taken up and released.

MR. CRAWFORD: Well, how do I see the difference in nutrient cycling?

MR. ELLIOTT: Yes, what would you, I mean you're talking about the benefits of soils and such --

MR. CRAWFORD: Nutrient cycling in soil based agriculture is, happens in the soil. In nature. Nutrient cycling in hydroponic agriculture happens in man-made barrels or whatever.

MR. ELLIOTT: You see, well, I'll leave it at that.

CHAIRMAN CHAPMAN: Thank you Steve. Emily?

MS. OAKLEY: You said grown in the soil, so does that mean that you would or wouldn't support the CS motion for container --

MR. CRAWFORD: I would not support any compromise, no.

MS. OAKLEY: Okay, thank you.

CHAIRMAN CHAPMAN: Thank you Jim.

MR. CRAWFORD: Thank you.

CHAIRMAN CHAPMAN: Up next is Linley Dixon, followed by Fred Kirschenmann. Linley, you can start with your name and affiliation.

MS. DIXON: I'm Linley Dixon. I'm a Policy Analyst for the Cornucopia Institute, and I have a farm in Durango, Colorado.

Yesterday at the NOP meeting, the concept was put forward about whether the organic community should be realistic or idealistic when it comes to organic policy in particular and I actually really appreciated that thought exercise because I went home and, or back to my room, and I thought about it a long time.

I come out of academia and that made me want to be more compromising and realistic. But at the same time, I thought about environmentalism and imaging that the pioneering

farmers were more realistic than idealistic and where would we be today?

And I'm wondering if it's idealistic to think that we should have to share the label with mono-culture farms, hydroponic containers, confined to animal operations. Is that too idealistic to think that we shouldn't have to do that?

I think these operations are only temporary as long as there is cheap oil. So, from an environmental perspective, which the organic movement really is, we need to look beyond that. The time to be realistic has passed. The time to get organic right was yesterday. From an environmental standpoint, it's do or die time.

The frustrating thing I think to everybody who has been organic for a long time is that organic policy makers don't know what organic is anymore. If you ask farmers why they choose to be certified, the first thing they say is because we want to let our customers know

everything that we are doing.

We are rotating animals on pasture. We're multi-species cover cropping. We're composting. We are, we are, we are. Oh, and as a side note, because we are doing all these things, we don't really require very many inputs, their amendments.

I can't tell you how frustrating it is to have to explain those really basic fundamental truths about organic farming to policy makers, changing organic to mean only approved inputs used is completely redefining organic.

Real organic is well-defined by law. But there is a failure to properly certify it and enforce it. I've seen these operations first-hand. I don't know how they're certified. To hide these failures is to participate in them.

Many of us promote the organic label regardless of its disappointments. Cornucopia tries to promote real organic farming and help consumers find it. Real organic farmers are not only knowledgeable, but they are idealistic.

They're deep thinkers in sustainability. Wise leaders. Inspirations to us all.

They have taught us that real organic farming is as much a way of life as it is a means of making a living. They taught me that I can be the change that I want to see in the world. After all, they were the change that we all wanted to see, and they are why we are here today.

Many young people are choosing this way of life.

CHAIRMAN CHAPMAN: Thank you. Questions? Ashley?

VICE-CHAIR SWAFFAR: Thank you for your comments. I'm not going to ask you about hydroponics. I actually have a question about livestock from your comments.

Would you know anything about that?

MS. DIXON: I don't, I do cross work mostly. But I can put you in touch with the person who wrote the oxytocin comment I'm assuming.

VICE-CHAIR SWAFFAR: Yes.

MS. DIXON: That was hotly debated.

VICE-CHAIR SWAFFAR: Yes.

MS. DIXON: Among our farmer members.

VICE-CHAIR SWAFFAR: Thank you.

CHAIRMAN CHAPMAN: Harriet.

MS. BEHAR: So, as a beginning farmer, why did you choose soil-based agriculture instead of hydroponic?

MS. DIXON: Because all the organic farmers that I worked for were such heros to me. I guess there's not a hero in the container movement that's an environmental hero. Maybe if there was one I would be onboard. But I do fundamentally believe that they are very different systems and like many people who have said to before me. I'm not going to go around damning container systems or hydroponic systems. They are just different systems.

CHAIRMAN CHAPMAN: Ashley?

VICE-CHAIR SWAFFAR: So I am going to ask you a question now.

So I hear you talk about organic farms and how they are better than hydroponic farms. Is your farm certified organic?

MS. DIXON: No, but we are in the process of doing that right now because we have moved our farm four times in the last seven years. And we've been on land that previously has been sprayed in those times. So it's been very difficult for us to acquire land, but we are quickly remedying that.

CHAIRMAN CHAPMAN: Thank you. Up next is Fred, followed by Madison Monte. Fred, start with your name and affiliation for the record.

MR. KIRSCHENMANN: Well, thank you, I'm Fred Kirschenmann and I appreciate the opportunity to speak to the Board. I was, as probably most of you know, one of the first National Organic standing Board members, and so that was back a while.

And I think that one of the issues that I would like to bring to our attention is that, I think that most of us tend to try to deal

with challenges that we're facing based on our current circumstances and how do we make the current circumstances a little better?

But I think it's important now, at least from my perspective, that we begin to recognize that we're going to make some major transitions now over the next 20 or 30 years. That's going to have a major impact on the way in which we produce our food.

And the major changes that we are going to see is that we have had now, for almost a century, a highly input-intensive kind of food and agriculture system. Whether those were synthetic inputs or natural inputs, it was very much moving in terms that we had those natural resources from which we could get those inputs, and then we would simply focus on maximum efficient production for short-term economic return.

And as we think, as we move forward into the future now, many of those inputs are simply not going to be available anymore. What

are some of them? They are fossil fuels. They are minerals. They are fossil water. They're, add into stable climates.

So we are going to see some major, major changes which is going to require us to really rethink our food system, and an input intensive system will no longer be possible for us. So we have to think about a food system that will become essentially self-renewing.

And there were, of course, people of great wisdom in our past, Aldo Leopold being one of them and already back in the 1930s he advised us that we should think about land health as the major focus. And by land, he meant the entire biotic community. Everything from microbes in the soil to us as humans. And as he said, we were not, we as humans were not the conquerors of the land community. We were simply plain members and citizens.

And we had to learn how to manage that natural system in terms of land health and land health, he said, was the capacity of land for

self-renewal. And that's the kind of future we have to think about as we don't have all these inputs.

And this is where, I think, the issue of soil becomes so important. Because if we are really looking at a food system that is self-renewing, then the microbes in the soil and the life in the soil are the basic foundation for the rest of the life of that land community.

And so I think for us to even consider within organic, to have a system that is not dependent on that self-renewing capacity, then this is the wrong direction for us. And we will find ourselves at some point in the future, no longer being able to adapt to that.

CHAIRMAN CHAPMAN: Thank you Fred. Emily?

MS. OAKLEY: One of the arguments that we've heard often from proponents of hydroponics is that we need hydroponics to feed a growing population and to supply the demand for organic food, but you are stating an opinion to the

contrary. That, in fact, we need soil-based organics because of the inputs that are heavily reliant in the hydroponic system. Is that correct?

MR. KIRSCHENMANN: Well, first of all, I think there is a problem with that perception that you just said, that we need to produce more food in the future. We are currently producing enough food to feed 10 to 12 billion people. But with only 7 billion people, we've got almost 2 billion that are chronically hungry.

So it's not a question of adequate production, it's a question of poverty. It's a question of access. It's a question of a whole range of social issues that we have to address.

And we also have to come to terms I think with as we think about if our human population continues to grow, all we have to do is figure out how to feed them, you know. How are we going to feed 9 billion people by the year 2050 which is something that we hear all the time.

And from my point of view, it's not if the human population continues to grow. What we have to come to terms with is another issue that, although Leopold brought to our attention, that is the problem of density of any species. And as he pointed out, this is not just the density of species out in the environment, it's also the density of the human species.

And as he pointed out, was that from his observation, anytime that any species reaches a density which it puts it out of the integrated whole of, again, renewing the life of the whole, then nature always reduces that density.

And as he said, if one system fails, she will find another. And so I think we have to start thinking about our human population. Not in terms of simply being able to feed them, but the carrying capacity within again the land, the health of the land as a whole and what our role as humans are within that capacity.

CHAIRMAN CHAPMAN: Harriet?

MS. BEHAR: Do you think that the

Organic Food Production Act supports a self-renewing agriculture system?

MR. KIRSCHENMANN: I'm sorry, what?

MS. BEHAR: The Organic Food Production Act. Do you think that addresses some, kind of frames organic as self-renewing?

MR. KIRSCHENMANN: Well, you know, when I was on the National Organics Standards Board, there were several of us on the Board that felt that we should add soil health into the equation for a requirement for certification because we felt that was kind of foundational, at least at that point.

So we actually, the Board finally actually fully agreed to that. And so we put into our recommendation that soil health, the maintenance of soil health should be a requirement for certification.

And then, I didn't know this at the time, but when we forwarded that to the NOP and then they in turn forwarded it to the attorneys, and so the attorneys have to always approve of

these kinds of recommendations. And when they got it, they, the attorneys threw it out because they said regulations have to be answered with a yes or a no.

And soil health is too complex an issue. You can't answer that with a yes or a no.

And that's how we ended up with that, you could certify a product organically so long as it didn't use any synthetic inputs except those on the approved list that was a yes or a no.

And as long as you only use natural inputs except those on the unapproved list, that was a yes or a no.

So that's how we ended up with a certification system that was primarily based on the inputs rather than renewing the health of soil, which again, I think is pickative, particularly as we look ahead 20 years from now when we are not going to have all these natural inputs.

And, incidentally, there is another

resource I would highly recommend to anyone that questions the diminishing of resources, natural resources, in the future. And that's Ugo Bardi's new book called Extracted, which is now a Club of Rome study.

And he goes into more detail than anyone else that I know of. All these natural resources that we are not going to have available plus in the future.

So we really have to rethink about the whole way in which we as humans are going to live on the planet to make it more self-renewing system.

CHAIRMAN CHAPMAN: Thank you Fred. I have to stop you there. We are going to move on, given our time, but Fred, thank you for your comments.

Up next is Madison followed by Mark Kastel. Madison, if you could start with your name and affiliation.

MS. KEMPNER: Okay. New name. My name is Maddie Kempner, now. And I'm here on

behalf of the Northeast Organic Farming Association of Vermont.

I want to start by sincerely thanking you all for your hard work and for this opportunity to address the Board, and I'd like to comment today on the crux of the Committee's proposal on hydroponics and container production.

Normally when I address the Board, I try to give a balanced representation of the views of our members and certified farmers, but since so many of our certified farmers are here in person this week, I guess I can just speak for myself.

As I've testified many times, NOFA Vermont and Vermont Organic Farmers believe organic production means in the soil, in the ground.

You've heard a lot of testimony this afternoon from hydroponic and container producers around some of the reasons they have adopted these production methods, such as limited land base or water scarcity.

These may all be perfectly good reasons to use hydroponic growing methods, but they are not reasons that that production should be called organic.

Hydroponic production may be an appropriate response to certain site-specific limitations or challenges, but it is not the response we need to address the greater crises of our time, such as climate change, declining bio-diversity and protecting and replenishing a threatened and depleted supply of clean water.

Organic as a whole eco-system approach to agriculture is the answer, and it starts with soil. Increasingly, we are beginning to understand the immense potential of soil to sequester carbon and reverse climate change.

For generations, organic farmers have worked tirelessly to build soil health, fertility and biology. Looking to the future, that soil and that knowledge is exactly what we need to meet the ecological challenges of our time.

Some have argued that to say organic

growing needs to be in the soil represents an antiquated way of thinking. That it's anti-innovation and close-minded and stubborn.

As a bona fide millennial, I am here to argue exactly the opposite, except maybe the stubborn part.

I want to argue that soil is not only the foundation of organic, it is also the future of organic.

Thank you.

CHAIRMAN CHAPMAN: Thank you. That was quick.

MS. KEMPNER: Yes, I didn't expect it to be that short. Feel free to ask questions.

CHAIRMAN CHAPMAN: Questions? Dave?

MR. MORTENSEN: Yes, I appreciate your comment about being a millennial. I teach and work with a lot of young folks and I've been surprised on the public comments that I've heard the pro-hydro folks saying, you know, this is a young person's thing. And in soil is an old person's thing. I mean I've heard it several

times.

Could you talk a little bit more about your perception of your generation's view on sustainability and resource use and stewardship?

MS. KEMPNER: No pressure. Yes, I'd be happy to.

MR. MORTENSEN: Just in general.

MS. KEMPNER: Yes. No, absolutely. Thank you for the question.

I think there are a lot of folks who argue that hydroponic is an innovative growing method and I think it's attractive to a lot of young farmers because they're often, have more trouble accessing land.

And so it's a growing method that allows production in areas where there is limited land access or where land is really not affordable to new farmers. And I really, as a young person who has farmed, I empathize with those challenges.

Again, it doesn't make it organic. And I don't think that it's really taking the

long view. I think that soil, like I said, research is increasingly showing the potential of soil to reverse climate change. And I think that's also something that my generation is really focused on and trying to attack head-on.

And by maintaining organic production as a growing method that values soil, I think that's one way of taking the long view, I guess, and maintaining organic as a system that really represents ecological regeneration and true sustainability.

MR. MORTENSEN: Thank you.

CHAIRMAN CHAPMAN: Emily?

MS. OAKLEY: One of the Vermont farmers, Davey Miskell, who spoke, said you have a hard time getting young and beginning farmers to get certified organic. I'm wondering if you share that view and what we might do to try to reverse that trend.

MS. KEMPNER: Yes, I think that's another really good point. And I do see that trend. And I, one of my colleagues actually

recently compared the view of a lot of young people, and I don't mean this in a disparaging way at all, but compared that to sort of younger generations' views on feminism, where, you know, I grew up in a world where relatively speaking, women do have a lot of equal opportunities and are able to pursue dreams and goals.

And so it's easy to sort of disregard or forget all of the ground work that was laid in the feminist movement and in creating that relative equality. And I think for young farmers it's often kind of the same situation where they come into farming with a lot of the same values of ecological stewardship and a lot of the same sort of approaches that older farmers take. But they almost in some ways and, again, not to be disparaging, may take that for granted. And may not feel that certification is necessary because they do feel like yes, I'm meeting those standards.

And maybe they're doing a lot more direct sales so their customers know that. So I

think probably really more education about what organic means and also maintaining the integrity of organic is really important for its future. And I think by allowing in more technologies that don't really meet the spirit of what organic is supposed to be, I think it puts if further at risk actually, rather than making it more attractive to young farmers.

CHAIRMAN CHAPMAN: Thank you.

MS. KEMPNER: Thank you.

CHAIRMAN CHAPMAN: Up next is Mark Kastel followed by Jim Gerritsen. Mark, if you could start with you name and affiliation for the record?

MR. KASTEL: Hi, I'm Mark Kastel. I'm the Co-director of the Cornucopia Institute and a former certified organic fresh market vegetable producer.

This meeting is your chance to end corruption at the National Organic Program. Here's the pattern.

During the Bush Administration, we

discovered that Big Pharma was adding genetically mutated DHA algae oil to organic infant formula and formal complaints were filed.

Career civil servants at the NOP sent a letter to the certifier involved, stating it appeared to be illegal and to explain. Instead, they lawyered up and went to the NOP director, who ordered the staff to retract their letter.

This corrupt decision was reversed during the Obama Administration and the NOP, the NOSB put the material on the National list. With an annotation. It could not be processed with Hexane. But in a big favor to the industry, since there's no Hexane-free DHA oil, years later, the rule has never been published.

When the country -- turned down by two certifiers when they wanted to certify a small porch as quote, outdoor access, the NOP director at the time overturned the certifier, and ordered them to certify the porch. Also illegal. DHA legal. This is illegal.

As both the USDA and corporate

lobbyists pay lip service to the deliberative process at the NOSB, three materials including whey protein isolate, where voted off the list unanimously but when the draft rule was published, one sentence from the lobbyists at the OTA overruled the entire Board and the entire public process, sunset process. Legal, but unethical.

Now you folks have a decision about hydroponics. OFPA is clear. It requires, quote, careful fostering of soil fertility. It's required by the law. How can you foster soil fertility without soil?

But a past NOP director, in a secret collusion with some of the largest certifiers, quietly allowed giant industrial operations to start producing organic products hydroponically, many in containers, quote, containers. Illegal. Organic consumers are becoming more sophisticated. Many want to purchase organic foods not just because they are produced without toxic chemicals, but because of the superior

flavor and nutrition. You don't have the right - there's a slide show on that tape. It's not playing. Okay. I hope you will give me a few more seconds since we are having technical difficulties.

So this is your chance to protect the true meaning of organics, rather than making it a mere marking slogan. Like the EU, we call on you to reject the potential rulemaking that would legislate and legalize hydroponics and container growing.

Instead, please make the bold statement, asking the USDA to enforce OFPA and the current regulations.

CHAIRMAN CHAPMAN: Thank you Mark.

MR. KASTEL: Otherwise, I went over just a couple.

CHAIRMAN CHAPMAN: Thank you Mark.

MR. KASTEL: Thank you.

CHAIRMAN CHAPMAN: Any questions for Mark?

MR. KASTEL: To address, Ashley, if

you have a question concerning organic livestock, I run that team at Cornucopia.

VICE-CHAIR SWAFFAR: Great. Okay, I'll ask you that, Mark. So on your comments on oxytocin, you said that you would support their relisting but only with an annotation --

MR. KASTEL: Can you talk closer to the microphone? I can't hear you.

VICE-CHAIR SWAFFAR: Okay. So on the oxytocin, you said that you would support relisting with an annotation. And we heard from a lot of farmers that they don't need it. Did you hear from a lot of your members that they needed it?

MR. KASTEL: We heard from some that it was an important post-reproduction tool. We heard from some, we heard from many farmers that said they don't require and they don't need it and use alternatives.

If you read our comments, we want to make sure that there's really rigorous and robust language that would control its usage because

there is a history with oxytocin of abuse being used as a production tool.

And that would be obviously contrary to a philosophy of organic, caring for your cattle in a natural manner. And would not be consistent with consumer expectations that hormones are not used in organic livestock production.

CHAIRMAN CHAPMAN: Harriet?

MS. BEHAR: You are aware that the livestock subcommittee voted to remove oxytocin from the National list and so would you support that as the Chair of Cornucopia?

MR. KASTEL: We wouldn't vigorously oppose that and our information, our testimony was for information trying to deliver a message for some of the livestock producers out there. Dairy producers who voiced a preference.

We went out with a questionnaire to our membership and that was the response we got from probably a minority but a sizable minority of the comments that we received back.

CHAIRMAN CHAPMAN: Lisa?

MS. STOKKE: Can you just quantify in numbers what that sizable minority --

MR. KASTEL: I'm sorry, I don't have that with me.

MS. STOKKE: Okay.

CHAIRMAN CHAPMAN: Dave and Ashley, we'll have to stop it there.

MR. MORTENSEN: Mark, you covered a number of subjects during the course of the three minutes, and could you give us a sense and, again, I'm big on mental sensitivity analyses. What is the scope of the hydroponic decision in relation to some of the other things you covered in its importance?

MR. KASTEL: Well, I'll give you two macral aspects to your question.

MR. MORTENSEN: Thank you.

MR. KASTEL: One, and I'm sorry the slide show didn't work. The scale of these production facilities is not illustrated by this oral comment. It's mind boggling.

These are some of the largest multi-million dollar complexes with many, dozens of acres under glass. Most of the hydroponic production in America today comes from the desert Southwest and Mexico. It comes from Holland and other countries where it is illegal to label in those countries.

So organics was formed, when I got involved in organics as both a grower and then doing consulting work for some of the larger farmer cooperatives and the Farmers' Union.

This was an economic justice vehicle. Family farmers have been crushed. This was an opportunity to have a more loving and respectful relationship with our customers.

So we've been rewarded for, these folks are riding our tail. They want the marketing cache of the organic label without doing the heavy lifting. And this dovetails into your other aspect of your question.

We know why consumers first come to organic food. And it's selfish. And there's

nothing wrong with that. It's hard-wired into the, it's all brain stemming. Chemistry. We want the safest and most nutritious food for our families. Children are involved. Very emotional.

We used to fight other peoples over hunting lands and gathering rights. But we are seeing more and more, a higher percentage of organic consumers are becoming sophisticated enough to understand the differences between nutritional content in organic food, both in livestock and crop production.

I'd like to cite one study that the USDA conducted in 1950 that was replicated in 1999. They looked at the essential nutrients in fruits and vegetables and they have found that a third of them went down as much as a third during that 50 year period. That's one of the reasons people turn to organic foods, is they think they are paying a premium for a premium superior product. And just eliminating toxic chemicals and growing them in a semi-inert media and liquid

fertilizer isn't organic. I hope that answers your question.

MR. MORTENSEN: Thank you.

CHAIRMAN CHAPMAN: Thank you Mark. Ashley? No? You're good? Okay. Thank you Mark.

MR. KASTEL: Thank you very much. And I have 5,000 signatures here, a very high percentage from farmers who would ask you to pass a resolution supporting OFPA instead of what's on the table right now.

CHAIRMAN CHAPMAN: Up next we have Jim Gerritsen followed by Johanna Mirenda. Right now we are running 40 minutes behind. Jim, we can start with your name and affiliation? Is Jim's mic on?

MR. GERRITSEN: Okay. Jim Gerritsen, I'm a farmer on Wood Prairie Family Farm in Northern Maine.

CHAIRMAN CHAPMAN: Go ahead Jim.

MR. GERRITSEN: Okay. We've been farming for over 40 years. We farm 56 acres.

Our primary cash crop is organic seed potatoes which is a crop that is hard on the soil. For that reason, we have a long rotation, and at any one time two-thirds of our soil is in cover crops. And at this moment, every bit of our land is in cover crop, including land that we finished harvesting potatoes on three weeks ago. So we value soil, as my friend Jack Lazor says, if you treat the soil well, the soil will treat you well. And that's our motto that we live by.

So, I am circulating around a piece by Bart Hall-Beyer, a colleague who was not able to make it here, but he's an experienced farmer and inspector who has inspected almost a million acres and his believe is that hydroponic operations are inherently un-inspectable, and I think it's important that you consider that. Those are his comments and I am presenting them, handing that to you on his behalf.

What I want to relate, we've been farming 40 years. In addition to that, I served as a volunteer on the MOFGA Certification

Committee for 25 years. So I would make, probably, monthly, 300 mile round trip meetings for 25 years. And one of the things, when I started in the mid-80s, I was on a subcommittee that was giving input to Kathleen Merrigan working in Senator Leahy's office, and coming up with the OFPA language for the Organic Foods Production Act.

What was plain to all of us working on that was that soil was the foundation of organic. And I think that the various problems that we have in organic today comes from a failure of the National Organic Program to live by the spirit and the letter of OFPA and I think if they would do that, then a lot of these apparently complicated problems would go away.

So I think a lot of the problem has been the NOP's failure to enforce OFPA. I think OFPA was a very well done, not perfect, but a very well done law, and I think proper enforcement would resolve this. And that means the spirit of OFPA is in the soil in the ground.

And I think that's what the NOSB should be supporting, and I think that's what NOP should have been enforcing themselves right along. And I think the mess we're in now is because the USDA made a gross mistake in interpreting that hydroponics was okay maybe ten years ago.

And now we're on a slippery slope and I think we have a real problem trying to correct this basic mistake. But ultimately NOP needs to enforce OFPA.

CHAIRMAN CHAPMAN: Thank you Jim. Emily?

MS. OAKLEY: So the same question. You don't support the compromise position of container growing definition or motion?

MR. GERRITSEN: I support OFPA and the spirit of OFPA is in the soil in the ground. So if I were a member of the NOSB, what I would do is make a motion on a non-substantial change as a substitution and encourage the USDA NOP to enforce OFPA and that includes in the soil, in the ground.

CHAIRMAN CHAPMAN: Harriet?

MS. BEHAR: I find this test written testimony by Bart Hall very interesting, having been an organic inspector myself and I had not really thought about that. Because it's relying just on liquid inputs and three days before the inspector shows up, you just take the other stuff out and bring the organic in. Because I know I spent many, many hours out there in the field and I carried a little trowel and we dug around. I mean, we were in the soil and that was a very important part of the organic inspection was really looking at the soil.

So I just find that somewhat compelling and something I hadn't thought of.

MR. GERRITSEN: That's why I'm sharing it. Bart had hoped to make this meeting and he wasn't able to, and I thought the content of that is so important in your consideration. I don't think it's enforceable if it's passed.

CHAIRMAN CHAPMAN: Thank you Jim. Up next is Johanna, followed by Lisa Stokke.

Johanna, you can start with your name and affiliation.

MS. MIRENDA: Good afternoon. My name is Johanna Mirenda. I'm the technical director at OMRI, the Organic Materials Review Institute. To start my comments, I'll reiterate one issue from our written comments regarding the handling subcommittee's proposal to change the classification of potassium acid tartrate from a non-agricultural synthetic substance to an agricultural non-synthetic substances, and move the substance from 605 feed to 606.

OMRI agrees with that proposal to classify potassium acid tartrate as an agricultural substance and a non-synthetic substance. This decision aligns with the policies and definitions provided by the NOP in the Final Guidance on Classification of Materials.

We encourage the NOSB's continued use of these guidance documents on the classification of materials to assess petition materials and to

evaluate listed materials during sunset. Your activities in this regard are essential to bring accuracy and consistency to the classification of Nationalist materials as synthetic or non-synthetic agricultural or non-agricultural.

And to end my comments, I'll mention one thing regarding the inerts working group. At the Fall 2015 meeting, the NOSB passed a recommendation to revise the annotation for inerts on the National list and at long last, finally resolved the pesky annotation referencing EPA List 3 and 4 which have been obsolete for over a decade.

The inerts working group made regular updates at these meetings in preparation for that recommendation so I'm respectfully encouraging the Board to continue updating the organic community with the progress of implementing that recommendation. Thank you.

CHAIRMAN CHAPMAN: Harriet, then Dan.

MS. BEHAR: I warned you about this.

MS. MIRENDA: I'm ready.

MS. BEHAR: So tobacco dust, nicotine sulfate, is on the 602 as a prohibited natural in cross-production. However, if it's growing in a field, somebody could be using as a cover crop or could that be done? How about a compost feed stock? And how about as a para -- an external parasiticide for livestock? Would any of those uses be allowed in OMRI's point of view?

MS. MIRENDA: In terms of growing tobacco and tilling it into the soil, from OMRI's perspective, just based on general conversation, not something that's come across our organization for formal decision, but that seems totally allowable by the standard. Whereas an input material formulated with tobacco dust or any other type of material that could be assessed under the Standard of Identity of tobacco dust, nicotine sulfate, that would be prohibited as a crop input material.

MS. BEHAR: Compost feed stock?

MS. MIRENDA: As a compost feed stock, we I believe OMRI has seen whole tobacco leaves

used as a compost feed stock and we generally did not think that was a prohibited use, dictated by 205-602. Part of the discussion is some concern about the Standard of Identity of what is on the National list as tobacco dust is being prohibited.

My understanding of the NOSB's deliberations in developing the National list is that nicotine derivatives were being discussed as the prohibited natural material but what we see on the National list now is tobacco dust.

So this could be a good candidate for a technical report to get a really firm grasp on the many different materials that might be commercially available and which ones are specifically prohibited by that listing on 602.

CHAIRMAN CHAPMAN: Thank you. Dan?

MS. MIRENDA: For livestock use? It's a non-synthetic, not on 604 allowed.

CHAIRMAN CHAPMAN: Dan.

DR. SEITZ: Occasionally I hear that with hydroponic operations there are materials or

inputs used that are proprietary. And just as someone who's not in the field as a public member, are the materials that you sell, are they proprietary in terms of what the formulations are or would someone buying them know exactly what's in the material that you sell but the person who uses the product might not wish to divulge its contents.

So I'm just trying to understand how proprietary works in terms of your products or someone who might be using them in their operation.

MS. MIRENDA: Sure. So when a input manufacturer applies to OMRI for verification, they're required to disclose in full their entire formulation, including the full manufacturing process of every ingredient.

So OMRI knows all of that proprietary information. One of the benefits of applying to OMRI is that we keep that confidential as opposed to that manufacturer going to every certifier, giving their information, and every certifier

making their own determination.

So OMRI keeps that information confidential and in place we publish all our policies for how we evaluate brand name materials on our website and in our Standards manual so that our, the process for our decision-making is transparent but the individual formulations are protected.

DR. SEITZ: So are you saying that if a certifier wanted to know what was in this substance, the product, they would not have access to that. They take on faith through the procedure that you have published that, indeed, it doesn't have any prohibited substances.

MS. MIRENDA: That's correct. And our contracts include a clause that, should the NOP require OMRI to disclose information in order to resolve a conflicting materials decision or to assess our practices that they're in line, that we will share that information with the NOP.

CHAIRMAN CHAPMAN: Thank you.

MS. BAIRD: I do have to follow up on

that. If a manufacturer applies to a certifier and they would reveal that proprietary information to that certifier as well. Not necessarily just to you. I think there's misconception there. Certifiers, if they apply to an individual certifier, they do have to supply that proprietary information.

MS. MIRENDA: Yes, that's true.

CHAIRMAN CHAPMAN: Thank you. Up next is Lisa, followed by Michael Bessencon. Lisa, if you can start with your name and affiliation for the record.

MS. STOKKE: Thank you Tom. My name is Lisa Stokke and I'm a Founder and Executive Director of Next7.org. And you will see on the screen behind you the number of people that I'm here to represent. It says 86,269 people and counting because it's going up rapidly by the minute. We've actually gotten 70,000 in the last 24 hours, just alone, to say that they care about this issue.

So I'm going to tell you about the

petition and what it is, since I am here to represent exactly what this community of people have signed.

It says, we stand with the community of organic farmers and consumers that rely upon organic food and agriculture for not only the nutritious and clean food that it provides, but also as the solution for a sustainable future through regenerative agricultural practices.

The organic farmers that pioneered the organic revolution decades ago did so in the interest of our health and that of the soil, plants, water and animals to create a system of agriculture we can pass down to the next generations.

Organic consumers understand that when they purchase organic food, it is an investment in our future, our planet, and their personal health. All of which are interdependent and inseparable. What we do to the Earth, we do to ourselves. Which is why so many people have chosen to eat organic food for the promise of a

hopeful future for ourselves and also Earth.

The currently permitted organic certification of hydroponically grown food in recent years has deceived consumers as it is not grown in the soil and in accordance with traditional nor certifiable organic practices. Consumers have come to expect and rely upon healthy food grown in the soil when they buy organic which is based upon the regulatory framework in partnership with organic farmers in the U.S.

It is disingenuous at the very least to allow the production and sale of this food as organic. Hydroponic food does not meet organic standards as set forth by organic farmers and subsequently passed NOS feed boards and the National Organic Program. Allowing hydroponics to be certified as organic erodes the public trust and the organic label and is a great disservice to the farmers whom we rely upon.

OFPA specifically states, an organic plan shall contain provisions designed to foster

sole fertility primarily through the management of the organic content of the soil through proper tillage, crop rotation and manuring.

Hydroponically grown food, plants that receive their primary nutrients through an artificial feeding tube instead of the fertility health and vitality of the soil, are not qualified to be certified as organic and therefore should not be.

CHAIRMAN CHAPMAN: Thank you Lisa. Any questions for Lisa? Thank you Lisa.

MS. STOKKE: Thank you for your time.

CHAIRMAN CHAPMAN: Up next is Michael, followed by Jeff Moyer. Michael, if you'd start with your name and affiliation for the record.

MR. BESANCON: Thanks for the opportunity to speak to you. My name is Michael Besancon. I'm representing Patagonia and 17 other brands of organic, organic brands in the industry.

Personally, this is my 48th year selling organics. My last position when I

retired was Senior Global Vice President of Purchasing, Marketing, and Distribution for Whole Foods Market.

It's our believe that the inclusion of hydroponic in the organic label is detrimental to the label and I think that there's, the conversation that I've heard today is compelling. And the soil and the farmers and all of those issues. But for me there's an overriding issue here on the damage that this will do.

And that is that we all, in the room, or many of us in the room, has our personal brand or our company's brands or associations are organic. And that brand is at risk. We keep talking about a movement but, in a label, but organic is more than that.

Organic is a brand. It's a stand-alone brand. And every marketer will tell you that when the consumer loses confidence in the brand, the sales go down. We see it all the time.

And the, currently, my experience

anecdotally, with farmers, with consumers, with vendors, is there is a lack of confidence in the brand. And I think it's incumbent and essential that this organization, this Board, protect the brand for all of the people in the room and all the people who are in the organic business, that they don't lose their livelihoods and lose something that's incredibly important in, not sustainability, but the regeneration of the planet.

That's the obligation that we have. That's the obligation that I believe you have. And that's what we are asking you to do, is to exclude hydroponics from the organic label, the organic brand. Thank you.

CHAIRMAN CHAPMAN: Francis?

DR. THICKE: Could you tell us what other organizations are on your letter that you're talking about?

MR. BESANCON: Sure. There's 17 of them. There's Amy's Kitchen, Nativa, Nature's Path, Patagonia, Allison Organics, Dan Barber,

Blue Hill, Stone Barn, Demeter, Dr. Bronner's, Elemental Herbs, Frontier, you know, I could go on. There's a bunch. And there would have been a whole lot more if we would have had more time.

I could have put personally 20 more on.

CHAIRMAN CHAPMAN: Dave.

MR. MORTENSEN: Michael, could you give us an example of where a brand loses integrity and sales drop. It's not an area of my familiarity. Could you just give an example or two of that?

MR. BESANCON: Well, one that's not related but is sort of is Chipotle. What, they had a 40 percent drop in share price over the question of integrity in their operation. The integrity and safety of their food that they sell.

And that happens all over the place. If you lose your mission, then you, I could site another one but I won't. It just changed hands and it has a great deal to do with the integrity

of the mission.

CHAIRMAN CHAPMAN: Thank you. Michael, I have a question for you. Your letter mentioned hydroponics. We're talking about a range of operations here from aeroponics, hydroponics, potting soils, soil. Where in that spectrum are those 17 companies drawing the line?

MR. BESANCON: In the soil.

CHAIRMAN CHAPMAN: In the soil in the ground?

MR. BESANCON: In the ground.

CHAIRMAN CHAPMAN: So they do not support crop subcommittee proposal?

MR. BESANCON: You know, I've heard other folks answer that question, and somebody who has the knife that's cutting themselves in half, can I borrow it?

The issue for me is that I would be, my preference, and I believe the preference of most of these folks, is that it be in the soil, in the ground.

But I'm a realist. If we have to

compromise, then we would accept the compromise and that's what the letter says.

CHAIRMAN CHAPMAN: Thank you. Thank you for your testimony. Up next we have Jeff Moyer followed by Roger Noonan. Jeff, you can start with your name and affiliation.

MR. MOYER: Certainly. Jeff Moyer, Executive Director of the Rodale Institute, dairy farmer, and past member of the NOSB.

Members of the NOSB, the NOP and all those in attendance, thank you very much for your commitment to the organic community and for allowing me to have a few minutes of your time to comment on the issue of hydroponics as a certified organic production system.

I'll try to make my few points fairly simple and straightforward. Organic is about soil. Since the word organic was first linked to agriculture it has always been about the soil. Why is healthy organic soil so important? I challenge all you to Google search the word ergothionein. It's the most powerful antioxidant

known to man, only produced by soil fungus and a few mushrooms.

Soil health is not only discussed in organic circles, but now conventional farmers have heard our message and are beginning to listen to what we talk about. At the same time, organic is beginning to talk about farming without the soil. Seems a little ridiculous.

Now, I'm not a lawyer, nor was anyone else on the NOSB who helped write the 2010 recommendation. But we were pretty clear that the idea of growing terrestrial plants without soil isn't organic. Now some folks are trying to redefine the word hydroponic to make us believe that what they're doing is container growing to confuse the issue, I suppose so lawyers can fight about it.

We saw the same pattern happen when I was on the Board with Organic Dairies. Organic is not about efficiency or reducing the amount of farmland used in production. A more efficient way to raise dairy animals is to simply

substitute organic feed for conventional feed, fill the cow's stomach with inert materials like is happening in the conventional world now using spent substrate from hydroponic operations.

And there are more effective water use systems in dairy production than managing cows on pasture, yet organic dairy industry works diligently to facilitate cows that act like cows and express their natural habits of being social, eating grass outdoors on green pastures. Yes, even cows need to be connected to the soil.

Organic is not about a one-to-one substitution. Many farmers new to organic ask this simple question all the time. I can't spray X so can I spray Y?

Always looking for that one-to-one substitution of materials. And certifiers will tell them over and over, it's not about substitution of materials, it's about a systems approach.

Now we want to say one-to-one substitution of conventional nutrient soup for

organically sourced materials is really organic. I can't believe it.

We needed lawyers to define pasture even though school-age children could do it. Now we are going to need lawyers to define hydroponics and container growing, even soil. When school children can do it without any hesitation.

Hydroponics in any way you describe it, is many things, but it is not organic. Thank you.

CHAIRMAN CHAPMAN: Any questions? Steve, and then Dan and then Francis and we will have to end it there.

MR. ELLIOTT: So could you describe in your opinion the difference between carbon sequestration and nutrient cycling between container hydro, I won't define that for you, and soil?

MR. MOYER: Well, clearly, I'm not the person to stand here and give you the data on that. We have a lot of data from our long-term

farming systems trials along with data from other long-term systems trials at the USDA at the University of Wisconsin and Iowa State that all support the claim that farming organically sequesters carbon even when conventional systems don't in those same soil types.

No till is not a solution for that. Even -- at Ohio State will tell you that no till doesn't sequester more carbon. It maybe will hold onto the carbon you have at the very best, but it doesn't do anything to sequester additional carbon.

When you are looking at hydroponics or a container growing, if there is no soil in there, you are not sequestering carbon. The plant itself doesn't sequester carbon. It's the complex interaction between the plant and the microbiology in the soil that actually does the sequestration. So no soil, no carbon sequestration.

CHAIRMAN CHAPMAN: Thank you. Dan?

DR. SEITZ: You mentioned an

antioxidant that's found only in the soil and presumably, the implication there is that the food grown on that soil may also then absorb that, in that someone eating that produce would benefit from that. And I'm just wondering if you have information on the comparative nutritional content of hydroponics versus organically soil-based grown produce.

MR. MOYER: I do not.

DR. SEITZ: And would you know whether such information is available, or is this something, an area that has not yet been researched very extensively?

MR. MOYER: Clearly, I haven't done a literature review on that topic so I would have to say I don't know.

DR. SEITZ: Okay, no problem.

CHAIRMAN CHAPMAN: Thank you. Francis.

DR. THICKE: Jeff, recently some of the large scale hydroponic producers have been saying that if they use some plant material as

their substrate instead of fully inert, that they're no longer hydroponic, even if they are using 100 percent liquid feed, they are now container growers.

You being on the 2010 Board, Chair of that Board, is that in the spirit of that 2010 recommendation for hydroponics, that recommending prohibition of hydroponics, is it clear to you? That if it's you're using 100 percent liquid feed but you are in coconut coir for example, would that have been considered to be hydroponic in the 2010 recommendation?

MR. MOYER: It would have been considered hydroponic and it would not have been considered organic. That's correct.

DR. THICKE: Thank you.

MR. MOYER: Yes, that's why I said, even though a grade school kid can tell you what soil is. Soil is soil. It is not coir mixed with a little compost or a nutrient soup. That's hydroponic anyway you define it. That's correct. Thank you.

CHAIRMAN CHAPMAN: Thank you. Up next is Roger Noonan following by Michael Brownback. Roger, if you could start with your name and affiliation for the record.

MR. NOONAN: Thank you Mr. Chairman. Roger Noonan, Middle Branch Farm, New Boston, New Hampshire, Permit No. 186 by the New Hampshire Department of Agriculture Markets and Food, which does not certify hydroponic operations.

I'm also the President of the New England Farmers Union. I'm a Supervisor on my local soil and water conservation district's board, and I'm speaking today as an organic farmer.

I'm involved in a lot of different things in policy and I'll tell you, this issue is probably the most confounding, the NOSB and the NOP is probably the most confounding. I was probably much happier person when I was just paying attention to my own business on the farm.

I want to thank you all for your service on this Board. I'd been asked to serve

on the NOSB a few years ago and declined that pleasure. And I don't envy the decisions you have to make. So thank you all for your service.

First I want to address another issue. I would urge the NOSB to take the native eco system proposal back. I'm from New Hampshire, a state that was, now 89 percent forested but not long ago was nearly completely deforested for various agricultural reasons.

I'm in a area that's suburbanized now. I don't have many options. Buying new farmland is not an option. We may have to clear some land. I have two adult children involved in the farming business, so I'd urge you to really take a hard look at what native eco system means and what that means to the viability and sustainability of farms that are on that peri-urban fringe.

Additionally, on the hydroponic issue, I mean for me it starts with the soil. I'm not a lawyer. I know more than I should and I just can't read the Organic Foods Production Act,

which I read twice after Miles sent out his farewell email, and I just don't find the space in there. And I understand the quandary. Once you allow something, and it has sort of tacit approval in this case, I'm not really sure how it's existing now, but it's just not in the law. It's not in any of the preamble as others have said. Two-thirds of my ground can be undercover crop at any given time. And then it's undercover crop, well as soon as we finish the Brussels sprouts it will all be undercover crop here when I get home.

How am I even competing on even footing with a hydro unit, and this isn't about size. It's about a set of rules that we all agreed, voluntarily agreed to abide by. And the small farmers, many of them that showed up for this meeting, we don't have an army of attorneys that we can send here and draft very impressive comments for your consideration.

So I would just urge you to do the right thing for the organic label which is the

original sustainability label. Thank you very much.

CHAIRMAN CHAPMAN: Thank you. Questions? Thank you. Up next we have Michael Brownback followed by Jen Berkebile. Michael, if you could start with your name and affiliation.

MR. BROWNBACK: Good afternoon. I'm Mike Brownback. Along with my wife and family we farm Spiral Path Farm in Pennsylvania. We are currently certified by Pennsylvania Certified Organic and have been since its beginning in 1997.

I guess everybody's getting a little winded hearing the same thing, but one thing that I want to talk about. I was around, this is my second time commenting to the NOSB and the first time was at the proposed rule back when it was the Big Three, you know, the sludge, the irradiation and the GMO's. And we've come a long way from then and congratulations everybody.

But I'll tell you one thing. Back then, one of the rationalizations was that we

were going to have reciprocity internationally. And that IFOAM accreditation was going to be something that we'd all have. And I don't understand why the United States is a dumping ground of the world for hydroponics? What's going on here? This is something that's very confusing to me.

As far as following plans for soil improvement, we've taken a farm that was run down that we purchased in 1977 with 1.7 percent organic matter. It's now well over 5 percent. You know, raising organic matter, that is carbon sequestration. I only have a ninth grade education as far as my biology goes, but basically the simple sugars that come from photosynthesis, they go into the soil, the excess.

How can they go into the soil if it's protected by a layer of a container of a raised bed or whatever term we want to use? I don't get it. I'm somewhat confused. Where is our integrity? What do we have for anatomy as a

people if we are willing to turn a blind eye to the facts of life?

We've had many people here eloquently state what is true and what is simple a child can understand. What do we need to do? I don't see anybody in this room that is opposed to hydroponics that is going away. Are any of you guys going away? I don't think so. We're here for the long haul. I do not question the integrity of the NOSB. I question the interaction between the NOSB, the NOP and the USDA. And I have to say also that the USDA has done wonderful things for me as a farmer with conservation help and areas like that, that I think is very laudable, that has been done over the years, and I think we need to continue that and maintain the integrity of what we do. Thank you.

MR. CHAPMAN: Thank you, Michael.

Dave, Emily, and we'll have to stop it there.

MR. MORTENSEN: Mike, could you give

us a sense for the scale, the number of people you're feeding off of Spiral Path Farm, just for the record?

MR. BROWNBACK: Yes. Spiral Path Farm currently is about 250 acres. We have about 80 acres in certified organic produce that we grow. We feed at least 3,000 or 4,000 people in our CSA. We have in the vicinity of 2,000 members. But we also sell to a major retailer.

We would easily provide produce for 20,000 people. Easily.

MR. MORTENSEN: Thank you.

Emily.

MS. OAKLEY: So this question: would you support for crops the pending motion on containers or would you prefer to see soil, growing in the ground only?

MR. BROWNBACK: I'm going to look you all in the eye and say you all know what's right. I believe there is time for compromise. But there's time that I have to be true to Mother Earth. And a terrestrial plant that's evolved

over eons of time with its roots in the soil, I'm going to vote for modifying that? I can't. I cannot support that. I am for the soil.

MR. CHAPMAN: Thank you. Thank you for your testimony.

Up next is Jen Berkebile followed by Alan Lewis. Jen, if you can start with your name and affiliation, and correct your last name if I tortured it. Sorry.

MS. BERKEBILE: Good afternoon. My name is Jennifer Berkebile. I am Materials Program Manager at Pennsylvania Certified Organic. PCO certifies over 1,300 operations.

I wanted to begin my comments by thanking the members of the Board for all of their time and effort. Today I will be commenting on petitions and sunset materials, as well as the livestock proposal clarifying emergency for use of synthetic parasiticides in organic livestock production.

I would like to first comment on oxytocin which is up for sunset and which the

Livestock Subcommittee has voted to remove from the National List. PCO is not taking a position on whether oxytocin should remain on the National List. However, I did want to comment that we have approximately 100 operations that list an oxytocin production on their materials used form, and some have expressed concern to me about the possibility of this material being removed from the National List .

I can't speak for all of these producers, but it's my general understanding that the majority do not use it often or maybe even once a year but, rather, they just like to have it available for very rare situations such as collapsed uterus or other medical emergencies.

I would like to briefly comment on the petition for elemental sulfur for use as an external parasiticide pesticide for organic livestock. Again, PCO is not taking a position on whether elemental sulfur should be added to the National List. However, PCO has received requests from over 100 producers to review and

allow elemental sulfur for this use.

Finally, I wanted to reiterate our written comments on the proposal clarifying emergency use of synthetic parasiticides in organic livestock production. PCO appreciates the work of the subcommittee to flesh out the acceptable use of synthetic parasiticides in organic livestock production, however, the structure and language in this proposal lack clarity. It is unclear whether paragraphs 1 through 4 are optional or mandatory. If they are mandatory it is unclear whether all are mandatory prior to the use of a synthetic parasiticide or whether one is sufficient.

I will refer the subcommittee to my written comments to view some suggested edits to the proposed language.

Thank you for your time and for the opportunity to comment.

MR. CHAPMAN: Harriet then Emily.

MS. BEHAR: With regard to the oxytocin, do you think that your producers could

have an opportunity to learn some of the natural materials because there's many -- there are alternatives out there? And the larger milk buyers have said that they do not support relisting.

So I understand wanting to have a material on the National List, but part of our criteria is that if there is a natural alternative and we should be looking at not approving a synthetic.

MS. BERKEBILE: Right. And we do, again, have about 100 producers with it on their materials use form. But I would say maybe we have 500 organic operations in total that have cows. So, you know, only on 100 out of 500. So presumably some of our producers have found some other working alternative.

So I do assume that maybe the ones that are using it could find alternatives if they are out there.

MR. CHAPMAN: Emily.

MS. OAKLEY: I wanted to ask you about

Vitamin B1. You said that you weren't taking a position on any of those materials but listed that there were six products that contained a blend of C, E, and B1.

MS. BERKEBILE: Uh-huh.

MS. OAKLEY: So I know that's your position, but I just wanted to ask, given the fact that the technical review was very clear that B1 is not effective for that use would you see it as a limitation if we did remove it from the list?

MS. BERKEBILE: I don't know that I would see it as a limitation. But, again, I'm not an expert in the efficacy of that at all. And that's only a handful of products. So I really think if it was removed it might not have a great impact.

MR. CHAPMAN: A-dae.

MS. BRIONES: So you mentioned that you have producers who are encouraging the listing of elemental sulfur. Can you just give me a sense of how many producers you represent?

MS. BERKEBILE: Yes. I think about 100 producers I would say would like to have that listed for that use.

MR. CHAPMAN: Thank you.

Thank you. Up next is Alan Lewis followed by Howard Prussack. Alan, you can start with your name and affiliation.

MR. LEWIS: Alan Lewis from Natural Grocers.

Hello, NOSB. This is my eighth comment on hydroponics. I'm sure, Francis, you won't miss the ninth.

Natural Grocers, 42 -- 62 years old, family run, 142 stores in 19 states. We are one of the pioneer companies that set our own standards in the '50s, '60s, and '70s. Did our own inspections when we had to, and were very happy when the certifiers at the state level came onto the scene.

We are very much focused on education. In fact, we consider ourselves an education company. We have educated four generations of

our customers. We are also known for being organic plus because in very many instances the organic standard is not enough for our customers. That includes free range, open range eggs, pastured eggs. It means pasture-based dairy. It means grass-fed beef, lamb, and bison.

We educate our customers on those issues and we create a market for those standards and work with the vendors to meet those standards based on just shorthand, regeneration, added nutrition, economic opportunity, rural development, climate change, reduction of pesticides, renewable certifiers, and a synthetic load of chemicals in our bodies and environment.

So our customers come to expect transparency in everything that we do. And they come to expect continual improvement. So imagine our surprise in the last month and few years that a group of certifiers and certified organic operations are putting hydroponic produce unlabeled and unannounced into the marketplace.

And imagine our customers' surprise

when we have to put up labels saying "organic, just kidding, also hydroponic" because all of those things that we teach as values and as science and as critical attributes of good agriculture and healthy nutrition are suddenly suspect.

Secondly, imagine our surprise when we try to go out and find berries and cucumbers and peppers and they're no longer available because the hydroponic industry has largely captured that market, taken the price premium, but left the dirt-in-the-ground organic growers high and dry.

So please consider the millions of customers, the vanguard of organic demand that we and retailers like Mom's Market and PCC and others have developed over the last several decades. If we don't move on this issue and put hydroponic where it is, then Natural Grocers will again continue down the road of organic plus.

Thank you.

MR. CHAPMAN: Thank you, Alan.

Dan.

DR. SEITZ: Could you elaborate a little bit more on the point you just made about the difficulty of finding peppers and tomatoes, or whatever the produce you've mentioned, grown by soil-based farms; are you saying that the hydroponic operations to some degree are driving out certain types of produce because of a price differential? Or can you just unpack that a little bit and explain the nature of the economics at work there?

MR. LEWIS: Thank you, Dan.

First of all, it has to be particular to regions and seasons. But what hydroponic operations, as other people have mentioned, what they offer is continual harvest 12 months out of the year at a lower cost. And so the seasonal harvesters, say in Colorado or other places, -- I'm most familiar with Colorado at this point -- you get in a train wreck with the distributors and the supply chain. Because if someone has a contract for delivering identical, blemish-free hydroponic vegetables week after week after week,

then the guy with dirt on his boots, developing the soil, making his family's -- making ends meet for his family might knock on our door and say, "I've got cukes, I've got berries, I've got some peppers for you," but there's no -- that becomes a disruption and a problem.

And his prices, or her prices, are typically higher than the hydroponic prices.

Does that help you figure this out?

DR. SEITZ: Yes. Thank you.

MR. CHAPMAN: Thank you.

Sue.

MS. BAIRD: Yes. Thank you for developing the market, Alan. I wanted to follow up with that because, you're right, seasonally, at least in Missouri it's pretty hard to grow tomatoes and peppers in the wintertime.

So, that being said, I hate this me or thee thing. Would you be -- would you endorse a label that would say hydroponic organics, or whatever we would call it, so that there is clear transparency?

MR. LEWIS: Yeah. I think that is the proper direction. As I said, if you have a clean, as regenerative as possible, nutritious hydroponic operation, preferably closer to an urban center, then that should be USDA process verified operation. And then we can backtrack and reestablish our education for our customers to maintain that transparency and that continual improvement.

Because where you're headed is otherwise I get organic, dirt-grown tomatoes from, who knows, New Zealand, you know, all winter long. And that's another problem.

MS. BAIRD: Thank you.

MR. LEWIS: You're welcome.

MR. CHAPMAN: Albert -- sorry, Ashley and then Steve.

MS. SWAFFAR: So a little bit more on that label compromise. I think what we're saying here is it wouldn't be USDA process verified, it would be that -- some of us would say that -- it would be this logo and say hydroponically grown

or something like that. Would you support that?

MR. LEWIS: No.

MR. CHAPMAN: Steve.

MR. ELA: So I'm a grower and not a -- well, I guess I am a marketer in some ways, but you see many more people. And we've heard testimony and received comments that consumers are looking for more organic produce, you know, this is a market increase.

But what I heard you say, and correct me if I'm wrong, please, is that your consumers and your stores want soil-grown, but there is a difference. And so could you elucidate a little more on consumer preference because that's something that's come up a number of times and I think it's a little cloudy as to how that falls?

MR. LEWIS: So part of the background that I left out is we only sell organic produce. So, you know, just focusing again on Colorado, which you're familiar with, 3- or 4-month harvest. For you with stone fruit, a 3-week harvest. I don't know what you do the rest of

the year.

PARTICIPANT: Take vacation.

(Laughter.)

MR. LEWIS: Florida.

So these value, these subjective value issues about family farms, biodiversity, environment, fossil fuels, carbon sequestration, animal and human welfare, all of those roll up and largely get resolved on the biodiverse organic family farms that are represented by many of the farmers on the NOSB now and in the room.

That's what our core customer is. Now, that's a million people out of 350-some million consumers, but it's also a lot of households. And that's concentrated in these areas where we have our stores. So it is a holistic view of health in life a new generation, and that generation, that generational view seven generations down, as Ms. Stokie might say.

So that it is a safe, blemish-free 52-week-a-year production system is largely irrelevant to the core values and the core

science that our customers understand.

MR. CHAPMAN: Thank you, Alan.

MR. LEWIS: Thank you.

MR. CHAPMAN: We're going to move on at this time. Up next is Howard, followed by Paul Harlow.

Howard, if you can start with your name and affiliation for the record.

MR. PRUSSACK: Yes. My name is Howard Prussack. I represent my own farm, High Meadows Farm in Westminster, Vermont. And thank you to the Board for allowing me to speak. It's hard work doing what you're doing. I respect it.

I started farming in 1971 as an organic farmer. I don't know if there's very many more people in this room who might have a older legacy than I have. And what that means is, yeah, I've been doing it for a long time and it's given me a perspective. I've watched this industry grow. It wasn't an industry when I started. Nobody organic. We had like one or two books that even gave us any guidance, and we

really had to struggle and fight and define the information that we needed to perfect it and go forward. And sometimes we failed.

And it was tough going for many years. It was a small niche. Now it seems it's an international industry that's huge, and it's the fastest growing component in the agricultural and food grocery stores. And all of a sudden everybody wants to be organic.

I've earned a certain credibility from my time doing this -- 40-plus years -- the trust and respect of people in my farming community and, most importantly, my customers who have come to depend and count on what I do and my other compatriots in the industry who are small organic farmers.

I'm not going to violate that trust and that respect that they've given me. When they buy food from me, when people buy organic food they expect it, they assume it's grown in soil. That's what they think. You know, no sleight of hand should be done that would erode

that trust.

I'm not against hydroponics. They really need their own label. I don't want to see a compromise saying organic hydroponic as that's going to muddy the water and confuse customers. We've built a brand, as somebody's mentioned earlier, and I don't want to violate that trust. All the hard-working men and women and families that put their lives and their blood into this industry should not be disregarded.

The people, our customers, respect that. They know that. We've created a legacy. And as we move forward into the future that's really all I'm working for is to leave a legacy that people could live by of organic farming is people growing crops in the soil that's going to leave the Earth better than when we got here. And that's, that's the charge that we're faced with, leaving the Earth in a better place, not a worse place.

Thank you.

MR. CHAPMAN: Ashley, Sue, then Emily.

MS. SWAFFAR: So you do tomatoes in a greenhouse; is that correct?

MR. PRUSSACK: I do tomatoes in a greenhouse in soil.

MS. SWAFFAR: Can you tell me your crop rotation? How do you -- what do you do there?

MR. PRUSSACK: It's Vermont so I don't grow year-round. We're a seasonal farm. It's we grow the tomatoes when they're planted in the ground in April. We just finished harvesting last week. It's an unusually long harvest season for us that's great. We clean up the greenhouse. We apply compost early, early spring and till it in and plant tomatoes.

So that's it. There's no other crop that's grown in those tomato greenhouses, it's just tomatoes. It's one greenhouse.

I have other greenhouses that we grow in the soil raspberries and a few other minor crops. But mostly we're an outdoor production soil farm.

MR. CHAPMAN: Sue.

MS. BAIRD: Yes. I really am amazed at the volume of production that you're doing. Can you tell me what your soil fertility inputs are that you use? I know that you mentioned compost but you've got -- what are you using?

MR. PRUSSACK: We do, it's a -- Well, in the field or in the greenhouse? What are you referring to?

MS. BAIRD: Both.

MR. PRUSSACK: Well, in the field we do extensive green manure crops. Some of the green manure we leave for a year or two years. And sweet clover, peas and oats. We do apply compost and pelletized chicken manure that we get from New York State.

MS. BAIRD: And in the greenhouse?

MR. PRUSSACK: Well, the greenhouse, as I said, we just, the tomato house is only a tomato house. That's all we grow. And we just apply compost.

MS. BAIRD: Do you see a difference in

chicken manure that is composted just on the ground, or maybe not, raw? A lot of people use just raw chicken manure? Do you see, would you see a difference -- and you don't I'm sure on your vegetables -- but in grain crops they do. Would you see a difference in that versus putting it in a solution and liquefying it and spraying? Because I see that as well in organic field crops.

MR. PRUSSACK: I don't use liquefied manure. I'm not sure of the question. Would I see a difference? I suppose I would.

I've been using the same system for many years. It grows a really tasty tomato. I don't think I'm going to change. Tomatoes are just one of the crops we do. But it's a key crop. People, people love it. We've got a good reputation for what we grow.

MS. BAIRD: Thank you.

MR. CHAPMAN: Thank you.

Emily.

MS. OAKLEY: Same question, do you

support the CS compromise motion on containers or would you prefer to see it in the soil in the ground?

MR. PRUSSACK: I didn't quite hear that. I'm sorry.

MS. OAKLEY: Sorry. Would you prefer to see it in the soil in the ground or would you support the CS compromise motion on containers?

MR. PRUSSACK: I'm a ground-based, I'm a soil-based farmer. Container growing is container growing. It's, you know, apples and oranges. It's a different, totally different thing.

When people buy a tomato they expect it to be grown in soil. If it's not it should, it should say that. You know, they can have their own.

We have our story, a hard, you know, won, fought story. It's a great story, you know, the story of small organic farmers all across this country. They should develop their own story.

MR. CHAPMAN: Thank you.

MR. PRUSSACK: You know, whatever it is.

MR. CHAPMAN: Thank you.

MR. PRUSSACK: All right. Thank you.

MR. CHAPMAN: Up next is Paul Harlow followed by Michael Collins.

Just so you guys know, it's just after 6:00 o'clock now. We have ten more commenters. So we are looking to track till about 7:00 o'clock at night. I know the agenda said it was 6:15, but given the questions we've had we will go until we have completed the list.

Paul, you can start with your name and affiliation.

MR. HARLOW: Right. I'm Paul Harlow. I'm a 300-acre certified organic farmer in Westminster, Vermont. I'd like to speak against hydroponics as a certified organic.

I'd like to make my comments as in the avenue of the history of my farm. My grandfather started the farm in 1917, so that's 100 years

ago. He was a -- milked a few cows, grew some vegetables. He was basically an organic farmer.

My father took over in 1950; followed the same regimen. Although, as farmers did after World War II, we started using some chemicals, mostly herbicides I believe. He sold his cows in 1965. And he and I grew vegetables for about 10 years together to pay the taxes and keep the farm alive somewhat.

And at that time I was doing things that I had learned through the Extension Service: applied 10-10-10, spray atrazine, and certain chemicals that, you know, reduced the weed pressure.

I took over in 1974. And I started to see things that were troubling to me. The wind blew the dirt more than I remembered. I couldn't find worms that I had as a kid when my father would plow. I started seeing weeds that we couldn't control. Nutgrass, it seemed like no matter how much atrazine or whatever chemical we applied that nutgrass seemed to thrive.

So, surprisingly to me, at sort of a young age I realized that I was the caretaker of this land for future generations and that it was very important that if this land was going to survive I had to change what I was going to do. It was important to me that this land needed some more attention, and I was not doing the right thing.

That's when I started looking into organic. Actually Howard, the previous witness, was in my town and I got some information from him. I did a lot of reading, a lot of trial by error. It took me 10 years to become certified.

I remember picking sweet corn out there when there were so many weeds I questioned what I was doing. But I persevered. And now I have about 300 acres from that 30 or 40 acres. And we use a lot of cover crops. My farm is a very thriving farm. I believe that I did the right thing. Our land is just, it's productive, it's doing the right thing.

And I guess I'd like to end by

thinking of a comment that a UVM agronomist of years ago, he would say, I would argue that what I was doing for those 10 or 15 years is similar to what hydroponic growers are growing, that I was just throwing stuff into the soil that was not doing anything for that long-term life of that soil, and that I was not promoting the long-term fertility and life that I needed to do to make sure that my soil was good for the rest of eons I guess.

Thank you.

MR. CHAPMAN: Questions? Ashley.

MS. SWAFFAR: Do you grow tomatoes in a greenhouse?

MR. HARLOW: I do not.

MS. SWAFFAR: You don't?

MR. HARLOW: I'm just an outside grower, yes.

MS. SWAFFAR: Organic integrity.

MR. CHAPMAN: Emily.

MS. OAKLEY: Okay. Sorry for continuing to ask the same question.

MR. HARLOW: Sure.

MS. OAKLEY: But would you support the CS motion on containers with the compromise that we came up with or would you prefer in the soil in the ground.

MR. HARLOW: Totally soil in the ground.

MR. CHAPMAN: Thank you.

We'll have to move on now. Up next is Michael Collins followed by Jim Riddle on deck.

And, Michael, if you can start with your name and affiliation.

MR. COLLINS: I'm Michael Collins from the Old Athens Farm in Westminster, Vermont.

I've been farming organically since 1989. I sell locally in Southern Vermont and am known primarily for my tomatoes. I'm asked weekly at farmers' market if my tomatoes are organic. They are.

Too often the next question is, Are they hydroponic? For close to 30 years I've answered that no, that would be an oxymoron.

When I started farming the organic standards were set locally. Every year a group of farmers would get together and vote on the standards. These people's motivations ranged widely, and the standards we passed reflected our disparate priorities, whether they concerned which chemicals we would be permitted to use, the health of our soil, our environmental footprint, or the treatment of our animals.

We also worked hard to educate our customers and improve the value of the organic brand, which we did successfully. As the share of organic food in the marketplace increased, so did the corporate and governmental interest. Control of the organic label was given to the federal government on the pretext that a uniform standard would benefit consumers and farmers by using interstate and international trade, and ensuring that all states maintain the same high standards.

Many of us feared at that time the opposite outcome. In New England the vast

majority of organic farmers believe that soil is an integral part of the organic agriculture. Mislabeling hydroponic produce as organic is at best confusing our customers. It would be a watering down of the label we worked so hard to create.

Thank you.

If you don't want to ask any questions I'll get out of here faster anyway.

(Laughter.)

MR. CHAPMAN: Ashley.

MS. SWAFFAR: Do you grow tomatoes in a greenhouse?

MR. COLLINS: Yes, I do.

MS. SWAFFAR: Can you tell me your crop rotation?

MR. COLLINS: You're kind of fixated on a crop rotation, which I'm thinking is demonstrating a little lack of understanding of process of growing tomatoes in a greenhouse. There is no crop rotation in that case. And, and we fertilize and give the crops what they need.

Everything is cleaned out at the end of the year so that pests can go away.

We bring compost in, more compost than most people can imagine. We're fertilizing primarily with alfalfa meal and wheat bran. I don't know why I use wheat bran. Just some old Japanese guy told me it was good.

MR. CHAPMAN: Dave and Emily, and we'll stop there.

MR. MORTENSEN: Yes, I just was curious. Could you, could you just tell us a little bit more about the fertility program, and then once you plant the tomatoes in the house are you, are you dripping a nutrient solution into the house?

MR. COLLINS: No. The way it's working is our plants are in the soil. And the soil is covered with actually nutrient film plastic. It's kind of ironic just because it's heavy duty but which keeps the moisture in the soil beds. And if the roots are strong enough and the plants are healthy enough those roots

will grow right up onto the surface of the soil.

And we can fertilize with, you know, hard fertilizer, alfalfa being one of my favorite. We can use blood meal if we're getting low on, we'll use something a little bit quicker. And we also need to add potash in the form of sulfated potash.

MR. MORTENSEN: Thanks.

MR. COLLINS: But that's all, that's all not liquidly added.

MR. BRADMAN: Tom, can I ask one more question?

MR. CHAPMAN: We had Emily and then you.

MR. BRADMAN: Oh, okay. But you're not closing it down?

MR. CHAPMAN: I am. Emily.

MS. OAKLEY: I just want to ask the same question about container compromise which I will just also preface we would anticipate to include some composts and/or soil in it versus in the ground only with no containers. What's your

preference?

MR. COLLINS: Well, my preference is in the soil. And it's just a simpler option.

I mean, if you're asking what my preference is it's just straightforward. And it's also much easier to grow something in soil because the soil is doing its job. I mean it's difficult enough as it is being ahead of the nutrient curve in a way. But I really can't imagine doing it in a container.

MR. CHAPMAN: Thank you, Michael.

Asa.

MR. BRADMAN: I probably should have been asking this of more people, but in terms of outside inputs like compost, and you mentioned alfalfa, I'm curious what different products do you truck or bring into the farm? And do you have an idea of what percentage of fertility? Kind of maybe off site we can talk more about that but.

MR. COLLINS: It would be really hard for me to tell you the percentage of off site

fertility exactly. But I'm buying mostly alfalfa meal; that's off site. And if we use blood meal, that's definitely off site.

We were talking about that earlier, that's generally not coming from organic production. The, especially the blood meal. You know, back in the old days we used to use fish meal but after mad cow the price of that went out the, out the roof.

MR. BRADMAN: Right. Right.

But you are trucking in, it sounds like, a number of inputs from off the farm onto the land?

MR. COLLINS: Yes. We need to truck inputs from off the farm.

MR. BRADMAN: And your production is dependent on that?

MR. COLLINS: That's an interesting question. I mean I -- the question, could I get around it with the greenhouse tomatoes? Probably not.

With my outdoor production and with my

greenhouse greens? Yes, I could, just because of the different timing of the nutrient needs.

MR. BRADMAN: Right. Thanks.

MR. CHAPMAN: Thank you.

Up next we have Jim Riddle followed by Charlotte Vallaeys.

Jim, if you can start with your name and affiliation for the record.

MR. RIDDLE: Jim Riddle, Blue Fruit Farm, Winona, Minnesota. I also chair the Minnesota Department of Ag's Organic Advisory Board, as well as the Steering Committee of the Organic Farmers' Association, which is unique in that only certified organic farmers vote on our policies and leadership.

And we do have some policy positions from OFA that are being passed out. And the OFA members did vote in support of the Crop Subcommittee's recommendation on hydroponic.

I'd like to offer comments on my own. And beginning by saying that the labeling of hydroponic products as organic is illegal. OFPA

6513(b)(1) states "an organic plan shall contain provisions to foster soil fertility." It "shall" not just it "should."

And it goes on to say, 6513(g), "an organic plan shall not include any production or handling practices that are inconsistent with this chapter." Soil-less production systems are inconsistent with OFPA. And they do not comply with numerous provisions of the regulation which have been enumerated by the Crops Subcommittee in your recommendation.

But you missed one. And that is in 205.601(j)(6) the listing of micronutrients has a very important annotation. And that says that "soil deficiency must be documented by testing." Now, that doesn't mean the deficiency of soil. That links soil to the use of micronutrients that it must be documented by testing deficiency of those micronutrients.

It also doesn't comply with the NOSB's own principles of organic production and handling. The first sentence reads, "Organic

agriculture is an ecological production management system and promotes and enhances biodiversity, biological cycles, and soil biological activity."

I served on the NOSB from 2001 to 2006. During that time we adopted recommendations on organic greenhouse operations. And it was proposed that we address hydroponics. And I and other members of the Board at that time felt that it was so far outside the scope of the law that we didn't address it. We had other priorities, as you have lots of other things on your table as well.

I'm sorry that we didn't. I'm sorry that we did not nip it in the bud. And there are companies that have made bad business decisions, and consumers are being deceived, and bona fide organic farmers are facing unfair competition from this sector. So I urge you to prohibit hydroponic products in your recommendation since it's already prohibited in the law. And this discussion of having a label attached to the word

"organic," you can't even consider that. There couldn't be transitional organic --

MR. CHAPMAN: Thank you, Jim.

MR. RIDDLE: -- even though transition is part of the process, but there couldn't be a label for that.

MR. CHAPMAN: Thank you, Jim.

MR. RIDDLE: Thank you.

MR. CHAPMAN: Questions?

MR. CHAPMAN: Jim, I have a question. So your term of service was from 2001 to 2005; did I get that right?

MR. RIDDLE: Six.

MR. CHAPMAN: Six.

MR. RIDDLE: Six.

MR. CHAPMAN: 2002 to 2006?

MR. RIDDLE: No. Five years.

MR. CHAPMAN: 2001 to 2006. My math is not so great today.

Did you read the proposal in its entirety? There's a history section at the very beginning.

MR. RIDDLE: Right.

MR. CHAPMAN: And you, you just stated that you did not resolve it at the time because you thought it was so far outside the standards it couldn't possibly be considered organic, and yet at the same time repeatedly during that time frame the organic program was telling the NOSB, as documented in the transcripts, that they considered hydroponics under organics.

So if it was so clear at that time, why did NOSB not take the action that you're advising us to take at this time?

MR. RIDDLE: Yeah. Well, if you recall, and maybe you weren't there, but the program at that time also issued four directives that had to be retracted because they were done without consultation of the Board. That was another one, it wasn't retracted, but it was done with no consultation of the NOSB. So we didn't have a say in that. Yes, the program took that position but the Board was not consulted.

MR. CHAPMAN: I hear that. But can

you point to meetings that occurred where you guys directly objected to it or raised concerns?

MR. RIDDLE: No, I cannot point to. There were, transcripts were started during about the middle of my term. There was a very foggy record for some of those early ones. But I do recall that the Crops Committee in addressing greenhouses, and one of our members Owusu Bandele, brought forward shouldn't we include hydroponic in this. And we said no. Focus on what's really happening organically, which is greenhouse production standards.

MR. CHAPMAN: Yeah. This transcript's from 2002, 2004, 2005, and 2006.

MR. RIDDLE: They began in 2002.

MR. CHAPMAN: There was one in 2002.

MR. RIDDLE: Yes.

MR. CHAPMAN: There was an out year in 2003 but those were minutes.

MR. RIDDLE: That's when they first started.

MR. CHAPMAN: Yes.

Any other questions?

(No response.)

MR. CHAPMAN: Jim, thank you for your thoughts.

MR. RIDDLE: Thank you. And thanks for your service, all of you. It's a hard job. I really respect and appreciate what you do.

MR. CHAPMAN: Charlotte, you're up next, with Emily Musgrave on deck.

MS. VALLAEYS: Good evening. My name is Charlotte Vallaeys and I'm a Senior Policy Analyst with "Consumer Reports."

"Consumer Reports" is an independent, non-profit organization. We work side-by-side with consumers to create a fairer, safer, and healthier world. We work in many areas, including efforts to create a safe and sustainable food system. In many ways the organic food system aligns with our vision of a better food system. And we believe the integrity of the organic label is worth protecting and, where warranted, a standard should be improved.

There are several votes scheduled at this meeting that could improve the organic standards and ensure they meet consumer expectations. Sodium phosphate, an artificial ingredient, should be removed from the National List.

Our 2015 Consumer Survey found that avoiding artificial ingredients is an important objective for 79 percent of consumers. And this is especially important for consumers when they purchase foods labeled organic, with 86 percent saying that they expect organic foods to be free from artificial ingredients.

A high intake of phosphorus is associated with negative impact on bone, kidney, and heart health. Also, the prohibition of sodium phosphate in other standards, including the EU and Japan, shows that it fails to meet the essentiality criterion in OFPA.

And our 2016 Consumer Survey showed that 70 percent of consumers think that the USDA should not permit the use of non-organic

ingredients if they are not deemed essential.

We strongly support the proposal to include cisgenesis, intergenesis, and agroinfiltration in the terminology for excluded methods, and to exempt the techniques of marker-assisted selection and transduction. And we think transposons should be on the excluded methods list as well.

We support the Livestock Subcommittee's proposal to remove oxytocin from the National List. In our 2015 survey we found that 82 percent of consumers think that the federal organic standards should prohibit the use of antibiotics and other drugs.

For this reason also, and because we think that eliminating the routine use of antibiotics in animal agriculture is a critical step in protecting the effectiveness of antibiotics for public health, we strongly urge the NOSB's Livestock Subcommittee to begin work on developing a recommendation prohibiting all antibiotic use in organic poultry production.

And finally, last but not least, we are not opposed to hydroponic production, but we are opposed to products of hydroponic systems being labeled as organic and using that seal when those crops can be grown in soil. So we urge the NOSB to support the Crops Subcommittee proposal on hydroponics and container growing.

Thank you for considering our comments. And thank you for your work.

MR. CHAPMAN: Harriet.

MS. BEHAR: Have you done any consumer research on how consumers feel about hydroponics as far as having the organic label? Has there been any research on that?

MS. VALLAEYS: No, we haven't done a consumer survey in the last year. So we haven't asked that question specifically.

MR. CHAPMAN: Any year past consumer surveys speak about soil?

MS. VALLAEYS: We never asked that question. We, we have about five questions that we ask, and soil was never part of that.

MR. CHAPMAN: I had a question about you were talking about sodium phosphate and you referenced that because they're not on the European and Japanese lists they're not essential. There's a lot of differences between the materials lists internationally. For example, both those, Europe for sure, list carrageenan on the list of material that we chose to remove. And Europe itself doesn't restrict the use of these non-organic substances to just 5 percent in formulation, it's open to any percentage of the formulation.

So, given these large differences in our lists, is that really the good place for us to look to make these determinations?

MS. VALLAEYS: Wait. I'm confused about you said they're on the list but they're still allowed in the European Union?

MR. CHAPMAN: The European Union, you know, allows carrageenan. That was the --

MS. VALLAEYS: Right.

MR. CHAPMAN: -- substance that your

organization has lobbied us prior to remove. We recommended its removal. We'll see what happens in the further rulemaking steps.

But that's a difference between our lists, much like sodium phosphate's a difference in Uruguay.

MS. VALLAEYS: That's interesting. Okay.

Yeah, well, so sodium phosphate if it's prohibited, and in the EU and in Japan, and those markets are still served pretty well by, right, organic products, to us that shows, that just raises questions about is it really essential. And so we have more details in our written comments. But combining that with the fact, for example, that you can find products in the U.S. where very similar products will not have sodium phosphate; right? They will have found other ways, whether it's other ingredients or they just don't use it, and it maybe tastes slightly different. Or it has certain, you know, certain differences but it can still be done.

So I think that we just need to look very closely at what it means to be essential versus is it useful. Because it's certainly something can be very useful but not, that's not the same as being essential.

MR. CHAPMAN: Yes. I would just advise that we need to keep close attention to the European list as a reference for other substances they allow in the amount of a non-organic substance in there. And so it may not be a comparable situation since American handlers are restricted to a 5 percent usage of that non-organic substance, where in Europe they could use 6, 10, 20, 40, 50 percent of the product could be that product. It's a substantial difference.

Sue.

MS. BAIRD: Sorry, and I may just not have heard you correctly, but I thought that I heard you urge us to prohibit antibiotics in poultry?

MS. VALLAEYS: Yes. So we've been urging that for many years.

Currently organic producers can use --

MS. BAIRD: Oh, you mean --

MS. VALLAEYS: Yes.

MS. BAIRD: I'm sorry. Because I was thinking there's no antibiotics in poultry.

MS. VALLAEYS: It starts on day two.

MS. BAIRD: Yeah, okay. Yeah.

MS. VALLAEYS: Right. And that for us has been when we explain labels to consumers and we try to explain organic, the fact that we have to put in parentheses "organic prohibits antibiotics," but I always have to tell the magazine writers, no, you need to put a parentheses in there "except for poultry prior to day two." And so if we could just get rid of that and make it consistent and uniform so that we can say to consumers organic means no antibiotics period, that would be --

MS. BAIRD: Thank you. I'm sorry, I misunderstood what you were saying.

MR. CHAPMAN: Ashley, and then we'll have to stop there.

MS. SWAFFAR: Before I get off this Board, Charlotte, that is my goal.

MS. VALLAEYS: Thank you.

MR. CHAPMAN: Thank you, Charlotte.

MS. VALLAEYS: Thank you.

MR. CHAPMAN: Appreciate it.

Emily is up next followed by Karl Hammer. Emily if you could start with name and affiliation for the record.

MS. MUSGRAVE: Good evening. My name is Emily Musgrave. I am the Organics Program Manager at Driscoll's. Thank you for this opportunity to comment on the Crops Subcommittee proposal hydroponics and container growing recommendations.

My comments focus on the container growing recommendations section. As an avid supporter of the organic industry, Driscoll's requests the Board vote no on this proposal.

The organic movement centers on principles of inclusion, environmental stewardship, and sustainable management of

agricultural lands, while providing healthy, nutritious food to consumers. Growers pride themselves on taking advantage of nature's ecosystem services. Although organic farmers use tried and tested methods, such as integrated pest management processes, they are also champions of innovation and are eager to embrace technologies such as container production that allow them to grow more food in an environmentally sustainable way.

We believe this proposal, which mandates prescriptive requirements for container production, would stifle much-needed innovation. The vast majority of container producers would not be able to meet the requirements of this proposal and would therefore be classified as hydroponic and prohibited from obtaining organic certification.

The proposal limits growers' nitrogen usage, which is problematic when considering enforcement during the organic auditing process. You may remember the now-expired NOP rule that

limited growers' usage of Chilean sodium nitrate to 20 percent. Growers were required to document how much sodium nitrate they used annually during their organic inspections. This proved challenging in many ways, including how the rule was enforced through organic inspections.

The nitrogen requirements of this proposal would create problems similar to the sodium nitrate rule with regards to enforcement. It would halt progress, creativity, and innovation of the organic sector. Container producers who meet the standards set forth by the Organic Foods Production Act and the National Organic Program are already producing healthy organic foods in a sustainable way. They should not be denied organic certification because they do not meet the overly prescriptive requirements of this proposal.

Allowing innovation and creativity is essential to building a system that is even more sustainable and environmentally responsible. Driscoll's would welcome container production

standards in line with the core principles of organic production that allow growers to adjust their systems based on the conditions of their specific site.

Organic container growers embrace the opportunity to be more sustainable, to use less water, less inputs, and mitigate and reduce the stress on already over-used natural resources. Let's empower our farmers' desire to produce organic food in sustainable ways while preserving our agricultural landscapes, natural resources, fostering creativity, and using technological advances.

We ask that the Board help keep these paths of innovation open and vote no on this proposal.

I thank you for your service and for your consideration of my comments.

MR. CHAPMAN: Dave.

MS. MUSGRAVE: Questions?

MR. CHAPMAN: Dave, Steve. I'm going to cut it off so raise your hands now.

All right, Dave and Steve.

MR. MORTENSEN: Yeah. You've probably been here this afternoon and heard a lot of the presentations. I've been spending a lot of time with a group of students reading about the carbon footprint of hydroponic production. And in several meta-analyses the carbon footprint ranges from 2.5 times the carbon footprint of soil to in excess of 100 times the carbon footprint of crops grown in soil.

Could you tell us how that's a sustainable mode of production then, given the concern we have about greenhouse gases and fossil fuel use in any form of life, whether it's transportation or agriculture?

MS. MUSGRAVE: Yeah, that's a really great question. I'm going to touch a little bit on it. But actually we have Ian Justus, a colleague of mine, speaking, and he would be more of the subject matter expert on this.

But I do know that what was stated before saying that, you know, because container

plants are in a media of, you know, coco and coir, that type of thing, that they are not absorbing carbon. And I believe that is incorrect. The plants are actually sequestering carbon.

So I will leave it at that and I will let Ian, he's the one you want to go into more detail on that question.

MR. MORTENSEN: Okay. I'll pursue it with him.

MS. MUSGRAVE: Yes, please ask.

MR. MORTENSEN: I'm just going on the published literature with these ranges, and it's really striking. Actually the more I look into it, the more surprised I am at the difference between an in-soil and otherwise crops.

MR. CHAPMAN: Thank you, Dave.

Steve.

MR. ELA: Just Ashley's been asking my questions. So how -- what is your crop rotation? How do you get around that?

MS. MUSGRAVE: Well --

MR. ELA: You're growing perennials, so.

MS. MUSGRAVE: Right. So the crop rotation obviously for blueberries, a perennial crop, growers in the soil aren't rotating the base. And so the way we do it is we follow the organic system plan by our certifier.

You know, they come out there and they say, Do you have cover crops planted in between the furrow? Do you have beneficial plantings? Do you have hydros?

So, I have seen container production fields and soil fields right next to each other and they are following the exact same system plan, organic system plan, and they meet the letter of the law because blueberries aren't -- you don't rotate blueberries, but you do other things that are included in the organic system plan like having a cover crop in between the furrow, or beneficial plantings.

MR. ELA: So are you saying in between your containers you have cover crops planted?

MS. MUSGRAVE: Yes, they could do that, absolutely.

MR. ELA: But do you? Not could.

MS. MUSGRAVE: I don't -- I'm not sure entirely as far -- Actually, you know what, we do have a container grower who's planting cover crops. And they also have beneficial plantings all along the side of their, their operation.

MR. ELA: Is that the standard practice?

MS. MUSGRAVE: You know, it's a practice. I'm not certain if every single grower is. But they have to, in order to be compliant with the organic system plan they must be doing one of those, one of those choices. So they are, you know, being inspected by organic inspectors, and in order to comply they have to be doing one of those practices. So, yes, they would be doing one of those practices.

MR. CHAPMAN: Thank you.

Up next is Karl Hammer followed by Tom Barrett.

Karl, if you would start with your name and affiliation.

MR. HAMMER: I am Karl Hammer. And I own and operate a business in Montpelier, Vermont, called the Vermont Compost Company. And I was -- I started my farming in Vermont in my late teens, '68 or so, on a hill farm, shallow to bedrock. I had to clear a lot of the land. It had been in my family since I was about 8 or 9 years old, but it was definitely a run-out old hill farm at the top of the watershed.

Pastures were grown to trees. And I cleared some of the wrong land first because it was easier to see that there was land there. And started where it was a 6- or 8-cow farm at the best, at the most rather, which wasn't so out of character at that time there. But the biggest farm enclosure ever was a 30-cow farm.

But I learned a lot about manure and my need for it and the limits of shallow soils. And I quickly realized I couldn't sell milk so I decided to grow vegetables. And I was afraid of

chemicals. And I started sharecropping manure -- hay on both sides of the hill and making cattle. And long story short, now many years later I provide compost and container media to now 600 commercial growers, many of them certified organic.

And so I have a -- I traffic in soil. We talk a lot about soil and ethics here. There are only a couple of us in the room, we had a couple soil traffickers had supper together last night -- there are only two of us around -- that actually sell material. And, you know, when we started we endured the dismissive derision of being "muck and magic" farmers. Here 40, more than 40 years later now, almost 50 years later I am a "muck and magic" farmer. I'm proud of it.

I believe that my knowledge is dwarfed by my ignorance, and that we had been warned about this many times, but we may be in an interesting condition in terms of humanity's history.

I now have customers in Oklahoma and

Iowa taking a little bit of our terroir and germinating seed in it. And so I've been watching this whole question of containers and amendments. You know, I'd ask you to consider the scale, the scale issues between a container and soil. They are orders of magnitude. And that matters in all of this.

I oppose the liquid feeding. I know that media can be prepared to produce without amendment in various confining situations.

I'll leave it at that. And maybe a couple questions would be welcome.

MR. CHAPMAN: Thank you.

Sue then Steve. Anyone else? Asa.

MS. BAIRD: I have a dear friend in Illinois who has some operations in Missouri that makes bio-compost. And if I told you his name you'd probably know it. But they also make -- they use that same compost and they make a compost, liquefied compost manure, or whatever you want to call it. And he assures me that that has the same components, other than it's

liquefied, as the dry does.

And, therefore, he believes that that, that solution run through an NFT system or whatever would have the same kind of biology as his dry compost does. Could you comment on that, please?

MR. HAMMER: Yeah. Well, liquid substrates and their biology and their mechanics depend a lot on their moisture content overall. So liquids drives air from media. It may well be possible to transport beneficial materials into a soil as a slurry. And that, we can get into a long discussion about that.

Merely having compost in a circulating liquid is not at all analogous to the half billion year model represented by soil, plants, root, fungal, biological interaction. It isn't inherently a bad thing as an instead-of-soil.

You know, there may come a moment where the coir does become in some form a soil. And we keep -- we are in a time of anthropogenic pedo -- anthropocene pedogenesis. We are as big

an actor as plants now. We're a species that stepped out of the soil less than 2 million years ago, you know, in a system that is half a billion years old.

And we have been warned in -- you know, I came prepared to read a short Vedic proverb about this instead of what I did say. Being warned about the collapse of soil is disrespected. And I don't, you know, we worked hard to build the organic label. It never occurred to us that our, my own business slogan taken from Sir Albert Howard is shamelessly taken, "feed the soil," because we understood that feeding -- we don't make soil, we assemble and --

MR. CHAPMAN: Can you wrap up.

MR. HAMMER: -- participate in a mystery.

MR. CHAPMAN: Thank you.

Steve.

MR. ELA: So I just, I didn't completely follow. But you said you sell compost

to a number of container growers. And but then later, and you said later that you felt like they could use your compost mix to grow crops without additional feeding. Did I hear that right?

MR. HAMMER: Yes. We do -- and I'm talking about a broad range of grower and grower types. So, yes, volume of media is a very important issue technically in this discussion. And as a media seller I often find myself in the uncomfortable position of recommending more media because it gives much better result, more buffer capacity you know.

And if you look at the scale change to a little cell and then map what a -- the foraging potential in a soil situation, in a soil the plant can move around certain things. It has a lot more opportunity.

When you make scale changes that are decimal orders of magnitude it really changes all of the physics and the biology. So, and I emphasize that point because, yes, most of my grower, many of my grower customers predominantly

they take our media, they use it for seedling production, and they don't amend. They up-pot, they go as the root fills the cell that indicates it's time for more forage opportunity.

We, when I say we work with a lot of different people, we work on distressed substrates, asphalt parking lots, where we have to provide the whole media and food needs to be grown. And in a lot of those urban settings at this point you can't recommend that they allow the plants to forage because we know it's not safe.

Am I answering your question? What we do know is that our process of -- and we use a lot of compost as a first --

MR. CHAPMAN: Thank you. I'm going to have to move on to the next question.

Asa.

MR. BRADMAN: I have two questions. One, it sounds like you're selling compost to organic farmers and they're using it as a supplement, or maybe that's part of it. And then

actually you just raised a good point about using your soil media for growing food on asphalt and things like that which would basically inherently be a container or raised bed system.

And does that mean you would support the container system? I mean, I think here's a real issue where there's some --

MR. HAMMER: I have strong hesitation in calling container systems on asphalt organic, partially because of international rule. You know, as I understand European rule, if you're going to call a container growing thing organic, the container and the media come so that the customer can see it for themselves. And I think that's a reasonable thing.

When I say we work with people in distressed soil, frequently in those projects they're pretty local projects and I don't know that they, that they -- that calling that organic is important. I don't know that it should never be called organic. I think the standard, I think a standard about how much nutrition can be

delivered by liquid system, or by any system, because we know that you can -- if a volume of media is sufficient and it's properly made then it can, it will be soil and it can move on and rotate. You can actually increase its mass by proper rotations in sequence.

MR. CHAPMAN: Thank you.

MR. HAMMER: We're working with microgreens people, and a number of them, and this is coming up a lot.

MR. CHAPMAN: Thank you.

MR. HAMMER: And we are really starting to try to develop rotation plans.

MR. CHAPMAN: We're going to have to move along. Thank you.

MR. HAMMER: Sorry.

MR. CHAPMAN: Thank you very much.

Asa, do you have one last question or did you get it answered? Thank you.

Okay, thank you very much.

MR. HAMMER: Thank you. And thank you for your work. It's a knotty question.

MR. CHAPMAN: Thank you. Thank you, Karl.

Up next is Tom followed by Angela TenBroeck -- sorry if I butchered that -- on deck.

Tom, if you can start with your name and affiliation, please.

MR. BARRETT: Yeah, sure.

Good evening everybody. My name is Tom Barrett. I'm a stakeholder and I actively manage Allen Farms located in Westport, Massachusetts. We are a certified organic farm producing soil-grown herbs, greens, vegetables, and fruit for wholesale retailers and farmers' markets as well. The farm was founded by my mother 30 years ago and has been certified organic since 1989.

This is my first appearance at an NSOB meeting. And I thank you guys for doing what you do. And I'm honored to be here to have the opportunity to speak.

Allen Farms was founded on the love of

quality food. Organic by belief and choice at first, before realizing that being certified organic will allow others to acknowledge the quality and at the same time be willing to pay the additional costs incurred with growing organic, because they most likely as well share and want to support the same beliefs behind organic growing.

By selling the farm's produce at farmers' markets, I am able to get immediate, honest feedback from all my consumers. And it's becoming very evident that the USDA certified organic label is starting to lose its clout. The younger generations are growing increasingly more concerned about their health and eating healthier food, seeking and now expecting transparency, reading labels as they are concerned about ingredients more than ever before, especially when it comes to their food.

Many big businesses think that they can influence markets and industries to trick or deceive consumers with savvy labeling tactics.

They are unfortunately creating confusion and questions amongst consumers and, in turn, diluting the credentials even, if applicable, to the certifying agencies, all while these large corporations are just focused on cashing in on the trends, as we have seen double-digit growth in organic demand over the past two decades.

Let's not make this identity issue any worse and take the opportunity to set the precedents and create a turning point through strengthening our USDA label and its symbolism. Standards should be getting more simple, yet vigorous, so the majority of the population can easily understand it.

Now I fully support technology and innovation. With that, we get hydroponic and other mediums of growing. I see alternative methods as a great way to be able to increase our domestic production. This also allows for small scale home growers to be able to produce their own food when outdoor space is not available.

So, with the advances in farming and

the growing concern for quality food it is becoming evident to my peers and myself that the oversight for these methods needs to advance in sync. Hydroponic growing is not organic by the founding beliefs behind organic farming. As a grower and a consumer it's astonishing that these are even comparable under one blanketed guise of organic. We need to resolve this current situation that is clearly spiraling out of control with money accelerating the wild fire.

We need to resolve the integrity and do something before it jeopardizes the youth future and reliance and trust in the system.

MR. CHAPMAN: Thank you.

Questions? Emily.

MS. OAKLEY: I have the same question. I'm not sure how familiar you are with the Crops Subcommittee proposal, but we have a motion for containers. And I'm wondering if you would support compromise of containers or if you would like to see just grown in the soil in the ground?

MR. BARRETT: No chance. I recommend to the Board to keep this simple and only allow soil-grown produce to be certified organic. I would like for other small scale farmers, young and up-and-coming farms, including myself, to have the opportunity to compete on a level playing field amongst soil-grown organic produce.

Bring back the true identity of our label, so consumers can be assured of their purchases by seeing the USDA label on there and knowing exactly what it means rather than having the meaning so complex that no one understands exactly what organic is anymore.

MR. CHAPMAN: Thank you.

We're going to move on to our next commenter Angela. And after that we have Ian Justus on deck.

MR. BARRETT: And just for the labeling, there's about four different things on this little gummy bear package. And you guys just look up the different things on there.

MR. CHAPMAN: Thank you.

MS. TENBROECK: Hello. Are we ready?

MR. CHAPMAN: Is the mic on?

MS. TENBROECK: Can you hear me?

MR. CHAPMAN: Yes. Perfect.

MS. TENBROECK: Hello. My name is Angela TenBroeck, and I'm a fourth generation farmer. I am the owner of THF Hubery and I am currently the Executive Director for the Center for Sustainable Agricultural Excellence and Conservation. I have operated, owned, and been successful at attaining SQF Level 3 certification for a large aquaponics farm in this region of the country.

Today I stand before you to encourage you with data and science. The new Food Safety and Modernization Act changed the way many farmers farm. The FSMA encourages farmers, consumers, government officials, and food safety auditors to look at science. It is my suggestion that the NOSB does the same.

We can no longer hold out that a facility can't be organic because they don't

plant in the dirt. We must think of our future and our children's future.

We have -- I have always pondered as a farmer why aquaponics wasn't considered organic. So I went to organic meetings with certifiers and asked why was my farming technique not considered organic? And the simple answer was: wasn't grown in soil.

I went back to my farm, consulted with industry experts, and asked each one: What should I do to prove my farm is food safe and organic? Their answers were you need to be held to the same standards as the ground growers and other controlled environment ag people are held.

So, I went to all the food safety trainings: HACCP, Ag Water, SQF, BCQI, USDA Food Safety, and anything else I would take myself to. Never hearing any reasons why I, as an aquaponics farmer -- excuse me -- could not get this organic certification, something other than this raw manure and soil.

So, to the first point, I conducted

baseline data of more than 20 months at the farm to include total coliform, e coli, salmonella, and listeria, and the produce, and the nutrient water to never get a positive result.

So, I get to these meetings and I meet all these lovely people. And I hear your passionate ideas about what is organic. So I agree, we are different. But let me take it further as I have worked in this quest to be organic.

The next point I have is that my plants are not planted in soil, so therefore they are not natural or do not have natural soil components. I reached out to my web of scientists and asked: Is this true?

So Dr. Ingram has said that, yes, my produce and the soil underneath my plants -- the water that I speak of -- did have in fact the food web that was required as indicated in soil, the normal food web that would be aerobic and would generate more microbes to grow my plants.

On this personal research, as well as

anecdotal research information, I can only conclude that nutrient water that is below my plants in aquaponic systems is as or more organic than we have been given credit. So, given this information maybe we do need a different label.

To conclude, we can no longer work in this us versus them approach. We must research what is being conducted in public and private facilities, to work for our futures, our counties', our country's future, food security and safety.

MR. CHAPMAN: Thank you.

Questions?

MS. TENBROECK: Carbon footprint question? I'm ready.

MR. BRADMAN: I'll ask that. And in terms of the fertility, so you're bringing in fish food and feeding the fish and then you're using the fish waste to --

MS. TENBROECK: Yeah.

MR. BRADMAN: -- culture your plants. So it's kind of a hydroponic system with a animal

source essentially?

MS. TENBROECK: Yes. So, I, great, great way of describing aquaponics. So, many people think of aquaponics as this thing people do in their backyard where there's all these fishes swimming below people's plants. That is not what I do.

So what we do is is we take the fish poop, as you would call it, push it through an intense bioreaction process so there are no flocculents in the water. Because the big deal is is that we are concerned about food safety. Everybody knows that it's a big concern with aquaponics. Is it going to make me sick?

So, we've overcome that. Okay? And so from there it becomes hydroponic, deep water culture, NFT, a proprietary thing that I developed as far as the grow channel, I mean, that we work in.

MR. BRADMAN: What are your positions on the proposals that are before the Board right now?

MS. TENBROECK: So when I got here I was a little bit like Why can't we join? I'm going to be perfectly honest with you. I sat around and listened to this and I'm thinking we should just go ahead and do our own label.

I don't disagree that maybe we shouldn't have a hydro -- maybe not call it organic, maybe we come up with some other creative label for ourselves.

So I'm going to ponder on this because I am fully, I fully understand these people's work. I don't -- I get they think we're on their coattails. And maybe we are. That's not my -- that's not for me to decide.

MR. BRADMAN: Do you think that label should be under the National Organic Program?

MS. TENBROECK: I do. I think there need to be standards. I think there needs to be a centered set for food safety. Okay, we all agree on that, that was done with FMSA.

But I also believe that there should be an environmental standard for the manner in

which we treat, you know, our fish; the manner in which we treat our grounds around our facilities. All the things that they are asking for that they have done we are interested in as well. So a lot of the things, we all agree on a lot of the same. This is a movement. Okay. I've heard that over and over again. I agree as an aquaponics researcher and person that, yes, in fact I agree with the fact that, you know, there's a lot of this stuff that you're talking about I agree with.

But I also agree that my food is readily available, it can feed the masses, it's safe, it's clean, and I can grow it in one spot and I can grow more than a ground grower. I get it, okay. But that's just what we do. So we do need a different label. And I'm anticipating that's probably where I will move towards.

And I will meet with the Aquaponics Association this weekend on that.

MR. BRADMAN: So are you concerned about consumer confusion over labels?

MS. TENBROECK: Yeah. Actually I would like -- so I always believe on a business side that we must do a marketing campaign. So forgive me, aquaponics -- or organic folks, we haven't done a good job with organics in explaining what it is. So, therefore, that would cause in some ways people -- I, when I talk with people about organic this is what they think: It's safe. My family can eat it.

Okay, what else? Well, tell me about it? Tell me about this, tell me about organics; what is it?

They don't know the story of these guys that have worked their whole lives trying to rehab soil. They don't -- they don't get that story. And I don't mean to be disrespectful. I'm not trying to be. I know the work that they have put in. I've followed them for years.

MR. CHAPMAN: Thank you.

MS. TENBROECK: Uh-huh.

MR. CHAPMAN: Dave, did you want to ask the carbon question?

MR. MORTENSEN: No, I'm not.

MS. TENBROECK: All right. Thank you so much for your time.

MR. CHAPMAN: Wait, wait, wait. Sue has a question for you.

MS. BAIRD: I'm so sorry for commenting on this thing.

MS. TENBROECK: Hi, Sue. Hi.

MS. BAIRD: You have presumed all along that you're growing organic hydroponics. What is the difference in an organic hydroponics and a conventional hydroponics? And is there a difference?

MS. TENBROECK: Yes. If you want to talk about the fact that what we're doing is hydroponic, okay. Technically we have it come through the bioreactor, and we have fertilizer that comes out of that.

So if you want to say that those, that greenhouse that's full of nothing but those fish water, nutrient soil, if that's in fact -- we're just going to talk about hydroponic, eliminate

the fish -- I would think that something that poops, and we take it through the cycle, the nitrification process, and it's in fact able to make its readily available nutrients to the plants, and they're able to do what they need to grow, the nutrients are readily available there, the protozoas are all there, the bacteria, you know, the uptake and such. So yes, I think that is different than somebody going to a Dosatron, okay, I need a 1 to 50 or 1 to 1,000, and I need -- I put, I only put some, some battery acid in it, and that can be considered organic. I'm sorry, I think that what we do is organic.

MR. CHAPMAN: Thank you.

Actually, I'm going to ask you if you could briefly talk about the carbon impact of your operation.

MS. TENBROECK: So, the University of Michigan does a great job on this. So if you've ever been interested in this we -- and the operation -- I have to be honest with you, I sold my operation in February -- but the operation was

run on a gravity flow. And so in general for ag situations vegetables take up 4.9 percent of the total carbon footprint, whereas dairy and beef take up, you know, 47. So I always am pondering, you know, let's talk about this, we have greenhouse growers and we have the energy, the coal power that it takes to turn those fans and such. That is an issue.

But let's also talk about the fact that if we're getting produce here in Jacksonville, from Salinas County it's 776 miles to my door. There's a carbon footprint imprint there. So I'm saying if you want to talk about carbon footprint, buy my local stuff. There's a bigger impact in local with the carbon footprint argument than there is anything else.

And so the source of this, it's the University of Michigan. They've really done a good job with this carbon footprint. And I would strongly suggest that you guys share that with the sustainable systems. It's the University of Michigan sustainable systems.

MR. CHAPMAN: Thank you. Thank you very much.

Up next is Ian Justus. No one is on deck which means Ian is all that is keeping us from trick or treating.

(Laughter.)

MR. CHAPMAN: Ian, I was really hoping you would dress up as a strawberry or other berry of your choice.

I'm sorry. Ian, can you start with your name and affiliation for the record.

MR. JUSTUS: Sure. Well, thanks for waiting.

My name is Ian Justus. And I work with Driscoll's. I appreciate the opportunity to comment on the organic hydroponic container proposal today.

My specialization at Driscoll's is focused on research and development relating to the development of new production systems, and agronomic consultation on all aspects of growing the four berry types in conventional, organic,

soil, and container.

At the end of this process, it will be my job to make the growing recommendation to our growers on how they can comply with the new container standards. And I can tell you as the current proposal stands, I really don't know how to container grow long-term perennial crops in this system as it, you know, it creates many management challenges.

I have heard through this process that the reasoning behind the 50 percent of the upfront nutrition is because this is how all organic soil should be managed. If I encountered an organic soil berry grower with this fertilization practice, it was my professional advice to change their practices.

And the reason for this is because of the high exposure to salinity to a young plant, the increase in vegetative growth that can occur with this that causes problems with disease, and harvest efficiencies, and that this release curve of the nitrogen will not match the uptake curve

of the plant. And this is going to lead to groundwater contamination and nitrate runoff.

This proposal dictates how to manage nitrogen fertility for all crops in a few sentences, and forces the grower to determine total nitrogen for the year by the day of planting. This really leaves little room for adjustment.

And I understand the Board's intention and the challenge here, but the complexity of the farming really cannot be simplified in this manner. There will be so many conflicts with different cropping systems. In particular, the Board should not be recommending such high rates of early nitrogen when the crop will be growing for over six months.

Our regional water quality boards would not support this method of fertilization. And California growers are responsible for managing nitrate runoff and percolation in their fields. I don't think the Board will like the reality this proposal will create. It will cause

more pollution, unfavorable root zone conditions, and encourage over-application of nitrogen.

The key to the thoughtful management of nitrogen fertilization is applying it based on crop development and matching the nitrate uptake curve for the given cropping system.

Driscoll's and its growers support a meaningful container standard. We urge the Board to send this back to subcommittee for further work. The topic has great impact on the future organic produce and deserves more work and attention. Farming practices inherently progress, and we need to send the right message to future generations of organic farmers.

This recommendation is counter to the current schools of thought. As board members you must ask yourself is it appropriate to be this broadly prescriptive on farming practices? If so, is this really how you want fertility to be managed? And does this proposal clearly define what regional conditions are acceptable for organic certification?

I really believe this creates a reality that directly conflicts with the organic principles of adjusting the scientific conditions, creating healthy root zone conditions, and being a good steward of the land.

I would like to thank the Board for all their service. And I would happily take any questions you might have.

MR. CHAPMAN: Thank you, Ian.

Steve.

MR. ELA: At the risk of standing between Tom and his candy. So normally, I mean, soil growers are in the soil. You have most of your fertility upfront. And you have cover crops and release curves; things are dynamic and cycling.

And I don't see that in the container systems. And that's, I mean, that's one of the differences. I hear what you're saying, you put this in the front, you're going to lose it because the plant -- your crop plant's the only thing in that system. But it seems like that's

one of the fallacies of this system as well.

So, could you comment on that?

And I would also like to know the water you put in, I'm assuming the plants don't always take up all the nitrogen. Where does that, I mean you have exudate, bypass, what are you doing with that water?

MR. JUSTUS: Sure. And I'll be fully honest with you. So, I mean, we really learned how to do containers from how we managed our soil. So in many cases, the growers are actually managing very similar to how you'd manage a soil blueberry planting versus a container blueberry planting, because it's more like an orchard than a rotating annual crop. Right? So there's no way to really till, turn over, or really affect the nutrient balance for the blueberry without applying it through the drip system.

You can do some top dressing. You can do some side shaking of the soil. And we do the same thing. We can't side shake in a pot but we can do top dressing. So we'll address it in that

manner.

And the blueberry root system in particular is really not expansive. It's not into the furrow. It's very isolated. There's not a good way to actually put it on. So that's basically the way we'll do it, we'll put compost on the top, or we'll top dress solid fertility.

But, you know, all these things are inputs. This discussion about the different types of nitrogen, solid versus liquid, really boils down to the complexity of the protein. That's what we're talking about. Right? Which one -- solid protein is a little more complex than liquid soluble protein, but they all have to really go through the nitrogen cycle, which happens in solution by the way.

So I mean that's just one challenge all perennial organic growers have, is how you keep maintaining that when you can't actually turn the soil over, you can't cover crop it, especially in particular like a blueberry, which is the majority of our organic container

production.

MR. ELA: And then the water?

MR. JUSTUS: And the water. So, we manage that very closely. And we -- usually we're targeting a daily percentage, actually. And that's basically the leaching fraction, the same thing you would have in soil. But where it goes is really it goes right below the container.

And probably the worst thing we could do for the soil in that field is to rob it of that water. All microbial life needs water so to live and thrive. And otherwise it would just be a desert underneath. And we put gutters -- which we could do, it would come at a great cost to the grower -- that would actually rob the soil of the exudate, the water.

But what we're not doing is hitting field capacity in that soil, so we're not actually getting down to the groundwater -- a big advantage in my opinion. When I look at the dynamics of what we can do in California and what will be regulated on, it's protecting that

groundwater. And we're not leaching into the groundwater, because we're not hitting field capacity.

In soil you pretty much hit field capacity in every irrigation cycle.

MR. CHAPMAN: Joelle.

MS. MOSSO: I had a question -- I'm over here -- I had a question on the four trophic levels. If you've had any time to look at that, the four trophic levels in the minority view?

MR. JUSTUS: Yes, I did.

MS. MOSSO: Speak to that as to whether or not that would be compliant in your system?

MR. JUSTUS: Yeah. Arguably, it really comes down to how you define a trophic level. I think even a conventional hydroponic system would have four trophic. We would way exceed those levels. And we're not growing in greenhouses; we're growing in open air tunnels. So the number of organisms that are present in our environment, especially our long-term

blueberry planting, is massive. We're probably at least ten.

We have soil arthropods, you know, it really depends on where is the production. Is it in the soil that we're not growing in, because that's full of life. Or is it, you know, there's tons of spiders, there's snakes even. I mean there's, it's there's a full range of biodiversity going on in the field because we're open. Can't keep things out even if we wanted to. So four would be very simple.

MR. CHAPMAN: Harriet.

MS. BEHAR: Okay. So in those blueberry fields are they -- I have visited some. I went to ecofarm, and you take the bus tour. And I know I've been to some -- quite a variety. And I've been to fields where they're covered in landscape cloth and there isn't any cover crops growing there. That's the first question.

The second question is: if the containers were full of compost, no inert, I think that they would meet that nitrogen need to

start with. But you're saying that that wouldn't work. And when the nitrogen is in a humus form, its leaching capabilities is much less.

So maybe you could address those two things.

MR. JUSTUS: Sure. So is there a specific question about the landscape cloth question?

MS. BEHAR: Yeah. Because the previous woman said she thought that there was cover crops growing between the rows and things like that. And that's not what I saw.

MR. JUSTUS: Yes. I'll tell you, it really depends on the operation. I work with all the growers. So when they first started they were like, What do we do? Right? It's always kind of a question, like, how should I lay my field out?

And some of them were like, well, I really don't want to deal with weeds. I'm going to cover it 100 percent.

And I can tell you the current school

of thought amongst the growers is that's not the way to do it anymore. In particular, I mean, in perennial plants, you have pruning clippings. So what do you do with the pruning clippings when you're done? You can't till it into the soil anymore because that cloth is there. It actually creates like a big challenge for them.

So pretty much everyone now leaves open the furrows, incorporates things into the soil, particularly pruning trimmings. You know, they cultivate to manage weeds, things like that.

So in that particular case, I mean, obviously there wouldn't be cover cropping in that area. But I think that meets the exemption in the standards. I'm not 100 percent because that's not my specialization.

And then regarding the compost question for the container, I mean for every mix, I mean, peat moss is how old? It's been composted for long, long year. Coir is also composted you could argue. But it comes down to the stability of your organic matter; right?

If you have totally unstable organic matter, you're going to lose all your porosity. And that's going to create problems for the roots and the microbes, because you obviously won't be done.

And then the other big challenge we see with it is that we're actually above the ground, and so we don't have very much mass. So because of that, that temperature fluctuation is with the diurnal flux. So our daily average temperature of the root zone is higher usually in a container. So what that means is that process actually happens quicker.

So with compost it would mean that we have basically a very large carbon fraction that isn't breakdownable, because otherwise you would just destroy the root zone conditions from lack of porosity. And then compost as well can be very inherently salty, so you really would need to manage what that is. And you would need a large part of it to be stable organic matter, which is basically what the media components are

using currently is stable organic matter, or more stable, even though it does break down over time. Very much so.

MR. CHAPMAN: Thank you.

Francis.

DR. THICKE: I think we have to clear something up. The proposal we have for containers is really is a de facto soil or compost requirement. We aren't expecting you to put all this nitrogen in this coconut coir. We're not that stupid. But you have to have something that has some stable nitrogen or has to -- a soil or compost has various stages of nitrogen composition, from humus to less recalcitrant to more label, a whole range, so that the curve, release curve is longer.

And people have, and they showed us how they could grow in 100 percent compost. Yes, if you're going to have a mushy compost, it's going to decompose. But you're going to -- you have to have something that's, just like your engineering your hydroponic system, you have to

engineer your compost system. And I think John Biernbaum is going to talk to us about that tomorrow.

So these are straw man arguments that make no sense. You know, we're not expecting you to put all your nitrogen in soluble form in the beginning of the year.

MR. JUSTUS: Agreed. But if you're going to lose the structure, right, if it breaks down then you lose the structure; right?

DR. THICKE: We'll hear more about that tomorrow from John Biernbaum. He's done a lot of research on that at Michigan State and has made compost that worked really well for that.

MR. JUSTUS: Yeah. So I would ask you, I guess, how do you manage the first six years straight? I'd love to hear it.

MR. CHAPMAN: All right. We have Ashley and Sue and Asa. And we're going to cut it off there. Sorry, I did totally skip over Emily. So it's actually Emily, Ashley, Sue, Asa, and then we're going to cut it off there.

Sorry, Emily.

MS. OAKLEY: I think I remember from the spring public testimony that you said that the vast majority of Driscoll's production is in the ground. Is that correct?

MR. JUSTUS: Yes.

MS. OAKLEY: So I guess I'm just confused as to why you're advocating so strongly for containers because it's such a small percentage of your production, and what the benefit to the containers -- container production is over the soil?

MR. JUSTUS: It's a great question because I was on the research team trying to solve the same problems. And pretty much every single one of our container growers is also a organic soil grower for us as well.

And really, I mean, for one, the grower sees a great opportunity to save water. There isn't a single example of an operation we're not using at least 40 percent less water on a per annual basis, which is pretty significant

for our area.

It also, particularly for blueberries, I mean blueberries prefer an extremely high organic matter soil system, and that's just not the natural system we have. And even, I mean, the numbers we're getting, you know, 1-2 percent. That's not, that's not a viable system for blueberries. You have to, the amount of amendments you're adding were way more than you're adding on a per acre basis. So growers saw it as a way to decrease total inputs applied as well. So we decreased the amount of fertility we used, we decreased the amount of water we used.

And we actually -- we actually improved productivity. And we're not ashamed of that. We're proud of that because we decreased input usage and increased output, the coir can be more sustainable and providing it just solved several challenges.

MR. CHAPMAN: Very quick.

MS. OAKLEY: Do you think some of

those challenges might be because you're growing blueberries in an environment that they don't naturally want to grow in? I'm in northeastern Oklahoma and we are in an area that is supposed to have native blueberries. But even there, it's really challenging to grow blueberries because we have a warm, hot summer much like California does.

Do you think that some of the challenge is the geographic location for where you're growing these crops?

MR. JUSTUS: Really it came down to the geographic challenges around when the fruit was going to get produced. We produce blueberries all over the world, in places where they would naturally grow and where they wouldn't naturally grow. But really it came from a demand for organic fruit in spring and fall, and you needed the climate of California.

So by putting it there we saved a ton of energy by instead of using some sort of greenhouse system to hit those fruit requirements

that the market was demanding. So that was actually a much better solution, we thought -- to go where the climate was naturally there so we didn't have to put all the excess energy in to produce the fruit.

MR. CHAPMAN: Thank you.

Ashley, Sue, Asa. Brief.

MS. SWAFFAR: Brief. Okay.

So you said a lot of your growers produce in ground and container on the same farm. So can you describe their material input lists, the differences between each of those systems? Is there a difference?

MR. JUSTUS: You're referring to organic soil and organic container?

MS. SWAFFAR: Yes.

MR. JUSTUS: Yes. So the input lists are going to be very similar. What you're going to find particularly in a blueberry field is a lot of soil amendments added previous to try and make the soil that's not really adapted, adapted. So they do like, you know, tons and tons and tons

of amendments. But fertility programs are very similar between the two.

And then the pest control is pretty much exactly the same.

So from the input list, actually the soil is going to have more, especially in the amendments of all the soil to try to make it suitable for production.

MR. CHAPMAN: Thank you.

Sue. Brief.

MS. BAIRD: Yes. My question was similar except that I -- do you do conventional grown and organic grown blueberries?

MR. JUSTUS: Yes. I advise on all systems.

MS. BAIRD: Okay. So what is the difference in the input in a conventional container-grown and an organic container-grown?

MR. JUSTUS: There wouldn't really be any overlap. On fertility, there would be no overlap. The convention people might use a couple organic pest control products, but they

would also use all the chemical options as well just because they can.

But fertility, there is no overlap on the sources they would use.

MS. BAIRD: I must not have made that clear. In conventional inputs describe the difference between a conventional and an organic input, I mean in fertilities. Do you use your ureas and whatever is in conventional? And then what do you use in organic? What's the differences?

MR. JUSTUS: Okay, sure. And really the difference is mainly centered around the nitrogen. And I really encourage the board to look at some fertilizer labels. It's a legal requirement called "guaranteed analysis" that you have to put what is in that fertilizer present. And you'll see basically by law they have to put percentage nitrate, percentage ammonia, percentage urea. And in the case of organic, they put soluble organic nitrogen and insoluble organic nitrogen.

If an organic fertilizer has nitrate in it, they are legally obliged that they have to put it on there. And that's what you don't find; the board doesn't allow those products onto a list. So what you see in organic is soluble organic nitrogen, insoluble organic nitrogen. And those are the options we have.

In conventional production, what you'll do is you'll basically target a level of ammonia or nitrate, depending on crop need, and that's what you'll target with. You won't add a protein, because that basically requires a microbial middleman to process, and you'll just do a low rate continual application.

MR. CHAPMAN: Asa. And, Dave, you have a question? Okay, but that's it. And brief.

Asa.

MR. BRADMAN: So I had a question about how the -- sorry -- how the materials are handled at the end of the cycle, containers; what happens to the root ball? Are they reused? And

also, what exactly is the root ball? And you mentioned peat, and is there compost in there as well? And so what happens to those materials? Are they taken off site, or what?

MR. JUSTUS: So that's really going to vary by grower, of course. I won't give you that ambiguous of an answer. But, you know, growers have their own perspectives in their own operations on what they're doing.

You know, most people are using a blend of coir, peat, perlite, something like that, and then some sort form of compost. You know, I've been following this proceeding very closely, and I advise all the growers, so we've already begun testing these things. But it's changing so quickly we're, like, well, what are we actually trying to do?

So we've been playing with all sorts of different composts, different forms and availabilities, you know, in terms of breakdown curves and things like that. Really, our challenge is going to be, like, how do we manage

it in years to come. And to be honest, we haven't turned over a blueberry planting yet because it's at least a 6-year cycle, and we just haven't been doing it that long.

In the case of raspberries it's a little bit shorter, 2.5 years maybe. And so what we do there is either it's incorporate right into the furrow, because it's all organic material so then it will just be incorporated into the soil on site. And then one of our larger growers has basically began a massive composting operation where they're doing compost and vermicompost. And those would go to that operation.

MR. BRADMAN: And then does that compost go back into the containers?

MR. JUSTUS: Yeah, the compost will go back in the container. Or they also have soil production, so they send it to both places. And they do a vermicompost extract liquid from that system as well. That's also applied to soil and the container system.

And so then we are looking, you know,

if we're going to have a compost requirement, what are the end requirements going to be is, you know, we want more control over that. The growers are probably going to likely produce their own compost to go into the starting mix.

MR. CHAPMAN: Thank you.

And Dave.

MR. MORTENSEN: Yes. Just thinking about blueberries in the east where I'm familiar with, and ericaceous plants, blueberries and that family are acid-loving plants. And this is back to Emily Oakley's question.

How do you get the pH down low enough, whether it's in a container or in the soil, so that the blueberries are healthy? I know in Pennsylvania, that would be a pH within the range or 4 to 5, 5 or so.

MR. JUSTUS: Yeah, the ideal --

MR. MORTENSEN: Very acidic.

MR. JUSTUS: Yeah. The ideal pH range for blueberries is 4.5 to 5.5.

MR. MORTENSEN: Okay.

MR. JUSTUS: And that's basically their ideal range.

MR. MORTENSEN: Yes.

MR. JUSTUS: And they're ammonia-loving plants. They're iron-inefficient plants. So if you're not in that pH range, you run into issues very quickly.

MR. MORTENSEN: Right.

MR. JUSTUS: And so that was one of the reasons to go with containers is because peat moss has got a natural pH of 3.

MR. MORTENSEN: Right.

MR. JUSTUS: And so, basically we're going to start with a soil that's already down into the -- you know, that's just part of, you know, working your soil and how you're going to amend it. We're going to mix the soil to the ideal pH to start them off. That made a huge difference to the plant. It was just -- it was unmistakable.

And so, and then we only use, of course, organically approved methods.

MR. MORTENSEN: Right.

MR. JUSTUS: With a big enough farm, a grower is going to have a sulfur burner. And then for smaller growers, a lot of them will use something like citric acid.

And then we also we get natural acidification from the microbial action in the root zone, especially from the ammonia uptake from the plant.

MR. MORTENSEN: So when you were saying that the soil-based blueberry growers use a lot of inputs, amendments and things in their soil, part of it is to actually manipulate the soil so that it resembles an acid environment in an otherwise non-acid environment. Is that true?

MR. JUSTUS: Yeah. So in soil, they'll also use a lot of elemental sulfur. A lot. You know, there's a standard curve where you get a holding capacity of soil of how much sulfur you put in there. And then they'll also do a lot of organic amendments.

So they were kind of making their own

container. They were just really the bed they were manipulating more. So a lot of elemental sulfur, a lot of organic matter, compost, pine bark, things like that. And then really the root zone stays in that area when you get the old plant out.

MR. MORTENSEN: Yeah.

MR. CHAPMAN: Okay, thank you very much. Thank you, Ian, for your time.

MS. JUSTUS: Thank you so much as well.

MR. CHAPMAN: Thank you to the Board for your questions.

We made it to the end. It's only 7:20. Trick or treating is early. Just don't stay out too late, because we start tomorrow bright and early at 8:30.

So we're in recess till then. Thank you, everybody.

(Whereupon, the above-entitled matter went off the record at 7:22 p.m.)

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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Fall 2017 Meeting

Before: USDA/NOSB

Date: 10-31-17

Place: Jacksonville, FL

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate record of the proceedings.

Neal R. Gross

Court Reporter

UNITED STATES DEPARTMENT OF AGRICULTURE

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NATIONAL ORGANIC STANDARDS BOARD

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FALL 2017 MEETING

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WEDNESDAY,
NOVEMBER 1, 2017

The Board met in Florida Ballrooms A, B & C of the Omni Jacksonville Hotel, 245 Water Street, Jacksonville, Florida at 8:30 a.m., Tom Chapman, Chairman, presiding.

PRESENT
TOM CHAPMAN, Chair
ASHLEY SWAFFAR, Vice Chair
JESSE BUIE, Secretary
SUE BAIRD
HARRIET BEHAR
ASA BRADMAN
A-DAE BRIONES
LISA DE LIMA
STEVE ELA
DAVE MORTENSEN
JOELLE MOSSO
EMILY OAKLEY
SCOTT RICE
DAN SEITZ

FRANCIS THICKE

STAFF PRESENT
MICHELLE ARSENAULT, NOSB Advisory Board Specialist, National Organic Program
DR. LISA BRINES, Ph.D., National List Manager, National Organic Program
DR. PAUL LEWIS, Ph.D., Director, Standards Division, National Organic Program
DEVON PATTILLO, Materials Specialist, National Organic Program
DR. JENNIFER TUCKER, Ph.D., Associate Deputy Administrator, National Organic Program; Designated Federal Official

ALSO PRESENT
ISAURA ANDALUZ, Cuatro Puertas
ANJA ANDERSON, International Pectin Producers Association
JOHN ASHBY, California Natural Products
CHRISTIE BADGER, National Organic Coalition
COLEHOUR BANDERA, Kanalani Ohana Farm
JULIA BARTON, OEFFA
DAN BENSONOFF, NOFA/Mass
JOHN BIERNBAUM, Michigan Organic Food and Farm Alliance; Michigan State University
JOHN BOBBE, OFARM
JEFF BOGUSZ, Ferrara Candy Company
LYNN COODY, Organic Produce Wholesale Coalition
JENNY CRUSE, Accredited Certifiers Association
MARIANNE CUFONE, Recirculating Farms Coalition
KELLY DAMEWOOD, CCOF
KAY FELDMAN, Beyond Pesticides
LEE FRANKEL, Coalition for Sustainable Organics
MAX GOLDBERG, Organic Insider; Living Maxwell
TOM HARDING, Green Ag Supply
CAMERON HARSH, Center for Food Safety
DAVID HILTZ, Acadian Seaplants Limited
KIKI HUBBARD, Organic Seed Alliance
ANDY HUDSON, Westbridge Agricultural Products
LAUREN JOHNSON, Organic Seed Alliance
WANDA JURLINA, CP Kelco
KEITH KANDT, NatureSweet
MARNI KARLIN, Karlin Strategic Consulting; Nature Ripe Farms

ALSO PRESENT

PAT KERRIGAN, Organic Consumers Association
LORI KLOPF, ICL Food Specialties
JESSICA KNUTZON, CP Kelco
ANDREAS KUENKEL, BASF
PHIL LAROCCA, LaRocca Vineyards; CCOF
NATHANIEL LEWIS, Organic Trade Association
EMILY LYONS, International Dairy Foods Association
MELINDA MAYFIELD, Innovacyn
SUZANNE McMILLAN, ASPCA
MARTY MESH, Florida Organic Growers; Quality Certification Services
RON MITCHELL, Local Greens Farm
TRACY NAZZARO, Traders Hill Farm
MARISOL OVIETO, Northwest Horticultural Council
CHRISTOPHER PIERCE, Heritage Poultry Management Services, Inc.
ROBERT RANKIN, IFAC
GERALD ROBERTSON, Reiter Affiliated
TERRY SHISTAR, Beyond Pesticides
JESSICA WALDEN, QAI
STEPHEN WALKER, MOSA Certified Organic
JULIE WEISMAN, Elan Incorporated; Flavorganics LLC
DAVID WILL, Chino Valley Ranchers

GWENDOLYN WYARD, Organic Trade Association

ABBY YOUNGBLOOD, National Organic Coalition

CONTENTS

P-R-O-C-E-E-D-I-N-G-S

(8:34 a.m.)

MR. CHAPMAN: We are starting this morning with public comments. And up first is Dan Bensonoff, followed by John Biernbaum. Sorry, I have to actually do a formal something, something. Michelle, can you pull up the public comment slides again?

All right, as Michelle pulls up the public comment slides, just a quick reminder, and I will make it extremely quick. So for folks that weren't here yesterday, this is the Public Comment Policy from the NOSB Policy and Procedures Manual.

Comment time for this meeting is three minutes. We provide a lighting system that warns you about the time. It starts off green, and turns to yellow. At red, three minutes have expired. At that time, I ask you to please finish up your sentence, out of respect for other commenters and the Board.

At that moment, we'll open it up for

questions from members of the Board. If you have a presentation, there's a remote that you can use that will be on the stand to advance your slides. I will be asking everyone to start their comment by stating their name and affiliation for the record.

We ask that you disclose all relevant affiliations pertaining to matters of business before the Board. If members want further clarification, I encourage you to ask questions after the commenter has completed their comments.

Next slide, Michelle. No proxies are allowed. Commenters should refrain from making personal attacks or remarks that might impugn the character of an individual. If I hear something of this nature, I will interrupt the commenter and ask them to refrain.

And then our last request is that comments please be clear and succinct. And I also ask for that in the questions and answers period as well, that we try to answer the question as directly as possible.

We have a very full public comment schedule. We jam-packed as many public commenters as possible into the timeframe that we had. And unfortunately, we have to conduct some business this afternoon, so we're going to have to really stick to our time schedule. So this is a warning to the Board.

But I probably will act like I did near the end of the day yesterday to try to keep us on schedule, limiting questions as much as possible. Please save your questions for the folks that you really want to have that dialogue for so we can ensure we have enough time to get through all the public comments.

Also, I would be remiss if I didn't remind folks to turn off their cell phones and turn their computers on silent out of respect for everyone in the room.

With that, we'll get started. So Dan, if you could come back up. Sorry for bringing you up and sending you back. So up first is Dan, and Dan, you can start with your name and

affiliation for the record.

MR. BENSONOFF: Sure. Good morning, everybody. Thank you for allowing me to speak today. My name is Dan Bensonoff, and I'm a vegetable grower, but I'm here primarily representing the Northeast Organic Farming Association of Massachusetts.

We have about 1,000 members, and that includes both certified and non-certified farmers, and gardeners. We appreciate all of the important work that the Board has done on the question of hydroponics and container systems.

This is a decision that will define the shape of organic farming. And therefore, it's important we consider it from many perspectives.

I know you've all had your fill of this issue, not just in the last few days, but over the last few years, so I'll be brief and I'll just try to add my two cents.

I want to first acknowledge that at this NOSB meeting, I've been surrounded by so

many of my personal mentors and elders of the organic community, folks like Eliot Coleman, Jeff Moyer, and many others without whom there would be no organic movement in the US, soil based or otherwise.

Certainly, I would not be farming without their contributions, that's for sure. And so many of these elders came out here because they care deeply about organic farming. And regardless whether we think that hydroponic and container growing has merit, we ought to respect the vision of those who paved the way for us.

To do otherwise would be like walking into a foreign city and demanding they change their way of life. I certainly don't want to be guilty of that kind of disrespect.

Many of the members I'm here to represent recognize that hydroponic and aquaponic systems have many merits, especially in terms of their ability to provide year-round vegetables in urban and drought prone areas.

But we also recognize that organic

farming has never been just about resource efficiency. While many contemporary organic consumers turn to organic produce because they don't want toxic pesticides on their food, organic farmers know that the heart of organic is not what we don't do, but what we do do.

And what we do is work with biological systems. The ideal of organic farming is to mimic evolutionary relationships that connect plants with fungi and soil and animals into a web of interrelationships. It is the management of this ecological balance that defines organic production.

Hydroponic systems work in a different paradigm from soil based systems. The growing medium is referred to as a substrate, an anchor for the plants. Conditions such as temperature, light, fertility are fully controlled and nature is generally held at bay as much as possible.

Organic soil growers think of plants as one element within a larger ecosystem. It is this focus on whole systems that is critical, not

the exact amount of liquid or solid fertilizer or the ratio of one to the next.

This whole system's approach ensures that organic farmers are land stewards first and plant factories second.

Aside from the philosophical differences, I'll wrap up there. So I'll just wrap up by saying we support soil based systems, and I'm sure Emily's going to ask. We would be, as much as, you know, it's hard for us to say this, I think we would be willing to go on with the compromise that the Crops Subcommittee came up with. Thank you.

MR. CHAPMAN: Questions from the Board?

MS. BEHAR: We were hearing yesterday that there was some greenhouse operations in soil that were not really rotating crops. They were rotating tomatoes and compost.

MR. BENSONOFF: I work at one of those.

MS. BEHAR: Okay. So can you explain

why it is that a crop rotation, when I was doing many more organic inspections in the Midwest, there was a requirement that there was a rotation in that greenhouse, at least with a cover crop in between the cash crop.

MR. BENSONOFF: That's a great question. So first I should clarify that my farm is not certified organic as of right now. I will say that in general, so the rotation is not necessarily very clear. If, for example on the farm where I work, we grow tomatoes for a few years, and then we'll usually grow either cucumbers or eggplant or peppers in an off year.

We also have moveable tunnels so that does ensure some rotation in some of our tunnels. As far as I know, a lot of the farmers that I work with don't rotate primarily because of their markets.

But it really does depend on the certifiers and what they require. And NOFA does not do certifications in Massachusetts, it's done by base state. So I can't speak to that

directly. I know that on our farm, we rely primarily on compost, chicken manure, and a little bit of fish emulsion for our fertility in our houses.

MR. CHAPMAN: Asa?

MR. BRADMAN: I just, my question is, and one of the things that's challenging is that we have certifiers in several different parts of the country that do approve hydroponic, do approve --

MR. BENSONOFF: That's right. Including Massachusetts, by the way.

MR. BRADMAN: -- do approve container. And so it's, there's this tension. I wonder where you fall out on that, or do you see there's some sort of compromise that can kind of reconcile that diversity?

MR. BENSONOFF: Well, I think that, I mean, that patchwork right now isn't in fact the problem. And I would also add that it's not just that some certifiers do include container systems, it's that they look at them very

differently as well.

In Massachusetts, we have three hydroponic facilities that are certified. And I know our certifiers are very stringent in their requirements, and look really carefully at the systems approach. I can't speak with certainty, but as far as I've heard in other states, it's a little looser in terms of their requirements of those container systems.

So I would just say that whether there's a compromise reached, I think it's going to be really difficult to enforce the compromise that the Crops Subcommittee put together.

I think that it is better than nothing, but I think that it's going to be a challenge to enforce, and certifiers are going to have to really learn a lot in terms of, you know, how do you measure fertility at the outset, how do you make sure that the nitrogen requirements are met?

MR. BRADMAN: Well, I mean, just to take it out a little bit further though, what

about compromise in terms of labeling and accepting some diversity because that's where the differences I think are even larger. And it seems to me there's an opportunity for having strict standards, absolutely.

MR. BENSONOFF: Yes. I would like to reward container growers who do not use toxic inputs, who rely on organic fertility. I think that they should differentiate themselves. I honestly don't know whether it makes sense to put that into the USDA Organic program or not.

I have mixed feelings about that. I will say that as I'm looking at this label that's behind you all, behind that word organic I see soil based system. So I don't really know if it makes sense to put organic hydroponics.

I worry about how prominent that would be in the marketplace. Would the organic be in big bold letters and the hydroponic sort of be a little asterisk beneath it? Or would it really be clear to consumers. That's part of the question I would have.

MR. CHAPMAN: Joelle?

MS. MOSSO: You made a comment in regards to the organic community, or the consumer that made primarily by organic due to less toxic pesticide. I'm curious as to your opinion about where their opinion lies in regards to this issue, because they are definitely part of the continuum of organic.

MR. BENSONOFF: Yes, so that was based primarily on anecdotal evidence. We work with a lot of organic consumers, and I do a lot of events where I speak to people about what organic is.

I personally think that we need to balance what organic consumers want with what organic farmers define their systems as and how they intended their systems to run.

So I think in this conversation there's been maybe a little bit too much focus on what organic consumers think it is. And most of them have a pretty basic understanding. I mean, they think it means something that's healthier,

something that's less toxic. And that is somewhat true.

But there's so much more to it than that. So I would say I think that you're going to find a lot of different data out there if you look at the survey results because as many of you know, it depends on who's asking the questions and how those questions are framed.

So I would take survey results somewhat with a grain of salt depending on who's asking them. But I would say that the producers are the ones who put these systems together, they're the ones who advocated for them from the very beginning. That's really who we need to be looking at first.

And consumers are going to follow regardless of what we put in place. They're going to continue to stick with organics as they have, as long as it's clearly defined and as long as those who started the movement continue to rely on it.

MR. CHAPMAN: Emily?

MS. OAKLEY: I don't normally want to comment, but I just want to say that your answer to that question would have been almost identical to mine. So thank you.

MR. CHAPMAN: Thank you. We are now 15 minutes behind schedule. Up next is John Biernbaum followed by Isaura Andaluz. Sorry if I butchered that. John, you can start with your name and affiliation for the record.

MR. BIERNBAUM: My name is John Biernbaum. I'm here representing the Michigan Organic Food and Farm Alliance who I serve as the Chair of the Board of Directors that I've been on for the last nine years, and I'm also here as a faculty member in the Department of Horticulture at Michigan State where I've been for over 30 years, and I teach.

My job really is to help people understand the why and the what of organic farming. I teach the organic farming principle and practices course. I also was a member of the NOP Organic Task, excuse me, the Hydroponic Task

Force.

My 40 plus years of career and life experience related to both conventional plant production and greenhouses where I taught greenhouse management for 30 years and helped many greenhouse growers learn how to fertilize their plants with water soluble inorganic fertilizers.

And then the last 20 years of working with organic farmers and working with students to start the student organic farm which is a 48 week CSA, that has been certified since 2004 using high tunnels and, you know, closed production, has set me in a unique position to really stand between the perspective of the keep the soil in organic view, as well as the coalition of sustainable organics where they're more supporting the hydroponics.

I would ask you as the NOSB Board members, particularly those of you that are undecided, to please vote on the first three proposals to prohibit the use of hydroponics,

aeroponics, and aquaponics.

Clearly, it's very difficult for me to see the word organic and hydroponics together. It's unfortunate that that has been allowed to happen, but it never should have been allowed to happen, and we need to stop that.

Regarding the second proposal about the containers, that's a little more challenging. I fully support the system that would be in line with the IFOAM and the EU grown in soil, in the ground, under the sun.

But I also spent 15 years of my life working on how we could grow in containers if it was allowed in organic. And I can tell you that I do believe it is very possible to meet the definition as it's been provided. I think it's actually an elegant, simple way of defining it, well maybe not simple.

It would be difficult for people to understand why it works, but we have been working for many years making compost from local materials, leaves, wood chips, granular wood

chips, grass, hay, and straw, and we can grow plants for many months, many years in that media successfully, without making a lot of soluble inputs.

So it's -- yes, I figured it was about time there. Off by just a little bit.

MR. CHAPMAN: Francis?

DR. THICKE: Thank you, John. Yesterday, Jerry Davis told us that in his experience, he has some really good compost, and he could grow tomatoes from start to finish. And then when he ran out of that good compost, they wouldn't go very far, they faded out at three months or something.

Could you tell us about what it takes to make that kind of good compost, and have you done that?

MR. BIERNBAUM: Yes. I was glad to hear him say that, and I think that's really the question that we're after, and that compost unfortunately is not well defined and it can have low nitrogen content from as little as one

percent to we're making things that have three percent.

So very big difference in the nitrogen content, very big differences in the stability. It might be used after a few months. We're working with things that we're using that are over a year old.

And then how do you get the nutrients into a form that are going to be there for long-term, slow release. You pointed out late yesterday that it's not about putting in a fish meal or, you know, plant meal or whatever in and expecting that to release the nitrogen.

We have to get that nitrogen first into a biological form, and then into a form where it's release is restricted either chemically by having it be more complex, or physically by having it occluded or contained in particles where it's released over a longer period of time, or by affecting the biology.

We can think about how to manage that. And unfortunately, composting has been a waste

management strategy. How do I get rid of this stuff. And what we have to do is see it in new eyes as a resource management strategy.

I need to grow plants, I want to make this media, how can I do that effectively. And that's what I've used my greenhouse background, I know what it needs to look like in a container, and then I work to make the compost look like that.

Last idea is that just one compost probably won't work. We're working on taking multiple composts, so ones that are less mature that will continue to release over a longer period of time with one that is very mature that will provide the immediate release that you need so that you can get this combination.

MR. CHAPMAN: Dan?

DR. SEITZ: You mentioned that because of your experience working in greenhouses, working with organic farmers, working with conventional farmers that you were uniquely placed to really be able to understand this

issue.

And you gave us your opinion on why we should vote against allowing hydroponics and so forth. But you didn't break out your reasons. If you could just do that succinctly, having had these experience, what are the two or three reasons that stand out to you as the reasons why we should vote in the way that you advocate?

MR. BIERNBAUM: I have experience using hydroponics. As a young person, I helped my grandfather and uncle build a gravel culture greenhouse and I learned how to make the hydroponic, the solutions and such. And I've also dabbled in aquaponics.

What you're doing in those systems is trying to create a condition where the nutrient levels are usually consistent, and so that the plant is not stressed, so that you're able to maximize growth, and maximize yield, particularly under conditions where you can also manage the light and the temperature to minimize that stress.

That to me does not sound like an organic system, you know, where we're, the plants are typically stressed and limitations are part of that system as the plant is developing, and that that's an important part of how a plant becomes resilient to further stresses and how we can help that plant to be, well there's a better word than resilient, but able to tolerate things in its condition and survive when conditions change.

MR. CHAPMAN: Dave? Asa, then Sue.

MR. BRADMAN: Last night, I reread the Task Force report for on hydroponics, and you were on the committee. This report is bifurcated. You know, there's almost, like, three reports or two reports.

And I just want to comment on what that process was like and you know, was there an attempt to get consensus. And then the last section there's proposals for ideas about labeling. And I'm just curious to hear a little bit more about what that process was.

MR. BIERNBAUM: In hindsight, I think it's unfortunate that that happened. You know, what we did was did what we were charged to which was to provide you information to the NOSB to help make a decision.

But in some way we abdicated that decision by not having, you know, that discussion and making those decisions with our own committee. But that's really, we weren't told to do that. We were told to provide information we were told not to necessarily make the decision.

The views are so different, all right. And hydroponics, as you've heard over and over again, is a system that works. All right? But I've been taught a philosophy of approaching different perspectives and how do you decide, and the first is to recognize that almost all ideas have some value.

All right, hydroponics has value. But most ideas are incomplete. All right, thinking of hydroponics as an organic system to me is an incomplete thinking. They're not aware really of

what organic farming is.

On the Soil Subcommittee, if you add up the experience of just three of the members, there was 100 years of experience. In between the six or seven of us there was over 160 years of organic farming experience.

On the other committee, there was, you know, maybe one tenth of that. You know, they didn't have the same perspective of organic farming. And so just because, you know, they view, well maybe I can best sum it up myself.

Twenty years ago, I read the OFPA and said this is great, I can grow with all these fertilizers and these inputs and make this work. But I didn't stop there. I should say it was the same conclusion that many of these hydroponic growers came to.

I went to meetings and visited farms, and I learned that no, that's not correct. That really those methods were intended to grow transplants. And because the rule does not correctly define and differentiate transplants

from harvested crops, that led to the misinterpretation that has allowed organic farming to happen, or excuse me, organic hydroponics to happen.

That never should have been allowed to happen. We heard it yesterday from three different NOSB members that that was never the intent. But our committee had to wrestle with what we were assigned to do, and it wasn't a great situation.

MR. CHAPMAN: Thank you. Sue, then Harriet.

MS. BAIRD: Hi, John. Thanks for, he came down and taught a class for us at the MOA one year, so thank you for that. And I know you teach greenhouse production, you did at our conference.

Do you produce year-round in Michigan in your greenhouses?

MR. BIERNBAUM: Yes, primarily more in high tunnels, unheated greenhouses. But we also have some heated greenhouses. I have one that's

been in use with soil for 20 years with only compost and mineral amendments.

MS. BAIRD: Do you modify the environment?

MR. BIERNBAUM: In that one, there is heat to heat the greenhouse, yes.

MS. BAIRD: And lighting?

MR. BIERNBAUM: No.

MS. BAIRD: No?

MR. BIERNBAUM: For transplants, for crop production to harvest, no. But for transplant production, it would sometimes be supplemental light use.

MS. BAIRD: There is supplemental light. Okay, another question, and this is not fair to ask you, I should have asked the gentleman in front.

But it appears, here in the Northeast anyway, probably because of the short growing time for tomatoes, that the certifiers are not allowing, or not requiring crop rotation because of the timeframe. You know, they get off the

crop of tomatoes, and then they say they don't have time to put in any kind of cover crops.

What is your interpretation of that, because you teach NOP compliant systems. And of course, we know 205 says producer must implement crop rotation.

MR. BIERNBAUM: I would agree with your assessment, that certifiers are allowing that. I believe that is wrong. You know, I worked for years when I started how to develop rotations for greenhouses.

All our greenhouses are fully rotated between cool season and warm season, and we deal with the problem that you have a high concentration of solanums in the summer and you have a high concentration of brassicas in the winter. All that can be dealt with, and it should be dealt with.

And it's because of the certifiers or because of the interpretation, you know, that it doesn't have to happen in greenhouses because there was never a greenhouse regulation done by

the NOP that those things are allowed to happen.

So I wouldn't blame the farmers, but it is wrong.

MS. BAIRD: Okay, thank you.

MR. CHAPMAN: Harriet?

MS. BEHAR: So you work with a lot of young people. And I know that we hear a lot that hydroponics is an access point for beginning farmers and small scale farmers to move into farming, and that without hydroponics, these people would not have access to being farmers.

So for the people that you are teaching in your school, do you find that they've been able to become successful small or mid or large scale farmers in soil, or do you think that we're closing a door on young people to get into farming?

MR. BIERNBAUM: I've literally worked with hundreds of students over the last 15 years who have gone out, and many of them I can, could probably name 20 or 30 who have gone out and either worked on farms or started farms, none of

them hydroponically.

Any of the students in class when I came back and I talk about being on the task force, are appalled at the idea that hydroponic would be allowed as organic. I have not met one student that, well I take that back.

There's maybe one or two, you know, that started out thinking that maybe you could do it organically. But when explained what the limitations are, you know, accept that they're not aligned. They are antithetical, opposite, you know, they're just not the same thing.

MR. CHAPMAN: Thank you. I have one question for you as well. You mentioned just right there that organic farmers are appalled by hydroponic organic, and you mentioned three previous NOSB members who testified about this.

And I probably should have asked them this question as well. But as far back as 1995, the NOSB wrote something along the lines of hydroponic production and soil media may be labeled organically, organically produced and

shall be allowed if provisions of OFPA are met.

Now there's a lot of debate that's gone on around what was truly meant by that, but that line is in there. It opened the door. That is the basis for this opening that we're dealing with now.

And I don't see any similar statement in anything around, like, opening the door to other clearly prohibited practices in organic like GMOs. That door would not be slightly even cracked like that.

So how do you rectify that that's back as far as 1995, but you're saying it's appalling and no one would ever, ever consider these to be, you know, used in the same sentence?

MR. BIERNBAUM: I would rely on what I heard yesterday, and plus I've asked that question over and over again through the process is that you've just said it was the NOP that said that.

MR. CHAPMAN: The NOSB. That's from the National Organic Standards Board, the very

first one.

MR. BIERNBAUM: So the NOC, that National Organic Coalition?

MR. CHAPMAN: National Organic Standards Board, this board in 1995. That is some of the members that have testified here.

MR. BIERNBAUM: Some of the members, okay. So you know, again --

MR. CHAPMAN: It was a unanimous vote. That's all 15 members wrote hydroponic production and soil media may be labeled organically produced, shall be allowed if all provisions of OFPA have been met.

MR. BIERNBAUM: My understanding, what I've heard by many of them in the committee, the people that talked was is that they never, when they said as long as the other provisions were met, that they didn't think that that would ever be possible, that it was coming back to this idea of a compromise that they thought they were yielding to some people on the committee that had that perspective, but that it was a minorities

perspective.

And rather than fight it then, that they compromised because they thought it would never go forward. Is that I think is the answer to your question. And again, it's what I argued on the task force. It is unacceptable to leave these important issues, you know, without using accurate words.

The best example is a greenhouse in the NOP from the beginning has been defined as an enclosed, a permanent enclosed structure. That is not acceptable. A greenhouse is a structure with a transparent roof, and that has led to many issues that are problems with lighting and things being done in buildings because greenhouse wasn't defined properly.

So accurate use of words and really dealing with these things, which you're having to deal with now, is very important.

MR. CHAPMAN: Thank you. Thank you very much. Up next is Isaura followed by Terry Shistar. Isaura, can you start with your name

and affiliation for the record.

MS. ANDALUZ: Good morning. Isaura Andaluz, and I'm with Cuatro Puertas, a community development corporation in Albuquerque, New Mexico. I also sit on the board of OSGATA and the steering committee for the Organic Farmer's Association.

I've been a grower and a beekeeper for about 30 years. And through Cuatro Puertas we have an organic seed breeding program where we work with community in trying to get new farmers to build seeds, I mean grow seeds.

In Albuquerque, we I work with seeds resilient to temperature extremes. Our normal late spring highs of 90 degrees went up to 100 degrees last year, and 105 this year. New seedlings baked in the intense heat, and even established plants had scorched edges.

Eventually, almost everything recovered, and the fruit trees produced abundantly. All I did was watch and water. These plants were in the soil in the ground.

Organic farming is part of a complete living system that works with nature. Everything is connected. There is not one person, corporation, or government that can create a seed or soil. No one.

Seeds are the memory of life. Soil is a reservoir of water, bacteria, and fungi. Without soil, no seed can continue its journey into the future, and no one, humans, animals, insects, or reptiles will have food. No one.

The organic movement was born of the simple but profound recognition that all life on dry land, on mother Earth comes from the soil. It addresses health and the possibility of a future. It is about ethics and the foundation of society.

The soil food web is educational bible by which we understand the process and is a product of a practical model of application for the creation of a truly sustainable agro-ecosystem.

That is a system that functions as a

coherent organism, with no dependents on external inputs beyond what nature provides, sun and rain and hydrologic flow, and no accumulation of harmful outputs.

In other words, no waste. That is the definition of sustainability, and what is at risk now. I've participated in two rounds of the USDA's Agriculture Center 21 committee which served to rubber stamp recommendations from the farm bureau and the biotechs.

These recommendations were later used to justify decisions made by government agencies. So I am well aware of the influence of money in our public process. The last AC21 recommendation made all crops' identity preserved except for GE, genetic engineered.

This means that the farmers assume all responsibility to protect themselves from G contamination or damage, further threatening an organic farmer's right to farm, and human dignity.

Hydroponic systems do not come from

the Earth. This is an idea that comes from corporate boardrooms and the industrial manufacturing world. It is about distorting organic standards and definitions. It addresses only the marketplace and is focused on short term transactions.

As such, this is yet another foolish attempt to convert sustenance and nourishment, the gifts of the commons into commodities, proprietary formulas, and profit, and it seeks to do this again by limiting the workforce, the living creatures who make up the soil on which our lives depend.

Let's take this idea and return it to the fungal substrate where it belongs. And I also want to say that as a community economic consultant, I did work with an aquaponics operation in New Mexico that was doing Tilapia fish farming, which failed.

MR. CHAPMAN: Thank you. Questions? Harriet?

MS. BEHAR: Thank you for bringing the

soul to organics.

MS. ANDALUZ: Thank you.

MR. CHAPMAN: Thank you. Up next we have Terry Shistar followed by Marni Karlin. Terry, you can start with your name and affiliation for the record.

MS. SHISTAR: Hi. My name is Terry Shistar and I'm on the board of Beyond Pesticides. We have a long history of involvement with organic production, and here are some of our present and former board members.

We submitted comments on all of the issues before the Board at this meeting. A couple of years ago, NOP tried to rewrite the NOSB charter to say that most of the Board's work was done.

Well, that's not true. The NOSB has entered a new stage. The original work of establishing a National List and regulations defining the program has been completed, and the NOSB has entered the stage of refining the program so that it remains consistent with

organic values as organic production grows.

Some of those refinements have been made, such as the rearrangement of the sunset schedule to even out the workload of the Board, while others are awaiting final action by NOP.

There's a great deal more to be done though. Some of this work is work that has been put off, some arises as the maturing of organic into a nearly $50 billion enterprise, and some is unanticipated.

Most importantly, the NOSB must ensure the adequate oversight of the program that's in place to ensure consistent certification and enforcement of the law to protect organic producers and consumers.

While the work of examining materials as petitioned at sunset continues, some items on the NOSB agenda at this meeting are examples of issues that need to be addressed by that mature NOSB.

Preventing certifiers from certifying organic, or certifying as organic hydroponic

operations, eliminating incentives to convert native land to organic production, clarifying that prohibition of genetic engineering and ensuring that all steps in the organic supply chain are covered by enforcement.

But there are other issues that should remain on the work agenda. Evaluating so called inert ingredients which make up the largest and often the most toxic part of allowed pesticides. This has been identified as unfinished business since OFPA was passed.

The NOSB has recommended a process which requires as a next step a memorandum of understanding between USDA and EPA. Looking at the need for and characteristics of materials used as cleansers, disinfectants, and satirizers to ensure that necessary materials are provided on the national list, and that they are evaluated using OFPA criteria.

Examining contaminated inputs and means to eliminate them and mitigate their inputs, evaluating materials such as marine algae

whose use in organic production contributes to ecological harm as organic production expands in scale.

Enforcement of imports as organic production, both globally and domestic producers rely on imported feed grains, and restoring the meaning of sunset to ensure the continuous improvement of organic integrity. Thank you.

MR. CHAPMAN: Thank you, Terry. Emily, Dan, Dave.

MS. OAKLEY: This is actually a question for the NOP regarding one of the comments that Terry made, the comprehensive review of sanitizers that we've asked to have on our work agenda.

I was wondering what the status of that was. And assuming that that will be, I do assume that that will be approved as our requests typically are.

DR. LEWIS: Thank you, Emily. So that was a question that was asked yesterday by Harriet. So we just received the work agenda

item. We need to talk with our new leadership team that just came on board. So looking forward to sharing that with them and discussing it in terms of next steps.

As I mentioned yesterday also, this is a new topic that we want to be thinking about. And if the public has any information to help the Board as part of this possible work, we encourage you to provide public comments on this issue.

MR. CHAPMAN: Dan?

DR. SEITZ: Could you help me understand a little bit more the inert issue? Maybe just tell us a couple of examples that if we knew those were inert ingredients that we allow just because we call them inert, we might be troubled or even horrified to find out that those are allowed under our standards.

And then also, would it be through our technical reviews, asking for that type of information if we asked that any inerts be identified and be described, would that be a way for us to begin looking at inerts?

MS. SHISTAR: Okay.

DR. SEITZ: I know it's a big topic.

MS. SHISTAR: To answer the first question, for nonylphenol ethoxylates are one, that's one example of some toxic, endocrine disrupting chemicals that are used as inert ingredients in some pesticides. They're used as surfactants.

BHA, or BHT, maybe both BHA and BHT are also examples. I don't have a list in front of me, but last meeting we submitted a report that contained the whole list of those that are used in organic production.

As far as the Board has actually set up a process for reviewing inerts. And I don't know, if the process were to if you look at a pesticidal active ingredient that's allowed in organic, and look at the inerts that are associated, you might find, you might run into problems with confidential business information.

So the process that was recommended by the Board involves divorcing the inerts from the

actives, though looking at them together is actually better. But so the process that was suggested by the board involves looking at them, working with EPA and EPA's Safer Chemical --

MR. BRADMAN: Safer Choice Program.

MS. SHISTAR: Safer Choice Program, yes. To evaluate them. And that seems to be a, it's a good way to go because working with Safer Choice Program involves EPA, it uses EPA to produce basically technical reports that the NOSB can then evaluate.

MR. CHAPMAN: Thank you, Terry.

MS. SHISTAR: That's the way I see the system working, anyway.

MR. CHAPMAN: Dave?

MR. MORTENSEN: Terry, I, as a new member of the NOSB, I'm really amazed at the workload. It's enormous, and it's a volunteer board. I'm curious if you have any ideas about how a group like yours or others that have been in attendance here could be more actively engaged in working with the Board to move things along.

Something like the inerts, and several of us have been looking at that. And you know, we want to get that going for sure. That is going to be a huge task, I can say just having read the documents that have been written so far.

Any thoughts about how organizations like yours could help in this process more actively?

MS. SHISTAR: All you have to do is ask. Really. And we're happy to help.

MR. MORTENSEN: I guess I would just personally encourage folks in the room to be thinking about how we, you know, think about ways of supporting the work of the Board more actively. And I'm not sure that actually leaving it to Board members to ask for help is the solution. Just --

MS. SHISTAR: Well, okay, so here's another --

MR. MORTENSEN: And I bring this up because we, you know, just imagine, I was involved with some other things with the EPA over

the last ten years. EPA has a whole Staff that reads public comments, 4,000 public comments on 24d, right? And then I would work with the EPA folks that had read through the public comments, we're reading 2,400 public comments on top of all this other stuff.

And so I'm just, I just am sure that there must be a better way than we're proceeding right now to help get the work of the Board done.

MS. SHISTAR: Okay, so this is what the open docket was created for was to allow a two way exchange in between the meeting public comment times so that the Board could indicate to the public what they're working on, what information is needed, and we could submit information to you when it's not that busy time when you're reading 2,400 comments or something.

And I think the process has been set up and can work well, but it really requires a two way communication. It requires the Board to let us know what information you need in the interim.

I'm a fairly faithful reader of the subcommittee notes, but they don't always say what information you need. And when I find that there's information that I can provide, I try to provide it.

But I think that using that open docket system as a two way means of communication could really be helpful to the Board.

MR. MORTENSEN: Thank you, Terry.

MR. CHAPMAN: Thank you. We're going to have to move it along. I request that Board members keep their questions succinct so we can get to lunch sometime today. I know it's still early in the morning, but we are currently 30 minutes behind, which means we will work through lunch if that's what's necessary.

So Marni Karlin is up next, followed by Jay Feldman. Marni, if you can start with your name and affiliation for the record.

MS. KARLIN: Thanks, Tom. Good morning. My name is Marni Karlin and I'm an independent organic policy consultant with Karlin

Strategic Consulting, and today I'm testifying on behalf of Nature Ripe Farms, a certified organic producer of blueberries in containers.

I would first like to acknowledge the strides that have been made on this issue of certified organic container production. For the first time, this meeting's documents demonstrate a consensus on the Board that container production should be allowed in organic with appropriate standards.

And that consensus should be applauded. It has taken a lot of hard work to get here. Of course, the question remains what do those standards look like, and that's where the rubber hits the road.

It is consistent with OFPA and with the principles underlying organic that we focus on an outcome based standard rather than prescribing amounts of inputs that are allowed, because of course organic is not a set of standards for input and substitution, but rather about creating a set of sustainability outcomes.

So we look at fostering a national and diverse soil ecology and maintaining and improving biodiversity, and soil and water quality. We identify a variety of site specific approaches that would achieve those outcomes, approaches like incorporating hedgerows, recycling water and substrate materials, using borders.

This is exactly how we, as an organic community, have looked at the crop rotation requirement as it pertains to perennials for years. We look at the desired outcome and determine whether a grower of perennials utilizes organic compliant methods that achieve those outcomes.

So where do we go from here? The minority view is a step in the right direction. And that along with the consensus that container production should be allowed in organic encourages me that despite how it might feel right now, we are actually near compromise.

Someone yesterday commented that it's

really frustrating to feel like we're in this me or thee situation, and it's easy to feel that way, both in this room and in our society writ large these days.

But I don't think it has to be that way. I believe we can take a step back, identify where we have consensus, and create a we standard, not a me or thee standard but an outcome based standard that works for the organic sector.

And what the organic sector wants is a strong, consistently applied outcome based standard. I encourage the Board to send this proposal back to the Crop Subcommittee for continued work on such an outcome based standard, something that focuses on ensuring outcomes rather than prescribing inputs.

I commend you for your progress, and implore you not to walk away from this important issue, but rather to see it through and continue to work towards that standard. As a sector, we need a clear standard that can be applied

consistently, and we rely on the NOSB to create such things.

And finally, I would really like to thank each of you for your service on this Board. I know it's hard work. I know it's a volunteer board. And at times you probably feel like you're just angering everyone.

But that's actually when we're close to the compromise that moves us forward, and I implore you to keep working on that. Thank you.

MR. CHAPMAN: Thank you. Thank you, Marlin.

MS. KARLIN: Thanks, Tom.

MR. CHAPMAN: Up next is Jay Feldman followed by Nate Lewis.

MR. FELDMAN: Good morning. I am Jay Feldman, Executive Director of Beyond Pesticides, served on the NOSB from 2010 to 2015, and chaired the Crops Committee for a time, and then four years on the Inerts Task Force. So there's a lot of history there on inerts.

I would like to talk a little about

the process based approach that OFPA is, and the law, the science, and the practice that is involved in that decision making.

The role of the NOSB is a key issue I think that we need to address here, the NOSB being the keeper of the organic label. First and foremost, the Board must ensure that there's public trust in that label, which translates into market demand.

We heard yesterday about protecting the brand. Integrity of the process establishes that trust.

Secondly, the context of the decisions before you is critical. Yes, the job of the NOSB members to bring the voice of the stakeholder group that you represent to the discussion.

However, in the context of the law, we must adhere to the criteria established by the law and the policies and procedures established by the Board, previous Board decisions, and the underlying and emerging science, or new science.

We must recognize there is a balance

struck so that the public trusts the process. You have to be willing as a Board member to accept that not everything can be labeled as organic.

And remember why the Board was established. You are on a Board to one, guide the process to tell USDA what is good for organic, what is legal under the law, to challenge the deficiencies that undermine the value of the label.

That goes to enforcement, weaknesses in the certification and inspection process, failures of government to follow Board recommendations, and you must help guide the organic community to continuously improve as part of the five year sunset review process.

Government is too often crisis driven. The NOSB, the reason you're sitting there is to seek to avoid crises. Government waits for Washington Post articles and law suits, then focuses on putting out the fire.

The NOSB must seek to avoid fires by

having a pulse, or knowing the pulse of the organic community and the issues before us.

Organic grew with every food safety crisis that was before EPA and FDA. Even though FDA and EPA saw those crises coming, organic will shrink with every organic crisis if the NOSB doesn't get out in front of these issues.

Organic differentiates itself in the market by design and standards, alternative labels. Every time an alternative label appears on a product alongside an organic, the organic seal, it undermines public trust in organic.

Isn't organic regenerative of the land, non-gmo, humane to animals, bird friendly, rainforest friendly, protective of those who work organic farms? It should be if it isn't.

MR. CHAPMAN: Thank you. Thank you, Jay. Up next is Nate Lewis followed by Rex Kittle. And I don't see Rex Kittle walking up, so Nate, hold on one second. After Rex Kittle is Phil LaRocca. Just make sure Phil knows he's on deck after that. Nate, you can start with the

name and affiliation.

MR. LEWIS: Sure. Good morning, my name is Nate Lewis, Farm Policy Director for the OTA. I also chair the Washington State Department of Agriculture's Organic Advisory Board, I own and manage an organic livestock crop, wild crop and aquiculture farm in Olympia, Washington. Our initial inspection is schedule for two days from now. And I'm on the Board of Directors for the Olympia Community School where my daughter's a third grader in Joanna's class.

First, I would like to express OTA's strong support for the CACS's efforts to eliminate the incentives to convert native ecosystems to organic production.

It's important that organic premiums not be the driving force behind destruction of our natural resources. However, we do believe that additional flexibility is necessary in order to enable farmers to clear land so they can expand their operation. Please consider some additional reasonable flexibility to this

proposal.

On the issue of hydroponics and container production, I want to be clear, as I thought I've been in the past. OTA supports the prohibition of hydroponics and aeroponics in organic production.

We would have supported the Crop Subcommittee recommendation to prohibit hydroponics at this meeting had you retained the original definition for this type of farming practice.

The new definition which centers around production practices -- which centers around which production practices hydroponics doesn't conform to is not a good definition.

In order to move this discussion forward and give USDA recommendations that can actually become regulation, we need to return to definitions that accurately describe what these systems are, not what they are not.

With respect to container production, I urge each and every one of you to think about

what are the goals that container guidelines should ensure are achieved at the farm level, presence of mycorrhizae, fostering of biodiversity and cover cropping, maintaining stable nitrogen cycles.

The Crop Subcommittee, in my opinion, did not do a good job of outlining what the goals were for container production in the proposal, nor did they relate the arbitrary nitrogen requirements back to those goals. How can we be sure that 20 percent limit on liquid feeding and 50 percent nitrogen in the pot before the crop is planted will achieve these goals when we don't know what these goals are.

I encourage you to come to consensus on what the goals are for organic container producers, and urge, and use those goals as a roadmap for the standards recommendation.

Some in the organic community have decided we need to have a war around this issue. I would argue however, we're a lot closer to consensus than it may appear.

The Board apparently all agrees that container production should be allowed with appropriate standards, and they're working through what those standards should be. This is consensus, this should be celebrated. Bravo.

MR. CHAPMAN: Thank you. Francis, Emily. Francis, go ahead.

DR. THICKE: Thank you, Nate. You said you support the 2010 recommendations prohibiting hydroponic. If you have a system that's 100 percent liquid feed, would you call that hydroponic, regardless of the substrate?

Suppose for example it's coconut coir. One hundred percent liquid feed, would you call that hydroponic?

MR. LEWIS: Would that include, like, a dairy farm using 100 percent liquid manure for their silage? Or out of the outer crust of the Earth?

DR. THICKE: Pardon me? Are you trying to give me the strong man argument here and take me off track? What I'm looking for is,

and you've been very unclear about this. You say you support the 2010 recommendation that recommends prohibiting hydroponics.

And then I'm asking you if you have a system that's 100 percent liquid feed with coconut coir, is that hydroponic?

MR. LEWIS: I don't really want to answer, I mean, I'm sorry. What are you trying to get at? I don't really --

DR. THICKE: I'm trying to get at what you mean by hydroponic?

MR. LEWIS: I think we need appropriate production standards for containers. And a liquid feeding, I think it has to do with where and what the product is grown in. If it's in a pot, then it should be, you know, and it's a container production, it meets the container production requirements that you're trying to propose, then it should be allowed, it should be container production.

DR. THICKE: All right. Now, all hydroponics are done in containers, right?

That's a given. And so the question is if it's 100 percent liquid feed, is that hydroponic or not?

MR. LEWIS: I don't know.

DR. THICKE: Okay, thank you.

MR. CHAPMAN: Emily?

MS. OAKLEY: Just a point of clarification that I don't know that I would use the word consensus on containers so much as the word compromise. I don't think that there was consensus among us that we wanted containers, but we saw that as the point of compromise. So just a point of clarification.

MR. CHAPMAN: Ashley?

MS. SWAFFAR: So yesterday we heard a lot of different back and forth about the two different models of in-soil versus hydroponic and containers and carbon. We heard a lot about that. Can you give us your opinion on that?

MR. LEWIS: Well, I'm not a scientist. But, I think we need to be cautious when we're looking at carbon footprints as it relates to

organic farming. The Organic Center did come out with a research study in conjunction with the Northeastern which showed that organic farms in general do have higher amounts of stable organic matter in their soils than conventional farms. That's great research.

But I think it's important to also recognize that on a per-yield basis, organic farms are rarely carbon neutral or carbon positive. And so if we're going to bring carbon and climate change and carbon footprints into the discussion, I think we need to look at operations on a holistic perspective from the seed to the mouth, the whole system, and whether or not it contributes to climate change or has some mitigating effect.

MR. CHAPMAN: Dave?

MR. MORTENSEN: Yes, and I would actually take it one level higher, and that is how many people are you actually feeding. I think these comparisons of organic production acre unit estimates of production are, in my

opinion, meaningless because we compare for example maize production conventional to organic.

Meaningless. Sixty percent of the maize that's produced conventionally is used to produce ethanol.

MR. CHAPMAN: Dave, I need to get to questions.

MR. MORTENSEN: So I guess when we want to talk about sustainability, we need to look at the right numbers. That's all I'll say.

MR. LEWIS: I would encourage you to consider that as a research priority for the next round. I think it's an important --

MR. MORTENSEN: Yes, I agree that it's an important priority.

MR. CHAPMAN: Joelle?

MS. MOSSO: Nate, I'm curious with the OTA's communication networks with consumers, I'm going to ask that same question I've asked previously is that what is your interaction or feedback from the organic consumer community that is pulling this market forward in exponential

growth in regards to containerized production.

MR. LEWIS: That's tough. I think it's challenging. Our membership is trade, and we do interact with consumers. But I don't really want to try to say that we understand what the consumer thinks or what their perspectives are.

I mean, I think a lot of what's been contributed has been anecdotal, and from a particular perspective. So it's really challenging to answer that, what the consumer thinks about containers.

MR. CHAPMAN: Thank you. Steve?

MR. ELA: You've completely confused me about your definition of hydroponics now.

MR. LEWIS: Okay.

MR. ELA: Could you give me your definition?

MR. LEWIS: It's in the 2010 recommendation, the production of terrestrial vascular plants in an inert media with, you know, soluble nutrient solution, something like that.

MR. ELA: And you're going to say that coconut coir is not inert?

MR. LEWIS: I would say that the containers that are producing organic crops currently are not inert media. Correct.

MR. ELA: I think you're hitting the nail on the head that it's hard to define.

MR. LEWIS: Right, and I guess --

MR. ELA: Even your clear definition is not very clear.

MR. LEWIS: It's hard to define. But I would also say that I don't know that we need to necessarily capture every single thing that we don't want to have in organic in a definition and then prohibit it.

We don't say conventional dairy farming is defined as everything that doesn't meet the organic standards, and that is a prohibited practice. We define what the practices are that are required for organic dairy farming, and if you don't meet those, you can't be organic. Does the parallel make sense sort

of? I don't know, it's challenging.

MR. CHAPMAN: Francis, and we'll end it there.

DR. THICKE: Exactly what we did, we defined container production that would be allowed, and then we said what doesn't meet that standard is not allowed.

MR. LEWIS: I understand that.

MR. CHAPMAN: Thank you, Nate. Up next is Rex Kittle. Is Rex Kittle here? Seeing no Rex Kittle, we'll move on to Phil LaRocca. And then Kelly Damewood after Phil.

MR. LAROCCA: Good morning, my name is Phil LaRocca, I'm the owner and winemaker of LaRocca Vineyards. I'm also the Chairman of the Board of Directors for CCOF. I will be starting my 45th year as an organic farmer, being first certified in 1975.

I attended probably every NOSB meeting for the first seven years of your inception. I cannot tell you how many meetings I've been to. My crusade was to try to at least limit or try to

keep out synthetics in organic.

It was very clear cut for me. This issue on hydroponics is extremely tearing me apart because I have friends -- first of all, I understand both arguments on both sides. I have friends on both sides of the issue, and I respect the farmers on both sides of the issue.

I am hoping that we can come up with some kind of compromise and resolve this, and move on. As wearing my CCOF hat, I am proud that our board is made up of all farmers, except for a processor seat. So I'm also here to protect our farmers.

And whether the NOP made a mistake or not, we do have 108 farmers that were certified hydroponic organic. A lot of these are not large growers, they are small growers and we would destroy them economically.

I think that we are not the Monsanto of the world where we go out and pollute our neighbor and don't give a damn about it. There has to be some compassion in this industry, so we

need to come up with some sort of compromise.

Our compromise that we are throwing out at CCOF is total disclosure, labeling. Let's label it and make the consumer decide. I totally disagree with somebody earlier that didn't put a lot of emphasis on the consumer.

None of us in this room would be here if people weren't buying organic products. So the consumer is the X factor. And many years ago at CCOF, we ran a study, who bought organic. And roughly it was women between the ages of 28 to 55, well educated, and I want to emphasize that, well educated, felt that it was healthier for them.

About 60 percent had children and said they felt that buying organic was both healthy for them and their family. And the one thing that was consistent across the board when asked -- at that time, I should add that it was 30 to 33 percent more expensive to buy organic over conventional.

And all of these people that took the

study said we are willing to pay the extra money as long as it is organic. By God, it had better be organic. So make total disclosure on the label. You don't need a PC code to tell people it's hydroponic.

Put it on the label that people read it, and let the consumer, the organic consumer decide whether they want to buy it. And that will dictate whether hydroponics or containers exist or not, whether the consumer goes out and affords it. Thank you.

MR. CHAPMAN: Thank you, Phil. Francis?

DR. THICKE: Thank you, Phil. Now when you take your CCOF hat off, what do you think personally? Do you think hydroponics is organic?

MR. LAROCCA: I do. I truly do. As long as the standards are followed closely that organic ingredients, and for example, I know one hydroponic grower, it took him two and a half years to come up with an organic solution before

they even started their greenhouses and planted in it.

I got to be honest with you, when I was first asked to speak on this, I was shocked. I didn't realize that this was going to be so controversial. I think that most of the people that we know, especially the smaller growers, are already labeling it certified organic hydroponic.

So I think, you know, we have a tendency to dumb down the organic consumer. And the organic consumer is not dumb. I think we have a little higher consciousness than most people think we have.

I consider myself an organic consumer as well. And I do read the label of everything I buy, organic or not organic.

MR. CHAPMAN: Asa?

MR. BRADMAN: I'm just curious to hear more about how the Board interacted, and whether there was I guess bifurcation or, you know, how was it that the vote developed?

MR. LAROCCA: The vote, it was very

tight. We had a lot of our farmers that totally believed in it. So I should add that I grow in soil, and I probably spend the first 25 years of my organic cultivation developing my soil. So I totally believe in that.

I think the change came on our board when we talked about labeling. And then it became a pretty good majority that agreed if it's labeled, we can go on with this for a lot of our vegetable growers in particular.

MR. BRADMAN: Have you talked about this with other certifiers in the country?

MR. LAROCCA: I have not. You know, from this NOP, I sit on the Board of Directors on the farm side. So there's a firewall between us and our certification side. So I try to go along with what the organic farmer wants, and try to do everything I can to protect them.

That's why I feel it important for me to be here because we do have these 108 growers that have been operating with certification. And what are we going to do with these guys? I don't

think that this organic community can just throw them out on the street. I personally know we will devastate economically several of our growers.

MR. BRADMAN: Can I have a follow up question? So you said you believe hydroponic is organic.

MR. LAROCCA: I do.

MR. BRADMAN: So can you explain that and why, what are the outcomes that make it organic?

MR. LAROCCA: Well, I personally understand the concept of soil. But when all this started, in our tasting room, and I am organic so a lot of my customers come because I have an organic wine.

But I would say 40 percent are just off the street wanting to taste wine. So we ran a little survey of what people thought was organic. Most of them said they don't want synthetic pesticides and chemicals in their food. That's how most of your organic consumers.

So I think if a hydroponic or a container grower comes up with an organic system that truly is organic and make the rules as strict as possible. You know, no lenience. Make it as strong as any organic farmer has to follow that's growing in soil and follow it.

So if they're using inputs that are qualified as organic, then label it an organic system and a hydroponic system. So you go to a grocery store, I'll use myself as an example.

If I go to a store and I'm going to buy basil, if basil is grown in soil, I'll probably buy that first. But if I have a choice between conventional basil and basil grown organic hydroponically, I'll buy the hydroponic one.

MR. CHAPMAN: Thank you, Phil. So I have Dan, then Sue, and I have a question. No, Phil. Phil, Phil, Phil, come back. I'm just saying thank you to try to cut it off.

MR. LAROCCA: Oh, I thought you said thank you to go.

MR. CHAPMAN: Succinct, succinct is the key words here. I have Dan, then Sue, then myself and we'll have to end it there.

DR. SEITZ: You mentioned the potential hardship to hydroponic operations if we did not have a organic hydroponic standard. Yesterday there was someone who testified, I gather the owner of a large chain of natural grocery stores, who said that he has seen harm to conventional, I mean to organic soil based growers in terms of the crops that they sell to the stores because they've been supplanted by the year round hydroponic operations.

So I'm just wondering if it's fair to say that no matter what decision we make, there is likely to be some economic hardship in that sector of the organic industry?

MR. LAROCCA: That's true. But I think the labeling may differentiate that, as I explained from my own buying power. I think right now a lot of hydroponic people are not labeling their stuff. So the consumer doesn't

know.

DR. SEITZ: Right. That may be one way to at least level the playing field somewhat so to speak. Yes. Great, thanks.

MR. CHAPMAN: Thank you. Sue?

MS. BAIRD: I hear this back and forth, and --

MR. LAROCCA: Right there with you.

MS. BAIRD: And we will continue to hear this back and forth. You're a wine maker, correct?

MR. LAROCCA: Correct.

MS. BAIRD: And this is a just if. If you had some container or hydroponic competition, would you feel different?

MR. LAROCCA: No, and I'll tell you why, because I am competing against, I'm from California. Our minimum wage is $15 an hour. We have to pay overtime to our employees, we have to play lunch and breaks. And I am competing against organic wines coming in from Chile where they pay $4 a day for their labor. I just got to

step up my game to compete.

MR. CHAPMAN: Thank you. Phil, I have some questions as well, two I think. So I'll try to keep it brief. First of all, you mentioned that your board is primarily farmers, one processor. You guys, you have been one of the few in-ground soil commenters who supported a concept of organic hydroponics of some form.

And I've also though read critiques that your board is made up of hydroponic farmers. Can you speak a little bit of the make-up of your board just to set that right.

MR. LAROCCA: We have one hydroponic farmer on the board.

MR. CHAPMAN: And everyone else is in-ground soil?

MR. LAROCCA: Everybody else is in-ground. We do have a dairy producer.

MR. CHAPMAN: Okay. And the number of your board members?

MR. LAROCCA: I think there's 16 of us.

MR. CHAPMAN: Sixteen. And they, how are they selected?

MR. LAROCCA: We are broken up into chapters. So you are nominated by your chapter to be a board rep. And then you get voted on from the board itself.

MR. CHAPMAN: So it's 16 members representing chapters across --

MR. LAROCCA: California.

MR. CHAPMAN: -- California.

MR. LAROCCA: And we have one Mexico chapter.

MR. CHAPMAN: One Mexico chapter. And then can you speak, we've heard a lot from northeastern in-ground soil production. And you're one of the few probably western in-ground soil production folks out here.

Do you think that the regional differences in organic somewhat play into this debate?

MR. LAROCCA: I do think that economics is involved on the east coast, where I

do believe these people believe in the soil based system, I do think there's a level of economics, and I see nothing wrong with that. You're trying to make a living on your farm.

So if you see competition from the outside -- I mean, we suffer all the time from imports from South America in particular. But we just figure we just got to step up our game. I don't know what else to say on that level.

MR. CHAPMAN: Thank you. And then one last question. I know you tried to clarify this earlier, but I've read you see -- CCOF is a certifier of hydroponic operations, so they have a financial vested interest in it.

I understand there's three CCOF's, the CCOF Trade Association, the CCOF Certifier, and the CCOF Foundation. Can you clarify which CCOF you're representing?

MR. LAROCCA: The CCOF Incorporated. We are the Board of Directors. I am also involved with the foundation side, but we don't really have any involvement with certification.

We did originally, and then when the rule was proposed, which I always objected to, it's basically a firewall, it was felt that organic farmers couldn't regulate themselves in certification. There may be a conflict of interest.

But I always argued that the law board is made up of lawyers, the realtor board is made up of realtors, and the medical board is made up of doctors. But we can't have certifiers. So we're operating in a pretty good fashion.

We do have a lot of opportunity to do outreach and research. And I think we're pretty much in tune, at least correct with California, and no offense to the East Coast, but we do grow about 70 percent of your organic goods come from our state.

MR. CHAPMAN: Thank you, Phil.

MR. LAROCCA: You're welcome.

MR. CHAPMAN: Up next is Kelly followed by Pat Kerrigan. Pat, is that Pat? Okay, Pat's here, I see Pat. Kelly, if you can

start with your name and affiliation for the record.

MS. DAMEWOOD: I'm Kelly Damewood with -- Policy Director for CCOF. Given that we work with thousands of organic producers, it's quite challenging to take a hard and fast position on tough issues but our position on hydroponics is clear. CCOF does support strong standards for hydroponic in container systems. As you just heard, that is our position as adopted by our Board of Directors who have a range of opinions on this issue.

Given our position, we oppose the subcommittee's proposal. Rather than propose strong standards, it would create arbitrary overly prescriptive requirements. An unachievable standard is not a compromise as a means to an end. It's a means to eliminate a swath of producers using a certain type of production system from organic certification. Some can jump through hoops and comply, but why? It's not going to better their crops. It's not

going to further distinguish them from conventional and it's not going to make them magically mirror in-ground production.

Yes, what CCOF is saying is we completely recognize that this is a new and different production system but what we are also saying is that's okay, we can make room. Because at the end of the day, hydro is not the enemy of soil and soil is not the enemy of hydro. At the end of the day, it's not just soil health for the sake of soil health. At the end of the day, our ultimate goal is nutritious food grown without harmful inputs and practices.

And at the end of the day, whether we like it or not, USDA organic certification is the chance to transform our food system. There will never be a comparable federal investment and a transparent robust democratic certification process.

As such, we strongly urge the Board to reconsider the proposal and consider the draft standards that we proposed to the Board. We

believe these would bring consistency and clarity to the certification of these new and evolving systems, but of course would welcome the opportunity to refine and expand upon these standards.

Most importantly, please consider our labeling proposal. While we do believe we can make room for these systems, they are different and we should label them as such to bring transparency to the consumer. A label may help bridge this deep philosophical divide so that we can stop pitting growers and organizations and individuals against one another. It's radical but CCOF believes in a world where organic is the norm and our hope is respect and working together to achieve that goal. Thank you.

MR. CHAPMAN: Thank you. Francis?

DR. THICKE: Thank you, Kelly. I studied your standards and tell me if I'm wrong but you defined hydroponics as container growing and so you do not have any requirement for labeling hydroponics. Anything can be labeled

container -- as a matter of fact, I believe aeroponics is also defined as hydroponics, which is container growing, so you basically will allow aeroponics, hydroponics without labeling them as such, calling them container growing. Is that right?

MS. DAMEWOOD: Yes, thanks for that question. We don't have a position per se on aeroponics. I don't think we know enough about these systems. I think the real question would be, well what makes them substantially different from hydroponics that we could not support them? Yes, in our mind, the most important factor is not defining hydroponics as separate from container. You know, all hydroponics are containers, not all containers are hydroponics. As you all know, trying to draw the fine line between hydroponics and containers is quite challenging.

So yes, from our mind, everything can be defined as container and what we're proposing is to leave it up to the producer to either label

as hydroponically grown or container grown. So they must choose one of those labels and if that can be clarified in the standard, we should do so and we are certainly not opposed to a discussion about if we can get to a clear definition of hydroponic, then having a clear sect that must label as hydroponic and not choose.

DR. THICKE: But there does seem to be a loophole in that because it says that you must include an eligible production statement and then give examples that may include container grown, hydroponically grown, aquaponically grown. It does not say that you must use one of those. You can use any other apparently -- any other kind of eligible production statement, which you may come up with according to --

MS. DAMEWOOD: So this is a draft standard and that's exactly the feedback we need because we need to fix that language because we are saying you must label as either hydroponically grown or container grown or aquaponically grown, which is obvious -- it's not

hard to distinguish that one. So thanks.

MR. CHAPMAN: All right, I had Sue, then Ashley. Asa, were you raising your hand or not? Okay. Then Harriet, then Asa, then I'm cutting it off. Sue.

MS. BAIRD: Yes, we have discussed as the NOSB that you should limit the amount of nutrients in the container to 20 percent from liquids and stuff and then you have to use 50 percent whatever. So, I'm trying to compare that to soil-based production. Do you have those kind of limitations to your production in Arizona or other places that may not have the types of soils we do in the Midwest or Northeast. Do you limit the amount of --

MS. DAMEWOOD: We don't have any such limitation on in-ground production.

MS. BAIRD: Do you even ask those questions?

MS. DAMEWOOD: The percentage that there of --

MS. BAIRD: Using with inputs that

goes through drip lines or whatever, whatever that's not --

MS. DAMEWOOD: No limit --

MS. BAIRD: -- inerrant soil?

MS. DAMEWOOD: It's my understanding that there's no specific limitation on liquid inputs, however you define liquid inputs.

MS. BAIRD: I don't find that in the rule either. I just wondered.

MR. CHAPMAN: Thank you.

MS. BAIRD: Okay, thank you.

MR. CHAPMAN: Ashley?

MS. SWAFFAR: Thanks for your comments, Kelly. We've heard a lot of folks talk about hydroponic growers as very large growers and I know that Phillip said you have 108 hydroponic growers that you certify. Can you tell us about the size and about the percentages?

MS. DAMEWOOD: Sure. So, you know, give or take probably over 100 to some -- I think the highest we've had would be up to 130. And again, it's not for us, the most important factor

is not distinguishing hydroponic from container. I think a lot of people question when you're saying container, do you really mean hydroponic and so we kind of encompass them all as container.

I would say if you're thinking on -- and so that the range from classic, you know roots in water to substrate container production. That sort of classic roots in water, there's probably around 10 and they are most definitely very small scale family growers.

MR. CHAPMAN: Thank you. I've got Harriet, then Asa.

MS. BEHAR: So as a shock to most -- many people, I grow in containers; however, I do no liquid feeding whatsoever. I grow in rain gutters that are suspended in my earth-bermed solar greenhouse that doesn't need any heat except when it goes below 10 below zero at night. So I grow lettuce and spinach and I get about four cuttings through the winter and then I compost the leftovers.

So we were trying to define what's in a container, so not all containers are hydroponic --

MS. DAMEWOOD: Exactly.

MS. BEHAR: -- so we were trying to put it to the liquid feeding. So that's just information.

And then the other -- the question I have for you is about bringing in a new system and looking at the Organic Food Production Act and the regulations and all the things that are there that really do have so much of a tie to ecosystem improvement and soil improvement. How do you then deal with that in your certification when they fill out the organic system plan? Is it just not applicable, not applicable, not applicable?

MS. DAMEWOOD: Thanks and I think it's a -- at first, it's really important to recognize if you're growing in a container system, if we were to pursue a container grown labeling requirement, we may need to distinguish, you

know, when would you have to label as container. That is a concern of mine, you know, to distinguish, you know, because is the system, you know, using the same kind of production system science as in-ground production as classic organic. So that's an aside and something I think that is worth considering.

Our container growers are not absolved of the organics -- certain parts of the organic standards as has been expressed in the past. They are equally held to all the same biodiversity, natural resources, conservation requirements. Their OSPs are just as long, if not longer and they -- you know, it's still an evolving production system, I would say and so I think people are still figuring out what's the best type need, you know, landscape fabric between the containers or tilling and there's a wide range of factors. But they are held to all those same standards.

There is biodiversity, there's heteros. There's a lot of the same features that

you see on the in-ground production and a lot of them have both in-ground and container production and it's just one piece of their overall system.

MR. CHAPMAN: Thank you. Asa.

MR. BRADMAN: So I have in front of me opened the 2010 recommendation and I can see how this can be a little confusing. There's the recommendation and there's the preamble and the recommendation seems to leave room for the proposal that you're suggesting. But I want to see if you can comment on how your proposal is -- how it imports with the 2010 regulations?

MS. DAMEWOOD: Well, you know, I honestly --

MR. BRADMAN: Recommendations, sorry.

MS. DAMEWOOD: Yes. No, I think it's a great question. I'd be happy to do a side by side analysis and submit it to the full Board after the meeting.

I mean, basically I think what we're -- looking at the 2010 recommendation, you know, over the past seven years, a lot has changed and

evolved in container production systems and their ability to cycle nutrients, not rely on -- you know, the ability to create, you know, solutions using all organically-approved materials and so I think -- like, looking at the state of the sector today, what are the standards that distinguish them from conventional container production?

I think -- to be clear, what I'm saying is I think to this point, there's been this real effort to find that magic number, that magic standard or definition that is going to make these new production systems sufficiently organic enough in the classic sense of growing, you know, the original organic method that is all about the soil.

And what I'm saying is CCOF recognizes that, you know, these systems, some people are growing container systems that I would say would align with that, but these new systems we're talking about are different and it's not in that classic method and we're saying that's okay if they can meet the organic standards and we should

continue to refine how they are differentiated from their conventional counterparts if that makes sense.

So I think the 2010 was really more about trying to define the kind of systems that do sufficiently mirror the classic organic method.

MR. CHAPMAN: Thank you. Thank you, Kelly. We're going to have to move on. Thank you. Up next is Pat Kerrigan, followed by Julie Weisman. Pat, if you can start with your name and affiliation for the record.

MR. KERRIGAN: Good morning. My name is Pat Kerrigan. I'm with Organic Consumers Association. I'm testifying today to urge the NOSB to honor the crops subcommittee compromise hydroponics proposal and along with recommending that the Board members and certifiers do all they can do to ensure that the regulatory process that gets put into place is astringent and fraud-proof as possible.

Since OCAs founding, we've been

aligned with hard working organic farmers and ranchers who do the right thing, providing consumers with safe and nutritious food, treating workers with dignity, raising animals humanely and responsibly stewarding the land that sustains all of us.

With our first campaign back at the end of this last century, we helped to successfully lead the charge against the USDA proposed rule, which would have allowed GMOs, irradiated foods and sewage sludge to be certified as organic. We held the line against those initial threats to organic integrity.

NOSB members, I'm asking you to do your part in holding the line against the threat posed by hydroponics to soil based organic -- real organic farmers.

How disturbing that organic farmers now use the term soil organic as a qualifier and how tragic that these farmers who provide the foundation of the organic industry are facing a rapidly growing threat to their survival from

hydroponic producers that are more factory than farm, feeding plants instead of feeding the soil and who are cashing in on the integrity and consumer trust that these soil farmers have worked so hard to build. Seventeen thousand seventy-one people have signed our petitions standing with real organic farmers and to keep the soil in organic coalition and opposing soil as crop production systems and organic.

As we've stated in our hydroponics petition, the push for soilless organic is just another way for big business to further industrialize organic and marginalize the family farmers who use traditional organic farming techniques.

Organic consumers in the U.S. are just now learning about the hydroponic bait and switch but have no way of knowing whether the organically labeled produce on retail shelves across the country is actually grown in the soil or is in fact hydroponic.

And this consumer fraud is taking

place on a larger and larger scale as hydroponic industry scales up. Shouldn't the organic consumers have the right to know whether the food they're purchasing is produced by real organic farmers or full organic factories.

Also when unknowingly purchasing watered down hydroponic produce, these consumers are being fooled into believing that with the premium price they're paying, that they are receiving the very most nutritious foods and contributing to their family's health and contributing to a healthier environment.

MR. CHAPMAN: Thank you, Pat.

MR. KERRIGAN: Thanks for your time. Thank you for answering. Thank you --

MR. CHAPMAN: Any questions?

MR. KERRIGAN: -- for your hard work on this.

MS. MOSSO: Hi. I had a question. In regards to the survey that you put out through your members, I'm curious --

MR. KERRIGAN: It wasn't a survey. It

was a petition.

MS. MOSSO: Petition. What was the petition's question?

MR. KERRIGAN: What was the petition's what?

MS. MOSSO: What was the question that they could sign to, that had to identify --

MR. KERRIGAN: To join -- keep the soil in organic and soil farmers in opposing soilless systems as being certified as organic.

MS. MOSSO: They included all of that?

MR. KERRIGAN: It was hydroponic focus. I think we mentioned aeroponic, aquaponic but it was primarily hydroponic focus.

MS. MOSSO: Thank you.

MR. CHAPMAN: Dan.

DR. SEITZ: So from some testifiers, we've heard about small scale hydroponic operations. From you, we're hearing about large corporate size hydroponic operations. I have no idea what the landscape is in the hydroponic production world. Do you have any information on

whether the majority of produce is coming from very large scale or is that just an emerging sector and right now it's small scale? Can you, do you have any way of characterizing that?

MR. KERRIGAN: Well it seems to be rapidly emerging. Just from the online NOSB testimony that I follow, then also the past several in-person NOSB meetings where hydroponics is the most controversial and has had the bulk of the comments, there's a lot of producers -- hydroponic producers talking about how many staff that they employ and that makes me think that -- just hearing the number of comments from large producers that in fact, we are looking at large scale hydroponic production.

I think they like to talk about small scale producers in minimizing the potential threat to soil health farms but just the fact of the number of soil farmers -- farmers -- this is one of their busiest times of the year and they are here. They took time out of their week, are paying for their hotels. They are here to

testify. That shows me clearly and I hope it shows you that this is a critically important issue for soil farmers i.e. real organic farmers.

MR. CHAPMAN: Thank you.

MR. KERRIGAN: Thank you.

MR. CHAPMAN: Up next, we have Julie Weisman, followed by Cameron Harsh. Julie, if you can start with your name and affiliation for the record.

MS. WEISMAN: Associate Deputy Administrator Tucker, Chairman Chapman, members of the Board, my name is Julie Weisman. I'm speaking today as a representative of Elan Incorporated and Flavorganics LLC, not about hydroponics. I am also a past member of this Board. I served on the NOSB from 2005 to 2010, during which time I chaired the Handling Committee and served as both Vice Chair and Secretary of the Board.

So first, I want to thank all the Board members for your service to the organic industry. I know firsthand the sacrifice of work

life balance that is being demanded of you.

Elan is a producer or organic and nonorganic flavor ingredient, especially organic vanilla. Flavorganics is a national brand of certified organic flavor products for home use. Along with our affiliate, Natural Flavors, we've been making certified organic flavors for 20 years now.

The first of the two items I want to address really is directed at the program but I want to make sure that my concern is heard by all. I'm in search of the lost annotation change to the listing of flavors nonsynthetic on 605A.

The Organic Trade Association submitted a petition to add commercial availability language to the annotation to the listing of flavors on 605A, which -- the position which requires no requirement for organic flavors to be used in organic products.

My companies were signatories to this petition. It was passed by the full Board at the fall 2015 meeting in Stowe, Vermont. At the same

meeting, they passed the renewal of flavors on the national list. It was supposed to be a package deal. Of course, I was glad to see that the proposed and then final rule that re-listed flavors on 605A but the annotation is missing in action and is needed to support the growth of certified organic flavors and increase the organic composition of the many organic products in which they're used.

I'm disappointed to see no evidence that rule making has been initiated and would appreciate some indication of when that might begin.

I also want to give a shout out for the renewal of the handling materials up for re-listing. Not all are used directly by my company but all are used if not by me, then my ingredient suppliers or in the products which also use my organic products as ingredients.

Flavorganics directly uses diatomaceous earth. We could not make our Flavorganics syrups clear without them.

Attapulgite also is required to clarify the organic citrus and mint oils, which are starting materials for Flavorganics extracts. Sodium bicarbonate, potassium acid tartrate are vital to the many baked products that use Elan's organic vanilla extract and sodium carbonate is needed in dairy and chocolate products that use Elan's organic vanilla.

Carbon dioxide is essential for a nonvolatile method of extraction used for vanilla and other botanicals and spice oils. Then chlorine materials are the best and most widely used tools for sanitation in organic operations.

In handling, we have a very limited tool kit to bring organic products to consumers in a form that they can recognize and use easily so please renew them. Thank you.

MR. CHAPMAN: Thank you Julie. Thank you. Up next is Cameron Harsh followed by Kiki Hubbard.

MR. HARSH: Good morning. My name is Cameron Harsh with Center for Food Safety. As

always, we appreciate the opportunity to participate in this robust, transparent process and support the crucial role of NOSB in assuring organic integrity and fostering continuous improvement.

CFS supports the crops subcommittee's intent to prohibit aeroponic, hydroponic, and aquaponic systems that eliminates soil and rely exclusively on liquid nutrients. Such systems cannot comply with OFPA or the organic regulations, which require maintaining and improving soil health, natural resources and biodiversity within an organic operation.

CSF supports clear differentiation between excluded hydroponic systems and container systems that may comply with OFPA and be eligible for certification. The proposal to establish caps on total nitrogen supplied in liquid form and the amount that may be applied after planting appears to be a valuable strategy for ensuring containing producers are consistently building, rather than depleting the growing media.

We caution the Board for moving forward without justifying the proposed caps based on OFPA, the regulations and soil biology. The organic community needs more time to weigh in on container production requirements illustrated by the need for a discussion document at this meeting.

Language in the hydroponics proposal adds Section 205.209 to the regulations but must be improved before moving forward. For example, container systems should not be exempt from 205.202B, which establishes a critical three year waiting period for applied prohibited substances.

We support denying Synergy USAs petition on anaerobic digestate due to concerns of pathogens, antibiotic resistance and animal drug residues. Digestate must remain subject to the same harvest waiting periods as raw manure when applied to organic crop fields.

We urge NOSB to pursue avenues to strengthen the definition of biodegradable, biobased mulch to ensure that only 100 percent

biobased and biodegradable products are allowed. The lack of existing products that meet this standard must not justify accepting materials that do not meet the high bar of organic.

As a research priority, NOSB should support field based research on the biodegradability of 100 percent biobased products that accounts for the high variability of site specific conditions such as ongoing research by Washington State University.

On marine algae, NOSB should identify species that can be harvested in an ecologically sound manner considering all ecosystem impacts from harvest beyond the ability of the target species to regenerate and prohibit species that cannot be harvested in such manner from using organic.

CFS submitted a brief review of available literature and urges NOSB to solicit input from and consult with marine biologists with expertise in the ecology of economically important marine species.

We continue to urge NOSB to develop a formal recommendation to NOP to add nanotechnology and nanomaterials to 205.105 as excluded and organic. NOPs action on nano to date has been insufficient and this strategy is the only means of assuring that nanomaterials are never allowed in organic. As more and more nano scale products gain food and farm uses including nanoscale micronutrients, it is imperative that this step be taken immediately. Thank you.

MR. CHAPMAN: Thank you. Emily.

MS. OAKLEY: Thank you for all of your research on marine materials --

MR. HARSH: Of course.

MS. OAKLEY: -- and I wanted to ask of the three possible approaches that we might take, one being listing allowed marine materials, two, prohibiting certain species or geographic regions or methods of harvest and three, applying the wild crop standard. Where would you suggest we begin?

MR. HARSH: Yes, that's a tough one

and we haven't taken a position on which would be the best strategy for ensuring that marine species that can't be harvested in an ecologically sound matter are effectively prohibited and I think it's likely a combination of strategies in terms of annotating national listings, for example agar-agar. If you find out through the research that a certain species has detrimental ecosystem impacts, then amending that to prohibit that species. But definitely we support factoring in the wild crop standard as a really good strategy moving forward initially and then as the research develops, then maybe a combination of strategies.

MR. CHAPMAN: Thank you. Thank you Cameron. Up next is Kiki Hubbard, followed by Lynn Coody.

MS. HUBBARD: Good morning. My name is Kiki Hubbard. I'm the director of Advocacy for Organic Seed Alliance. We are a nonprofit that works nationally to ensure farmers have the organic seed they need through research,

education and advocacy and my short comments this morning will focus on the three seeds, specific proposals and discussion documents on the agenda this week.

First, we're grateful that the Board remains committed to addressing the genetic integrity of seed. Through the most recent call for comments on previous discussion documents on the issue of seed purity, protecting the genetic integrity of seed used by organic growers is an ongoing challenge that we all know places an unfair burden on the organic sector.

Organic crop producers, seed producers and seed companies are responding to the challenges contamination poses through testing, prevention strategies and even redirecting contaminated seed lots to less valuable markets. And as we've discussed in previous comments, these practices result in burdens that go well beyond simply the cost of testing and monitoring the problem. We're committed to supporting your work on this complex issue in the months ahead.

Secondly, we are very supportive of clarifying the terminology used for making determinations about which methods are excluded in organic systems. The materials in GMOs subcommittee is headed in the right direction with using a framework and refining its process for making determinations about excluded methods.

The current proposal on excluded methods terminology is generally good and we support the listing of the three methods identified as excluded but before this proposal is approved, we think the subcommittee should include a definition for each of these terms as part of their formal recommendation. Additionally, this proposal and all future excluded methods proposals should include the excluded methods definition itself and a clear statement with citations justifying the subcommitte's decision when they move a method to the excluded category.

Lastly, as my colleague will comment on here shortly, we're very pleased to once again

see the crop subcommitte's proposal to strengthen NOPs 2013 Organic Seed Guidance Document. It's important to remember that supporting increased organic seed sourcing is more than just about helping organic growers meet a regulatory requirement. Much of our seed is currently bred and produced under agrochemical conditions in conflict with organic principles and with breeding goals that too often don't benefit organic farmers.

Alternatively, organic plant breeders and seed producers are working for organic farmers by focusing on traits that are important to low input systems such as quick emergents, weed competitiveness, nutrient use efficiency, disease resistance and more.

In other words, the organic community has an opportunity to create a path that's very distinct from the dominant seed industry controlled by agrochemical interest and this path is shaped by our individual decisions to choose organic seed when appropriate, to communicate

ongoing supply gaps to organic breeders and the seed industry and to advocate for policies and solutions to meet these needs.

And we all have a role to play in creating this path including you as an advisory board with this proposal that is before you. Thank you.

MR. CHAPMAN: Thank you. Briefly, Joelle and Harriet.

MS. MOSSO: Just a -- over here, just a quick question. In regards to the excluded methods definitions, what would be your opinion about putting that in guidance versus regulation simply due to the fluidity of evolution and those methods?

MS. HUBBARD: My understanding is that is the goal that the guidance documents would aid to further clarify the excluded methods definition.

MR. CHAPMAN: Harriet?

MS. BEHAR: Hi, Kiki.

MS. HUBBARD: Hi, Harriet.

MS. BEHAR: So I was re-looking at all of the comments on the strengthening seed guidance and there was quite a few comments about the trialing mandate or -- it's not actually, not mandated but the discussion in there that we should be encouraging seed producers -- I mean, crop producers to trial, to actually figure out what is of equivalent variety and so I wondered if you could speak to that some about is there any projects or anything you're working to help there?

MS. HUBBARD: Yes, not only do we have some projects underway to support growers in conducting variety trials, as well as certifiers helping to better understand how they can be used as a tool for identifying varieties -- organic varieties in particular that are appropriate for the organic systems.

We believe that it is a very important tool to recommend, especially for operations that are not demonstrating improvement year to year, that are not taking extra measures when

appropriate to source organic seed. We feel that this could be one way that they demonstrate they are making improvements in their practices.

Organic Seed Alliance is working. We have a variety trial guide for farmers. It's 10 years old. We are updating that manual in 2018 and it will have a special focus this time around on articulating for growers who rely on this manual. It's one of our most popular publications downloaded by organic farmers on our website, really clarifying for them or instructing them how to use variety trials as a tool to help meet the organic seed requirement and understanding equivalency issues.

So a compliment to that is that we're also working on a manual, working closely with the certification community on the organic seed requirement to help identify and publish as a resource best practices for understanding and enforcing the organic seed requirement in a reasonable and measurable way so that we can have more consistent enforcement and make faster

progress in encouraging more organic seed usage.

MR. CHAPMAN: Thank you, Kiki. I have one quick question for you as well.

MS. HUBBARD: Yes?

MR. CHAPMAN: My biggest concern with the proposal as written is around the continuance improvement requirement and while on the surface, I completely agree with it, you know I work -- we buy an extensive amount of organic oats and work with organic oat growers across the U.S. and Canada, many who source organic seed but in a given year when crop production has been bad, that equally affects organic seed production and the organic seed industry is just not as robust as the conventional seed industry is, which is part of why this is trying to fix this but that would show a noncontinuous improvement if in that next year they would have to use a nonorganic seed and maybe then they'd have to be forced to choose a varietal that would not work well in their areas, that may be more prone to disease or potentially, you know, a crop that's not the best

economic crop for them to grow at that time. What -- do you have concerns in that area as well? What --

MS. HUBBARD: Yes, Tom.

MR. CHAPMAN: -- what's your thoughts?

MS. HUBBARD: I think that is a real concern. I think that the updated regulation coupled with the guidance could help provide some flexibility in those instances and so I very much encourage that because of course, at the end of the day, we -- it's no one's intent in this room to force farmers -- organic farmers to use a particular organic seed variety if it's not optimal for their system.

So yes, there are these unforseen circumstances that are out of their control that might keep them from those annual improvements. Again, I think that there are ways to provide that flexibility and still move forward with the proposal with updates and improvements as we've articulated in our comments.

But yes, we need to be honest that

there is a concern but I do not think that it is a reason not to pass or propose that regulatory update. We believe that as written -- seed issues are complex and we believe that as written and honors that complexity and balances the on the ground reality with practical solutions and a practical proposal for moving forward.

MR. CHAPMAN: Thank you. Thank you, Kiki. We have to move on now so up next, we have Lynn Coody, followed by Abby Youngblood.

MS. COODY: Good morning. My name is Lynn Coody and I'm presenting comments for the Organic Producer Wholesaler's Coalition, seven businesses that distribute fresh organic produce across the United States and internationally. In our comments, we express our own ideas and also provide a conduit for the voices of the many certified growers who supply our businesses.

Crop materials: OPWC agrees with the crop subcommittee that both the petitioned materials should not be added to the national list. We do support re-listing all of the crops

sunset materials except Vitamin B1 as our growers indicated they do not need that material.

Hydroponics and containers: OPWC is grateful for your continued work on these difficult issues. We recognize that the lack of clear standards prior to certification of various types of ponic and container operations presents significant complexities. Some certified operations will likely lose their certification. Market share will shift for some and others will need to adapt their management practices to comply with new standards. It is clear that whichever solution is chosen, the fresh produce trade will be greatly impacted.

We hope our comments on this topic support the NOSBs work by providing ideas that provide middle ground between the views of the proponents of soil based systems and those who advocate for certification of all types of ponic operations. Our goal is to work toward a balanced solution that is rooted in compromise and compliance with existing crop production

standards and provides clear differentiation between organic and conventional production systems. We are not interested in pitting soil based growers against those who produce crops in containers. We think there are benefits to both systems when they are based on organic standards.

As explained in our written comments, we support the minority position as the best way forward because we believe it focuses on assessment of the outcome of all elements of the production system and it emphasizes biological interactions. Both are important organic principles. Our written comments provide eight suggestions for further development of the minority position. We urge the Board to consider these and other ideas to find a way forward that balances the needs of all stake holders.

Excluded handlers: We appreciate the recommendations for tightening the NOP guidance and providing additional training on managing trade with excluded handlers. The topic is critically important in preventing fraud, co-

mingling, and contamination in both imported and domestic supply chains.

OPWC strongly believes that allowing uncertified handlers creates significant exception to the standard operating procedures of the organic trade. Their exclusion from certification requires additional management by all other entities throughout the entire supply chain, as well as from certifiers and the accreditation system. Our written comments provide extensive examples of the negative impacts of excluded handlers on the produce sector.

Although we understand the strategy of proposing solutions to guidance, we urge continued work on a regulatory change to eliminate the handler exclusion. Thank you.

MR. CHAPMAN: Thank you, Lynn. Questions? I have Asa, Joelle and that's it.

MR. BRADMAN: First comment, I just want to thank you for your written comments. I thought they were really well done and just

really thoughtful and thank you.

MS. COODY: Thanks, Asa.

MR. BRADMAN: This of course goes to the issue around hydroponics and we heard earlier, a proposal for a labeling compromise that would talk about a, you know, a hydroponic or aquaponic label that could be perhaps under the NOP. How would that -- you know, I know your comments on the container proposal we have but what do you think about that as a wholesaler?

MS. COODY: Our group felt that we could definitely accommodate this as we do pass tremendous number of information bits about the products through the supply chain as certified handlers. So, we can definitely accommodate this. It would mean a change to each of the handlers information systems but we can do that.

First though, we would appreciate a clarification of the standards and an emphasis on how container production would be meeting each of the standards. After that, we view the labeling option as an additional portion of the

compromise, but we can do it.

MR. CHAPMAN: Okay. Thank you, Lynn. I share Asa's comments in appreciating your detailed comments and I look forward to a dialogue with you as we continue to work on excluded operations.

MS. COODY: Thanks, Tom.

MR. CHAPMAN: Thank you very much.

MS. COODY: We'd really be happy to help in the future with both excluded handlers and even containers too.

MR. CHAPMAN: Thank you. Up next is Abby Youngblood, followed by Jeff Bogusz. Sorry Jeff. Abby, you can start with your name and affiliation.

MS. YOUNGBLOOD: Thank you, Tom. I'm Abby Youngblood, executive director at the National Organic Coalition, and thank you, NOSB members for all that you're doing. We really, really appreciate your service to the organic community.

First, we're pleased that the NOSB is

considering recommendations to improve oversight procedures for imports and we support the current NOSB recommendations on operations excluded from certification. They're a good starting point for addressing problems of fraud, not just with imports but also with domestically produced products and we think that it's critical that the NOSB consider ways to strengthen integrity for the entire systems, domestic and international.

With this in mind, we urge the NOSB to pay close attention to the oversight system for the NOPs accreditation process. We heard yesterday morning about the 2017 peer review audit and it's good that the NOP is undertaking this annual audit. This is something that's required by the organic law and regulations, but the current peer review process is falling short and a major problem is that the NOP has too much control over how the review is conducted. What we need is truly independent oversight using a risk base focus and review with assurance that the NOP will be held accountable to fix any

problems that are identified.

Second, on excluded methods, NOC supports listing agroinfiltration, cisgenesis and intragenesis as excluded methods but we strongly urge the NOSB to develop a definition for each of the terms to provide necessary clarity and we do not agree that cell fusion within a plant family is a form of cisgenesis.

Third, NOC urges the NOSB to support the crop subcommittee recommendation on container production as a compromised solution that allows container growing to continue when it's founded on the principle of feeding the soil, not the crop. It's important to note that highly soluble crop nutrients have been thought of as inappropriate for organic farming right from the start. This is discussed in the preamble to the NOP final rule.

Right now, some container production systems rely on excessive use of new and highly soluble sources of nutrients. The crop subcommittee proposal would place a restriction

that's consistent with the intent of the final rule and with how other highly soluble nutrients such as Chilean nitrate have been regulated.

And finally, I want to talk about inerts. The next step is the Memorandum of Understanding with the EPA and we urge the NOSB to work with the NOP to move this issue forward to clarify the NOSB recommendation from fall of 2015. Inerts make up the largest part of pesticide products and some are more toxic than active ingredients in pesticides. As an example, nonylphenol ethoxylate or NPEs and these should be removed as quickly as possible from use in organic agriculture.

MR. CHAPMAN: Thank you. Questions? Asa, briefly.

MR. BRADMAN: I'm going to keep asking the same question here but you suggested you agree with the current container proposal and the limits on liquid feeding and I understand the arguments for that. Should there also be similar limits on use of liquid fertilizers in the field

and how do we evaluate for example, there's many OMRI-approved fertilizers and some are, you know, processed from soy beans, some are fish, some are --

MS. YOUNGBLOOD: Yes.

MR. BRADMAN: -- you know, how do we -- and none of them of course are, you know --

MS. YOUNGBLOOD: Yes.

MR. BRADMAN: -- mineral level so --

MS. YOUNGBLOOD: Well, you know, we think that there already are limits on the use of these highly soluble nutrients and you know, we go back to the preamble of the final rule and looking at, you know, if you look at the original proposed rule and the comments that NOP got on that proposed rule and how the department responded to those comments, it makes clear the intent. The intent was to limit these highly soluble nutrients. So we go back to that and we think that the certifier should already be looking at the issue and restricting dependence of a farmer on highly soluble sources of

nutrients and really looking at Section 205.203 of the rule. Is it always happening? We know that we need to tighten that up.

MR. CHAPMAN: Thank you, Abby. We have to move on. Up next is Jeffrey Bogusz. Sorry, Jeff again and then Lauren Johnson. Jeff, you can start with your name and affiliation.

MR. BOGUSZ: So it's Jeff Bogusz with the Ferrara Candy Company. Pectin is essential to the manufacturer of the organic confectionary products that we make. The current is not an organic source of pectin so we're going to ask that you keep pectin on the national list.

Similarly, bentonite, diatomaceous earth, nitrogen and carbon dioxide could be used by the people who supply us our ingredients and we ask to keep a robust supply chain, you keep those items on the list as well.

I'm the handling side of the organic industry and I just want to take this opportunity to say thank you to every -- all the farmers.

I feel that we're to a certain degree,

organic by paperwork and it's all the farmers here that actually grow things. Thank you. And this is my third time at NOSB meeting and the tension is just so incredibly thick. It's amazing and so I've been thinking about why and so this is a model that I've seen used in terms of organizations and basically, it talks about the different steps, a pyramid from the group up to build an organization and how every step along the way needs to be congruent with every other.

So, you have the environment where things grow. You have the actions, how things are grown, capabilities, learning how to grow things. Then you get to beliefs. Healthy soil makes for healthy world. Things like that. In most arguments, they're usually at that belief level with one person's belief is different than another person's belief. But when it comes to organic, we really go up this chain.

Above that is identity and purpose. These are all so closely tied together with every different individual in this room. Everybody's

purpose is really tied to whether or not something's grown in the land or a container. I mean, it's not -- hopefully this provides a little bit more understanding as to why some of these issues can be so contentious.

Looking at it another way, if you look at the hydroponic issue. If you go to the identity level, an organic farmer has their identify based in growing things in the ground. Hydroponic growers have a different identity. It's in their name. If I look at the situation here with that regard, their purpose is relatively the same. However, at an identity level, there's the split so -- in my world, if you're going to find a compromise here, it's going to require two different labels, two different identities for the products to match the different identities for the growers.

Also, the question that came up yesterday was why are new farmers choosing not to get certified in organic and I think this model kind of shows two questions to ask. How does the

current national organic program differ from their purpose or differ from their identity? You need to go to that level and ask those sorts of questions.

Back to gummy bears. How are gummy bears making the earth a better place? I'm just going to add one thing here that -- maybe I won't. Okay.

MR. CHAPMAN: Thank you.

MR. BOGUSZ: All right, thanks.

MR. MORTENSEN: I just wanted to say thank you for the processed thought. I think that's very helpful. Thank you.

MR. CHAPMAN: Thank you very much. Up next, we have Lauren Johnson. Lauren Johnson followed by Dave Hiltz. If you notice, we've passed the 10:30 break time. We'll be working through our break. If members need to take a break, do it on your own as necessary. Lauren, if you could start with your name and affiliation.

MS. JOHNSON: Good morning. My name is

Lauren Johnson and I'm with the Organic Seed Alliance. We're a nonprofit that works nationally to ensure organic farmers have the seed they need through research, education and advocacy. My comments will touch on the crop subcommittee proposal, Strengthening Organic Seed Guidance.

The NOSBs ongoing attention to organic seed underscores the important rule that you as a Board, as well as the NOP and certification community, play in fostering organic seed systems. Developing these systems isn't just about helping certified growers meet a regulatory requirement. By investing in organic seed, we are diversifying a gene pool that gives organic farmers more tools to not only comply with, but to thrive with organic growing conditions.

We believe the crop subcommittee proposal is generally very strong. We support the proposed regulatory change coupled with stronger guidance for certifiers.

There are however, a few components of

the proposal that we'd like to see changed, essentially language edits that are described in our written comments before the NOSB votes. We request that the NOSB not pass this proposal as written and that the subcommittee continue work based on our written comments and those of others in this room with the hope that an updated proposal will be back on the agenda this spring for a vote.

As OSA shared at the spring meeting, we are developing a manual on organic seed for certifiers and inspectors with the goal of creating a resource that highlights best practices for enforcing the organic seed requirement. The end goal of such a resource is to support reasonable and measurable progress in organic seed usage. We have interviewed nearly a dozen certifiers to identify best practices for enforcement, hear their opinions of what continuous improvement looks like in the context of seed and gather ideas for addressing organic seed usage among the biggest producers.

One of the points of leverage we identified to increase organic seed usage pertains to large producers who contract their entire crop to a buyer. As OSAs data show, many of these large producers are growing under a contract or they might have a variety dictated by their buyer, typically a certified organic handler who is essentially exempt from any responsibility to choose varieties that are available organically or could be available organically with more communication and coordination.

Even though the NOP has indicated that it's up to certified producers to apply pressure to their buyers in the area of organic seed, we see it as necessary to find a way to directly place some responsibility on certified handlers that source seed directly for their growers or who dictate a specific variety be grown.

We encourage the Board to explore all tools available to them to close this loophole. Thank you.

MR. CHAPMAN: Briefly, Steve.

MR. ELA: This is brief. So you would prefer to see this go back to the subcommittee and have the language tweaked and then come back in the spring --

MS. JOHNSON: Yes.

MR. ELA: -- just to be clear?

MS. JOHNSON: Yes.

MR. CHAPMAN: Thank you. Up next is Dave Hiltz, followed by Julia Barton. Dave, you can start with your name and affiliation.

MR. HILTZ: Good morning and thanks to the Board and the NOP members for their service and the opportunity to comment here this morning.

My name is David Hiltz. I'm the director of Regulatory Affairs at Acadian Seaplants for one of the world's largest manufacturers of products derived for marine algae and we'd like to provide some comments this morning on the subject of marine materials.

Arcadian Seaplants appreciates and supports the ongoing efforts of the NOP and the

NOSB to clarify the regulatory language around marine materials. While we support the suggestion to identify products based on Latin naming, we also caution this may be a challenge. A number of psychologists who are experts in the field of marine taxonomy have commented that even they sometimes have difficulty in identifying closely related marine species. So it may be even more difficult for certifiers to complete a task like this in the field.

While we support the principle that sourcing and harvesting of marine materials must be conducted in a sustainable and ecologically sound manner, we continue to be deeply concerned about the comments that portray the industry in a negative light. In particular, there appears to be a misconception that the marine algae ascophyllum nodosum, which is often known as rockweed, is being widely over-harvested with little concern for the effects of the surrounding ecosystem.

Arcadian Seaplants would suggest that

the science and the facts surrounding this industry demonstrate that these statements are not accurate. Some comments suggest that the amount of ascophyllum on the shoreline is unknown and that makes harvesting plants arbitrary, but this is not accurate. Government and industry scientists use satellite photography coupled with infield measurements, which we call groundtruthing, to conservatively estimate the biomass.

In Maine for example, these estimates conservatively put the standing stalk of ascophyllum at approximately 500,000 tons spread over about 3500 miles of coastline. Now, the annual harvest of ascophyllum in Maine as reported by the Department of Marine Resources in 2016, was approximately 10,000 tons. This amount represents less than 2 percent of the standing stalk of these species.

If one compares that to the amount of conservative scientific estimates of 25 percent of the biomass being naturally removed by coastal

storms and winter ice scour, it becomes clear that the current rate of harvest for this species is actually quite low.

It is also suggested that there are no regulations in place to control and monitor the harvest of ascophyllum. Again, this is untrue. Shoreline is divided into sectors with biomass estimates. Harvesters are licensed, trained and have to adhere to harvesting -- I'm sorry -- and had to adhere to harvesting restrictions and methods and landings are monitored to ensure balance to these policies.

For those that are not aware, ascophyllum is actually harvested by cutting the top off the plant.

MR. CHAPMAN: Thank you. Emily, briefly.

MS. OAKLEY: Thank you for coming and for giving your comments. I was wondering if you would be open to applying the wild crop standard to your harvesting methods and what your thoughts on that are.

MR. HILTZ: We'd have to carefully study that Emily, but yes, I believe we can. In the brief overview of the wild harvesting policy, I believe that the current ascophyllum harvest actually adheres to those policies.

MR. CHAPMAN: Extremely briefly, Steve.

MR. ELA: It seemed like in the public comments and the written comments there was a fair amount of clarity on the main, I mean, you know, the whole main harvesting of rockweed and things but worldwide, it became much less clear about the sustainable harvest. Do you have any suggestions of how we approach that difficulty and, you know, one small area may be sustainable but worldwide, it may not.

MR. HILTZ: I can comment from the fact that Acadian Seaplants is based in Atlantic Canada, so I can tell you that the resource has been harvested successfully for a long time, 40-50 years in Atlantic Canada. We have a detailed system in place there that works between the

industry and government to ensure that a sustainable harvest occurs. In other areas of the world, again, there is the same type of philosophy. Our operations in Ireland are progressing in the same direction. Ascophyllum has been harvested extensively in Norway for many years. Again, with no evidence of environmental damage there so --

MR. CHAPMAN: Thank you.

MR. HILTZ: Thank you, Tom.

MR. CHAPMAN: Julia Barton is next, followed by Steve Walker.

MS. BARTON: Good morning. My name is Julia Barton. I'm with the Ohio Ecological Food and Farm Association. OEFFA is a grassroots coalition of more than 4800 farmers, researchers, teachers of other folks working to build a healthy and sustainable food system. Our certification program certifies over 1200 producers and handlers in about a 10-state region.

I'd like to comment on three items.

First, we respectfully ask that you work to add the topic of oil and gas industry infrastructure impacts on organic farms to the NOSB work agenda. In our written comments, we offered ideas for several specific ways we think the NOSB could support organic farmers by addressing these issues. We think first and foremost, it would be important to work towards getting it on the agenda and then we think creating a discussion document to unpack some of these issues would be of particular use to organic farmers.

Secondly, thank you for your work to create an open docket. We heard the conversation between Terry Shistar and Dave Mortensen this morning about how we might better offer support to the massive workload of the NOSB. We agree that the open docket has potential to work better if some of the meeting materials were to be made available ahead of the kind of package of meeting materials that comes out a few weeks before comments are due. In particular, we think discussion documents and questions that you have

-- specific questions that you have in need of feedback would be of particular use. That would enable us to reach out to our farmers, our producers, get their feedback, look for answers for those specific questions for you and to engage in robust dialogue with our colleagues, which helps us inform our own opinions and parse out some of the challenging issues that we can then provide back to you in the form of written and oral comments. We do our best work when we have plenty of time to do it and we imagine that you might also experience that similarly.

Finally, organic production systems must promote ecological balance and conserve biodiversity as recognized by the creators of OEFFA and clearly stated in the organic rule. OEFFA believes the complex relationships in the soil, along with diverse populations of soil organisms are the foundation of organic farming.

In the absence of clear applicable standards, OEFFA has not certified hydroponic, aeroponic, or aquaponic operations to date. We

appreciate the ongoing work of the crop subcommittee and its compromise proposal. Oxford Dictionary defines compromise as follows: One, to settle -- it's a verb. It's an action. That's important and I'll stop there.

MR. CHAPMAN: Harriet, Scott stop there.

MS. BEHAR: Can you complete your definition of compromise?

MS. BARTON: Yes, I'd be happy to. Thank you, Harriet. One, to settle a dispute by mutual concession. Two, to accept standards that are lower than is desirable. And if I may add OEFFA supports the crop subcommittee compromise. Thank you.

MR. CHAPMAN: Scott?

MR. RICE: Hi Julia.

MS. BARTON: Hi Scott.

MR. RICE: I just wanted to offer that the CACS continues to have the discussion around fracking and water issues in general and where that fits in and appreciate the comments that you

submitted and we're kind of fine tuning how we want to request that be added to our work agenda and how we might move forward on that issue so, thank you.

MS. BARTON: Thank you, we appreciate your consideration.

MR. CHAPMAN: Thank you, we're going to have to move on now. Up next is Stephen -- I'm sorry, we have to move on. Up next is Stephen Walker, followed by Christie Badger. Stephen, you can start with your name and affiliation.

MR. WALKER: Okay, good morning. I'm Steve Walker, Operations Manager at MOSA. We certify about 2000 operations across the U.S. We submitted half a dozen written comments on agenda items for this meeting and in this three minutes, I want to address the proposal on native ecosystems.

We support the concept of a rule change to require a waiting period before a native ecosystem site could be used for organic

production and we appreciate changes made in response to the spring comment period but we ask for further development of the current proposal. We'd also like to see additional emphasis on incentives to complement the 10-year waiting period disincentive.

The proposed regulatory change is pretty simple. It seems fairly practical to verify and creates a disincentive without categorically preventing organics regenerative capability in unfortunate cases where native ecosystem land has already been taken for agricultural use. However, we need a native ecosystem definition and we think such a definition should assess the land's current ecological value, which is not necessarily related to the land's historical use.

We do have some unresolved concerns about suggested verification tools such as satellite images, old photographs or assessment of FSA records. We're unsure of the availability of such information. Accessibility of resources

and training will be necessary for consistent enforcement. Such review tools are not currently in our certifier toolbox. We'd like clarification whether such historical verification would always be expected or only when we have indicators of recent ecosystem destruction. And I'd say our toolbox needs both sticks and carrots; enforcement needs a positive counterpart.

Though probably outside of the scope of this proposal, we strongly encourage economic incentives for transitioning conventional acreage to organic. Our values call us not only to prevent loss of important habitats but also to encourage more organic production, especially as a conventional agriculture replacement. And there's need for right vision. Unfortunately, the relative scarcity of native ecosystems doesn't translate to how most folks usually see economic value.

Yesterday in the context of considering regeneration and resource depletion,

I was pleased to hear a couple of references to Aldo Leopold. In the forward to A Sand County Almanac, he wrote, we abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.

Organic farmers may have better eyes to see the value of biodiversity and cooperation with Gaia. Education even through enforcement can expand that global vision for the benefit of us all. Thanks.

MR. CHAPMAN: Thank you. Emily.

MS. OAKLEY: Thank you for your comments and I just wanted to suggest that you look at the open docket for the comments by NatureServe because they did provide some additional tools for referencing back historically and I also just wanted to point out that the length of time through which this proposal might get eventually passed and then go through rule making is probably pretty long --

MR. WALKER: Yes.

MS. OAKLEY: -- so I think we can anticipate that should this get passed at some point and eventually become a rule, we will have even greater historical knowledge and satellite images from which to work. But I also really appreciate your comment that does this work need to happen on every single certification application or only ones in which there is a question of applicability, so thank you.

MR. WALKER: Yes, I kind of imagine that's something certifiers can work out within ourselves as far as best practices and so forth and I'm not criticizing the tools. I'm just saying that, you know, right now it's not something we're used to. We can get there.

MR. CHAPMAN: Thank you, Stephen. Up next we have -- sorry Asa, we don't have time. Up next, we have Christie Badger, followed by Suzanne McMillan. Christie, you ---

MS. BADGER: Good morning.

MR. CHAPMAN: -- can start with your name and affiliation.

MS. BADGER: Yes. Good morning, my name is Christie Badger and I'm speaking today on behalf of the National Organic Coalition. Thank you for the opportunity to address the Board and thank each of you for the important, torturous and time consuming work that you do as volunteers on the NOSB.

Sanitizers: NOC appreciates the consideration for adding a comprehensive review of sanitizers, disinfectants and cleaners to the work agenda and we are strongly in support of this important work being added to the work agenda. NOC urges review of all subcommittees --- across all subcommittees to help identify areas where there are gaps in necessary sanitizers or disinfectants, which aid crops, livestock and/or handling operations, and promotion of organic food safety. As noted in our written comments, this would benefit not only the NOSB, but also the organic stakeholders.

Organic economic development opportunities: NOC would like to encourage the

NOSB to add the topic of organic economic development opportunities to its work agenda. Often tough issues could be addressed if some enterprising person or persons were to capitalize on a gap or opportunity in organic production or handling. This would allow entrepreneurs to look to the NOSB for opportunities when proposing ideas to investors, helping to inform the industry of opportunities for growth in the organic sector.

Oxytocin: NOC strongly supports the subcommittee's recommendation to remove oxytocin from the National List. Oxytocin is a protein hormone, not only in -- not a body building steroid hormone. It occurs in all mammals, both male and female; however, there is confusion and the word hormone is misunderstood by consumers and as such, leaves organic dairy producers open to claims that hormones are allowed for use. It is not an essential material for organic production.

As an independent organic inspector

performing more than 200 inspections yearly, many of them dairy operations, I ask farmers if they need oxytocin. More than 90 percent of them tell me no, with others telling me that they don't need it but they like having it in their toolbox. I have never once had an organic dairy farmer tell me that they could not remain in production without oxytocin.

Clarifying emergency for the use of synthetic parasiticides, and organic livestock production, we urge it to go back to subcommittee. We understand the hesitancy to define the term emergency, but this confusion could be eliminated by defining the term emergency use for parasiticides.

MR. CHAPMAN: Thank you. Questions? Thank you, Christie.

MS. BADGER: Thanks.

MR. CHAPMAN: Up next, we have Suzanne McMillan, followed by Colehour Bondera. You can start with your name and affiliation.

MS. MCMILLAN: Hello, Suzanne

McMillan, content director, Farm Animal Welfare Campaign with the ASPCA, which is the American Society for the Prevention of Cruelty to Animals.

I'm glad to be here today on behalf of our 6.5 million supporters nationwide. We thank the NOSB for helping to get the Organic Livestock and Poultry Practices Rule finalized with USDA. We remain committed to seeing it implemented as we approach its third implementation date, now set for November 14th. However, given the repeated delays, we no longer feel that we can afford to await implementation before continuing to develop further animal welfare recommendations for the Organic Program.

USDA declined in its final rule to take up a number of outstanding animal welfare issues, at times citing the need for, or at minimum receptivity to, NOSB recommendations. Examples include poultry genetics with respect to breeds, growth rates or suitability to outdoor access, swine outdoor areas, mammalian ammonia rate caps and space allowances for species other

than chickens, in particular they called out turkeys and swine outdoors.

To this end, we're grateful for NOSB's proposed research priority of organic livestock breeding. This is critical given the organic regulations requirement of, quote, selection of species and types of livestock with regard to suitability for site-specific conditions and resistance to prevalent diseases and parasites, unquote. However, even beyond outdoor settings, genetics are critical because conventional breeds and strains face severe challenges even in basic indoor settings. They simply are not made for basic survival and thriving.

Similarly and related is the research priority proposal of methionine in the context of a system approach in organic poultry production. This topic is closely tied to both poultry genetics and poultry living conditions, each of which in turn informs other aspects of welfare, hence very much a systems approach, which it sounds like you're preparing to take and we

encourage and would say is in fact essential for all questions of welfare.

I thank the NOSB for addressing these two critical topics of poultry genetics and methionine and I hope you will consider the additional topics I've mentioned as well. As always, the ASPCA looks forward to working with you to provide any input or support that may be needed. Thank you.

MS. SWAFFAR: Thank you, Suzanne. Emily.

MS. OAKLEY: I was wondering if you had any concerns about animal welfare issues in the sulfur petition in livestock and the fact that it's a known skin and eye irritant and that it would be applied topically to the animals. Are you concerned about that in any way?

MS. MCMILLAN: You know, we haven't dealt with that issue. We haven't addressed that. We don't have a position on that. It's something I would be happy to bring back to some of our scientists and see if they can formulate a

position for us. So, it's nothing I can comment on right now.

MS. SWAFFAR: Thank you. Steve.

MR. ELA: I'd be curious about your organization's position on cruelty to animals if Tom keeps us through lunch.

MS. MCMILLAN: I didn't hear all of that. Okay.

MS. SWAFFAR: I have one for you. Suzanne, thank you so much for your commitment to seeing forward OLPP and I think that's one thing that was really left out of the Program update yesterday. So I'd like to ask the Program if you have an update on OLPP?

DR. TUCKER: OLPP continues to be under review by the administration.

MS. MCMILLAN: Thank you. All right, thank you.

MR. CHAPMAN: Thank you. Up next is Colehour Bondera, followed by Robert Rankin. To respond to Steve's questions, I don't know how many questions animals ask, so that might be

somewhat related to whether or not they get fed. Colehour.

MR. BONDERA: Aloha ---

MR. CHAPMAN: If you could state your name and affiliation.

MR. BONDERA: Colehour Bondera, I'm here from a diversified Kanalani Ohana Farm in Hawaii. My thanks to Beyond Pesticides for allowing me to be here as well.

I'll let you all know that I grew up with 10 siblings on a farm in Oregon. We weren't wealthy but my family knew that if we had to do it, that a watered down soup isn't poisonous but it also isn't as tasty or healthy, so please do not water down the standards of organics.

Let me share some thoughts about organics. They may include temporary variances but at the end of the day, your role is to guarantee the integrity of organics.

As Lisa Brines noted to us, the livestock subcommittee will be considering a petition for OAD, oxalic acid dihydrate to help

control varroa mite in bee hives. Remember that in Hawaii, bees do not have the same kind of downtime as some bees do in temperate areas. Please urgently consider approval of this material.

Also, I really want you to seriously consider any requests that you receive for a boric acid formulation to help with little fire ants. Hawaii is facing a little fire ant an emergency in the coffee crop and at this time, there is no certified organic control.

Regarding hydroponics, let me first thank Francis Thicke for his service on the NOSB. He and I overlapped, with my service ending in January 2016. Really thank you, Francis, for your support in guiding us through hydroponics.

Here are some hydroponic thoughts that come to you via me, via Sam Welsch of OneCert who served on the hydro task force and they include the following. In 1995 NOSB said, quote unquote, hydroponic production in soil-less media to be labeled organically produced shall be allowed if

all provisions of the OFPA have been met. Since it is impossible to regulate hydroponic production, which compiles with the OFPA requirement of management -- for management of soil content in the soil, it can't be certified.

Next, remember no certified hydroponic operations existed before 2005 when NOP decided that hydroponics could be certified. Prior it was clear that OFPA and USDA organic regulations required soil. After the NOP statement, certifiers began ignoring those requirements in order to certify hydroponic operations.

In reference to a letter from USDA, Richard Matthews in 2005, we all should still be awaiting the rule requirements for improving or maintaining soil organic matter content for hydroponic operations. Remember that soil is the soul of organic and really overall, NOSB must work with NOP to ensure enforcement of standards as advised. Mahalo.

MR. CHAPMAN: Questions? Colehour, I want to ask you about that statement you just

read. If it was so clear that it was not going to be allowed, why would they put that in there in the first place? I don't see any similar statements around irradiation or not, you know, GMO organisms. Why even put that in there? Why create the possibility of confusion?

MR. BONDERA: I think -- my read of that would be leave the door open as a possibility if somebody -- to make sure that the if part, what, you know, if it could be addressed but it hasn't been so I think why would you include that? Because it hadn't been thought about or discussed or analyzed enough by anybody and so the argument must have been between the people involved, you know, maybe, if, let's talk about it. But since it doesn't, I don't think that there's any further discussion at this time unless someone could --

MR. CHAPMAN: Thank you and I --

MR. BONDERA: -- explain that.

MR. CHAPMAN: -- just want to point out that in the crops proposal, there is a quote

from 2002 from the National Organic Program, taken from the transcripts of an NOSB meeting stating that the --- quote unquote, from the program manager, Matthews, the policy statement that is on the web in regards to the scope of the National Organic Standards includes hydroponics, so it goes as far back as 2002.

MR. BONDERA: To be --

MR. CHAPMAN: That the Program was saying --

MR. BONDERA: -- considered, right.

MR. CHAPMAN: -- it was included.

MR. BONDERA: Right.

MR. CHAPMAN: Yes.

MR. BONDERA: As a --

MR. CHAPMAN: You had stated 2005. I'm just saying it went back as far as 2002.

MR. BONDERA: All right, thank you.

MR. CHAPMAN: Thank you.

MR. BONDERA: You're welcome.

MR. CHAPMAN: Up next is Robert Rankin, followed by Lori Klope. Sorry, Lori.

MR. RANKIN: Hi, Robert Rankin --

MR. CHAPMAN: Robert, --

MR. RANKIN: -- executive director of International Food Additives Council. IFAC is a global association representing manufacturers of food ingredients including food additives permitted for use in organic products.

IFAC strongly supports the Handling Subcommittee's unanimous vote to re-list sodium phosphate. Phosphates have a long history of safe use in food and their safety is supported by global regulatory authorities. Sodium phosphates are essential in the production of certain organic dairy products, particularly shelf stable cheese powders and cheese sauces.

We would like to reiterate some of our previous comments regarding the NOSB discussion document on phosphates published last April. First, it has been suggested phosphates interfere with the absorption of calcium. This is not a true statement. The scientific literature actually shows that phosphorus aides in the

absorption of calcium.

Another point we'd like to make is the reference to the 2001 TAP report and health impacts related to the use of phosphates as bowel purgatives and cleansers. The discussion document omits an important statement that these affects are not directly relevant to food as they are administered differently than consuming phosphates through food. This point is critical and should be considered by the NOSB.

Thirdly, the discussion document incorrectly suggests consumers are not aware they are consuming phosphates because phosphorus does not appear on the nutrition facts panel. Sodium phosphates, like all phosphates, are required to be included in the ingredient list whenever they are used in a food.

Finally, the discussion documents suggest there are alternatives to sodium phosphates in Europe. The U.S. and European organic markets are very different in part due to consumer preferences. Alternatives to sodium

phosphate do not perform the same function and their use results in an inferior product compared to those that contain sodium phosphates.

We would like to reiterate some past comments as well on the technical report on phosphates. First of all, phosphates do not increase serum phosphorus more so than natural occurring phosphorus. We also object to the claim that the elevated serum phosphorus contributes to the development of renal and vascular disease in the general population. The existing literature focuses on specific health-compromised patient populations and cannot be applied to the majority of consumers.

As we noted previously, we sponsored an expert scientific evaluation, independent, I should say, of the peer-reviewed literature regarding food phosphates. The report found no definitive conclusion between the consumption of phosphates and negative health impacts in the general population. This was published in September in Comprehensive Reviews in Food

Science and Food Safety and the report reviewed over 110 primary research articles as opposed to the TR, which looked at about 30.

We'd also like to support the Handling Subcommittee's vote to re-list non-amidated pectin. This is used to thicken and gel organic products, particularly with jams and jellies, as well as fruit fillings commonly found in bakery products. In many of these applications, no alternative exists and organic pectin is not available in the quantity needed to supply the market.

We also finally support the re-listing of konjac flour. This has numerous functions and it's used in a variety of products.

In conclusion, we support the proposals to retain -- or the votes to re-list sodium phosphates and non-amidated pectin. We also support the re-listing of konjac flour. Thank you.

MR. CHAPMAN: Thank you. Emily, Harriet, Scott and Joelle briefly please. Emily.

MS. OAKLEY: Thank you for your comments. You mentioned that sodium phosphate is not used in Europe or allowed and that the consumer preferences between the United States and Europe are different. Would you say that's attributable to a greater preference for processed foods in the United States?

MR. RANKIN: Essentially. The products in which sodium phosphate is used in organic cheese-type products like macaroni and cheese and things, those aren't commonly consumed in Europe in the market. The consumers when they consume their cheese, it's usually through the, you know, cheese itself versus, you know, processed products that use a cheese.

MS. SWAFFAR: Harriet.

MS. BEHAR: Sodium citrate is also -- can be used in cheese powders. Can you speak to why you need the sodium phosphate instead of sodium citrate?

MR. RANKIN: Sure and there will be commenters addressing that more specifically than

I, but yes it is. It is -- it can be used. It does not perform the same function as sodium phosphate. It doesn't result in some of the same properties that sodium phosphate presents in those products like organic macaroni and cheese and such. There's a buffering capacity to achieve a -- you know, when working with certain pH levels in foods. Sodium phosphate has a better result than sodium citrate there in terms of emulsification.

Sodium phosphate performs better than sodium citrate. When you use sodium citrate or use a combination of the two, you actually have to use more of the material to achieve the same functions. Sodium phosphate you can use a lower level than when you combine with sodium citrate and then it just also provides the expectation consumers want in terms of the consistency, the texture of the product. Sodium phosphate gives that creamier texture. Sodium citrate, not so much. It's not as creamy and it also can result in some off flavors that consumers would maybe

not prefer as much as sodium phosphate allows.

MR. RICE: I had a question on konjac flour. At our spring meeting, we asked if you could forward us some specific products that are currently certified organic and use konjac flour and I didn't see any of that info submitted so just looking for any products that are out there that are currently certified and employing that.

MR. RANKIN: Right, we looked for that and we made some inquiries and we weren't able to get any information for this meeting so I'm not aware of that.

MR. RICE: Okay, thank you.

MR. CHAPMAN: Joelle.

MS. MOSSO: Just a quick question in regards to the concentration of sodium phosphates often used in the annotation with the dairy products.

MR. RANKIN: Okay, what was the question?

MS. MOSSO: Concentration of sodium phosphates in a finished application.

MR. RANKIN: It's very small. There is someone commenting after me who can answer that more specifically. She's a food scientist. I don't know the exact levels. Sorry.

MR. CHAPMAN: Thank you. I have one question too. You had a note in there saying that if sodium phosphates were used in a food, it would appear on the ingredient panel but we received a written comment from a food manufacturer who says one of their processors uses it to prevent fouling of cream lines in a dairy processing plant and that's considered a processing aid and not required to be labeled. So, who is right?

MR. RANKIN: Processing aids don't need to be labeled. Processing aids are not expected to provide any presence in the final product, so I would say if it's added as an ingredient in this type of a function for the cheese, you know, powdered cheese sauce, it would be listed and we also found a list of other products -- organic products, mostly macaroni and

cheese type products but also protein dairy shakes. They all list sodium phosphate on the ingredient list. I can't speak to that specific question about the processing. International Dairy Foods Association may be speaking and could speak to that.

MR. CHAPMAN: Processing aids don't -- are removed from the final product or don't have a technical affect in the final product?

MR. RANKIN: It's expected they are not really present in the final product. They are just used to kind of help make the product and by the time you get to the final product, it's not there in any measurable or you know, notable levels.

MR. CHAPMAN: Thank you. Thank you. Up next we have Lori, followed by Ron Mitchell.

MR. KLOPF: Good morning. My name is Lori Klopf and I work for ICL Food Specialties, a food ingredient company in St. Louis. I'm here to support the continued listing of sodium phosphates on the National List.

Our company is a member of the International Food Additives Council and we have submitted our written comments to the NOSB through this association.

Sodium phosphates have been on the National List for a limited use in dairy foods for many years. They are safe in human foods and have an essential functionality in certain types of organic dairy foods. Today I will address some of the reasons why sodium phosphates are required for these food applications.

The category of sodium phosphates on the National List includes three food additives: monosodium, disodium and trisodium phosphate. One of the dairy food applications that may include sodium phosphates are those with a cheese sauce or powder such as macaroni and cheese and cheese dips. Dairy-based protein shakes and beverages have also become popular items for the organic consumer. These food products require sodium phosphates to provide a smooth and creamy mouthfeel. This is accomplished through pH

buffering and also emulsification of the natural protein, fat and water in the dairy products.

In organic foods -- dairy foods, sodium phosphates are usually selected as the best choice for emulsifying salt due to superior buffering and emulsifying capacity, texture and taste.

The buffering system in dairy foods is typically a neutral pH. In this graph, the ability of sodium phosphate to buffer is compared with sodium citrate, another emulsifier. In the neutral pH range shown in the green box on the graph, it is apparent that sodium phosphate, the black line, is much more effective than sodium citrate; therefore, a lower level of sodium phosphate can be used to achieve the required pH.

Similarly, the ability of sodium phosphates to provide emulsification to dairy foods is much better than with sodium citrate. While some food formulators will use a phosphate citrate blend, the overall amount required is higher, which increases both the number of

ingredients and the cost of the product. In cases where only sodium citrate is used, it has been found that calcium citrate crystals may also form in the cheese products due to the higher level of sodium citrate needed for this functionality.

Both the texture and the flavor of dairy products will also be affected by the choice of an emulsifying salt. The texture of cheese has been shown to be better when only sodium phosphates are used. In addition, sodium citrates based on citric acid can contribute to sour flavor to finished foods while the sodium phosphates do not affect the taste.

In summary, sodium phosphates have been determined to be safe for human consumption by the U.S. and by international food regulatory agencies. Sodium phosphates are essential for use in dairy foods. They provide the required texture, stability and taste to these organic foods and there are not other suitable alternatives that provide the same properties.

Thank you.

MR. CHAPMAN: Thank you. Questions? Lisa.

MS. DE LIMA: Hi. Do you know if a combination of organic corn starch and organic maltodextrin would have a similar effect, because I see some products on the market when it comes to macaroni and cheese that use that combination and don't have sodium phosphates.

MS. KLOPF: No, they would not have the same. They are not emulsifiers, so they would not have the same effect. In a dairy product, you need an emulsifier to take the protein, fat and water in the dairy product and basically turn that into one phase. That's what emulsification is, so the starches will not do that.

MS. DE LIMA: So could the emulsifier be a non-animal enzyme that's providing the same function? I'm trying to figure out what else in this other -- this product that doesn't have the phosphate, how they're getting a --

MS. KLOPF: And what we've found too -- we've looked at some of those and when we've actually made those products, like the boxed macaroni and cheese mixes, you do not have a cheese sauce that is creamy and smooth like you would in what you'd anticipate or expect to find in a normal macaroni and cheese product.

MS. DE LIMA: Okay.

MR. CHAPMAN: Joelle.

MS. MOSSO: Same question. Can you give any indication to the concentration level of sodium phosphates?

MS. KLOPF: It can vary, but sodium phosphates are very effective pH buffers and emulsifiers, as I showed on the graph, so really very low levels are affective. Approximately half percent or less is typically used to achieve that effect.

MR. CHAPMAN: Thank you. Up next is Ron Mitchell, followed by Anja Anderson.

MR. MITCHELL: Hello. Thank you for having me. My name is Ron Mitchell. I'm the

owner-operator of Local Greens Farm in Berkeley, California, a family owned urban vertical indoor farm. We grow sprouts, microgreens, lettuce and basil year around for retail markets in Northern California. I have been growing organic hydroponic vegetables for over 47 years.

The advantage of our sustainable system: All incoming air and water is filtered so we have no insects. We use no pesticides, herbicides, fungicides or any cides at all. Our recirculating system uses two percent of the water used by an average farm. We compost all of our plant waste. Our carbon foot print is very small and we are working towards zero in the near future.

Here is how we do this. I grow all our plants on HDPE plastic trays from germination to seven to ten days old using only filtered water. I then cut them right above the roots and package them and sell them as microgreens. I sell about 8,000 pounds of these per month. I take all the roots and seeds and waste, about

14,000 pounds per month, and compost it. I give 80 percent of the raw compost to organic farmers and gardeners to use on their land such as UC Berkeley, which is right next door. The remaining 20 percent get fed to my army of worms that turn it into vermicompost.

I then use this vermicompost to make my tea -- my vermicompost tea. This tea is used to feed my larger plants I grow, like basil and lettuce. The roots of these plants are alive with bacteria and fungi. I know this because I see them in my microscope. We grow this way not to out-compete but to get more organic vegetables on the table year-round and to help save the planet.

MR. CHAPMAN: Thank you. Questions for Ron? Steve.

MR. ELA: So how would you characterize your crop rotation then? I mean, you're composting material, but where's the rotation and where are your nutrient sources other than the vermicompost?

MR. MITCHELL: Well, the rotation, it happens all the time, every 10 days. I mean, we change product on the trays and that also changes the compost. And what was the other question?

MR. ELA: The source of -- do you use other nutrition other than vermicompost for the tea you mentioned.

MR. MITCHELL: Yes. That is proprietary but we do use OMRI-certified components. For instance, we use kelp that's, you know -- I mean it's really useful for a lot of different things.

MS. OAKLEY: Sorry to interrupt. What was it that you just said? I didn't hear that. You use what? I didn't hear that.

MR. MITCHELL: Oh, kelp.

MS. OAKLEY: Kelp. Thank you.

MR. MITCHELL: Yes, among other things.

MR. CHAPMAN: Thank you. Harriet.

MR. MITCHELL: Also I would like to make a comment about the use of nitrogen. In my

work, I find that most people use way too much nitrogen in the soil or anywhere just because they don't know the levels.

MR. CHAPMAN: Thank you. Harriet.

MS. BEHAR: Can you tell me about the artificial light? Is it full spectrum, how many hours?

MR. MITCHELL: Yes. It's different for each type of plant, and I've been doing this work for over 15 years, working with lighting, and we use LED lighting that has been worked through the universities to the right spectrum for each plant, and we also give them about six hours of what most people think of as rest but is actually when the plant really grows, using the energy it gets from the light.

MR. CHAPMAN: Thank you. We have to move on. Sorry Asa. We have to keep going. Sorry. Thank you very much.

MR. MITCHELL: Thanks for having me.

MR. CHAPMAN: Yes. Up next is Anja, followed by Jessica Knutzon. Sorry. Anja, you

can start with your name and affiliation for the record.

MS. ANDERSON: My name is Anja Anderson, and I'm here to represent IPPA, the International Pectin Producers Association, and I'm here to provide comments to the Board on pectin.

So IPPA is a global association of independent companies who produce pectin. Total pectin production from IPPA members represent more than 95 percent of the commercially available volume. And IPPA supports retaining of non-amidated pectin on the National List.

Pectin is naturally present in plants; however, from a commercial side, pectin containing raw materials of interest include peel from lemon, lime and oranges, and also apple pomace. Commercial pectin is obtained by extraction from selected raw materials. The raw materials are by-products from industrial juice and citrus oil production. So by-products are converted into high specialty ingredients that

can be used in the food industry. Specific desirable functional properties of the pectin are controlled through selection of raw materials and by observing certain extraction and processing conditions.

Currently, no IPPA member produces certified organic pectin, and to the best of our knowledge, certified organic pectin is not available. Also, organic raw materials are not available in the quality or quantity to support sustainable production of organic pectin.

It is our understanding that this market situation is not likely to change for several years, and as such, we recommend retaining a non-amidated pectin on the National List. Thank you.

MR. CHAPMAN: Harriet.

MS. BEHAR: Is there any task force or anything in your association to overcome some of these barriers to producing organic pectin?

MS. ANDERSON: We're working with suppliers, and we need raw materials from both

lime and citrus and oranges currently, and what our raw material suppliers inform us is that the lime and lemons -- organically produced or grown limes and lemons are mainly sold to fresh produce so they're not even -- and we use the by-products from juice production, so the raw materials are not available for us. We don't have a task force per se but we monitor the market situation.

MR. CHAPMAN: Thank you. Up next is Jessica Knutzon, followed by Wanda Jurlina. Jessica, you can start with your name and affiliation.

MS. KNUTZON: I have a presentation but I'll just start talking. I am Jessica Knutzon and I am a marketing manager at CP Kelco, a hydrocolloid manufacturer.

Pectin occurs naturally and provides structure in many fruits and vegetables. Pectin as an ingredient is a polysaccharide, typically extracted from citrus, apple and sugar beet. Pectin can provide gelation, viscosity, protein protection or emulsification. It has many unique

properties, one of which is its great acid stability, which is key to many fruit-based products like juices and preserves.

As a marketer, I cannot forget to mention consumers. Consumers are familiar with pectin. It's an ingredient that their families use to make jam, and it's recognizable and easy to understand as a product.

There are three main types of pectin used as an ingredient. There is high ester, low ester conventional and low ester amidated pectin. My colleague, Wanda, who will be commenting right after me will present more details on low ester pectin and I will review high ester pectin with you today.

As mentioned before, pectin can provide gelation, which is why products like jam and jelly gel. Pectins gel under very specific conditions. The pH level needs to be quite low, typically less than 3.5. Brix, which is the soluble solids of a product or dissolved sugar, needs to be pretty high as well, so there needs

to be relatively high sugar system to make the pectin gel. Without the high sugar content and the low pH level, there won't be a gel with high ester pectin. Without these two conditions, you will get viscosity or protein protection.

Here are some of the products that use gelation and use pectin to create them. So jams, jellies, marmalades, bake stable, bakery fillings and gelatin-free confectionary products.

Products that don't meet the requirements for gelation benefit from high ester pectin in different ways. High ester pectin provides products like fruit juices, fruit beverages and low sugar drinks with viscosity and mouthfeel.

High ester pectin also provides protein protection in milk beverages, fruit beverages, protein fortified fruit drinks and smoothies. High ester pectin plays an important role in food manufacturing across a variety of applications. Wanda Jurlina will now present information on low ester pectins for you.

MR. CHAPMAN: Thank you. Thank you very much.

Up next is Wanda, followed by Lee Frankel. Wanda, you can start with your name and affiliation.

MS. JURLINA: Here we go. All right, my name is Wanda Jurlina. I am the manager of technical services for CP Kelco. We are a hydrocolloid producer and in the product range that we produce includes pectin -- a wide variety of different pectin ingredients.

So with that, Jessica has introduced you to the range of pectin products that are on the market to meet the different needs of the producers of a variety of different types of products. I'm going to focus on low ester conventional pectins, in addition to the high ester pectins. Those are the ones that are approved for use in organic products.

Amidated products, as you all know, were voted to be removed from the list and are not currently used in organic products. From our

perspective, it's very easy to tell which pectins are amidated, and I can say for Anja's company as well, all of the names of those pectins that are amidated have a designation in the name that indicate that it's amidated and they will say on their product data sheets that they're amidated. So they are very well identified for the market to understand which pectins they can use in organic products.

Jessica gave you the basics on where high ester pectins gel. The cool thing about low methoxyl pectins is that they gel in a variety of different situations. They're much more flexible on the pH than the solids levels that they function at, so it gives product developers that aren't working at very high solids and very low pH an option to create a gel texture.

So those types of products that we see within the organic product families, where low methoxyl pectins are typically used, include products like yogurt fruit preps. So think of the fruit that's on the bottom of an organic

yogurt cup or is blended with yogurt white mass to produce a stirred product. Pectin is used extensively in those types of products to actually thicken the product, keep it uniform in the 1,000-kilo tote that it's packaged in, as well as holding onto liquid in those systems so that they don't get a lot of separation in that huge container.

It's also used extensively in yogurt white mass where people are looking for a non-gelatin or a non-starch based thickener to use in those particular products. High ester pectins don't give body and texture in those types of systems, so they're not routinely used in that application.

The last area is fruit spreads. Fruit spreads give manufacturers an option to deliver a product with less sugar than the traditional jams and marmalades. So there's a range of those types of products on the market as well.

I've also included two other slides that I shared during the April meeting reminding

the team -- the NOSB, the differences between pectin and the competition as far as the properties.

MR. CHAPMAN: Thank you. Emily.

MS. OAKLEY: I'm sure you're aware from previous comments of the desire to have an organic pectin.

MS. JURLINA: Yes.

MS. OAKLEY: Could you elaborate on that and tell me what that limitation is?

MS. JURLINA: I can't -- I actually would have loved to be the that presented that for you. We have a great slide that we use. It's called the lemon's tale. It talks about what goes into producing organic pectin. The first thing is, is you have to have an organic peel source in a place where you have a drying operation that basically within 24 hours of juicing the fruit and pressing it for oil, that you have it sufficiently dried so that it can be transported to manufacturing locations.

Setting up drying operations is

extremely expensive and when you're looking at a highly fragmented industry, like an organic processor, it's extremely difficult to put the commercial resources into drying the peel where it's available so that you have enough organic peel to actually produce an organic pectin. So sourcing the raw material truly is the biggest concern for our industry to provide a certified organic product.

MR. CHAPMAN: Steve.

MR. ELA: Do you see any potential for organic options for the equivalent of an amidated pectin that works under the conditions you've described? I mean there are a number of organic fruit spreads. I mean we make an organic jam that has to be labeled "made with organic" because of the amidated pectin. Are there any things on the horizon to replace that?

MS. JURLINA: So if I look at the differences between an LMA pectin and an LMC pectin, an LMA pectin gives you a relatively firm and cuttable texture very similar to a high ester

pectin in a high solid system. The low methoxyl conventional pectins tend to have a softer structure and a more spoonable type of texture that they create. That's just inherent to the properties of the basic pectin.

We've made strides in improving the LMC pectins and we actually have a new family of LMC pectins that does take the organic processor closer to an LMA pectin but I don't see the industry duplicating the properties of an LMA pectin without amidation.

MR. CHAPMAN: Thank you, Harriet, and then we'll have to stop there.

MS. BEHAR: So I make pectin at home, and I use the low methoxyl pectin, and I just add in some more calcium, and that seems to give it a very firm texture but --

MS. JURLINA: Right.

MS. BEHAR: -- so I don't know why other people couldn't do that but the main question I want to --

MS. JURLINA: The industry does do

that.

MS. BEHAR: Oh, they do add in extra to have that stiffer?

MS. JURLINA: Yes.

MS. BEHAR: I don't know anybody that's gotten my jam in the audience but -- where is most of the pectin in the -- you know, that you're using, currently made? Is it made domestically? I'm just trying to figure out --

MS. JURLINA: Okay.

MS. BEHAR: -- because you're saying that it's kind of an infrastructure issue, so I'm trying to figure out --

MS. JURLINA: Okay. All right.

MS. BEHAR: -- why that's a problem.

MS. JURLINA: So if you want to start all the way back to where the peel comes from, a lot of the peel -- well, you have to have both parts, so the peel is produced in Latin America. We have some peel coming from small pockets of Europe. There's peel coming from areas in China.

The pectin is currently produced in

Europe. There's plants in Mexico. There's plants in Brazil. We're starting to see producers in China making pectin. So it's a very diverse industry in the locations. There are no domestic producers of pectin --

MR. CHAPMAN: Thank you.

MS. JURLINA: -- or pectin plants.

MR. CHAPMAN: Thank you very much. Up next we have Lee Frankel, followed by Emily Lyons. Lee, you can start with your name and affiliation.

MR. FRANKEL: Sure, thank you. My name is Lee Frankel, and I'm here on behalf of the members of the Coalition for Sustainable Organics.

First of all, thank you for your time that you devote to help maintain and strengthen the organic brand and the organic program. I really appreciate your dedication. Nonetheless, the CSO does not support the four proposals of the Crop Subcommittee. I carefully read the justifications given by the Crop Subcommittee for

the need for the prescribed 50/20 formula to create the dividing line between accepted and prohibited organic production methods. I found the essential stated reason for the 50/20 formula was to create the most soil-like biology possible in a container to meet the minimum expectations of the Crop Subcommittee.

The Crop Subcommittee specifically references Dr. Martine Dorais as the expert on appropriate levels of biology in container systems. So I called her to understand her work. She has recently completed and collected data on tomatoes, peppers and cucumbers grown in organic soil and organic production systems. And her data is showing higher levels of biological activity and diversity in organic container production systems relative to organic soil systems.

In short, the assertion that biology is less active and less diverse in containers is not backed up by the evidence. Furthermore, organic fertility products come from animal and

plant sources so growers and containers are in fact cycling nutrients from their previous cycle of food production into a new crop.

If you believe that there are products that do not require the active organic biology that we expect, then please address them to the National List process rather than arbitrary restrictions on whether growers can use their irrigation systems to aid in the feeding of the organism living in the root zone of their crops.

I also do not envy the members of the NOSB as you took on the tough task to allow some container systems while minimizing the appearance of picking winners and losers and the appearance of managing the economics of the market through the proposal. However, the proposal does create some head-scratchers. Nursery trees for fruit growers will be in containers for several years but lettuce is not allowed to be outside the soil for just a few weeks.

Sprouts are said to be exempt because they're grown only in water but many sprouts are

grown in substrate and even the same sprout themselves.

Herbs are exempted but microgreens are not. Basil is okay but kale growing right next to it in the same facility with the same nutrition systems also is not. I guess mushrooms were exempted in the justification but then never mentioned in the proposed regulation.

So while the CSO believes that the USDA's interpretations of the regulations currently are correct and there's no need for additional regulatory action, we can recognize the inconsistencies between auditors. If the NOSB feels like there must be modifications to regulations, then I would encourage the NOSB to review the criteria established by multiple auditors that currently certify production that's not in the outer crust of the earth. Thanks.

MR. CHAPMAN: Thank you, Lee. I don't see any questions. Thank you.

MR. FRANKEL: Okay, I have a copy of the report as well with the biological study for

your reference.

MR. CHAPMAN: Thank you. Up next is Emily Lyons, followed by Jessica Walden.

MS. LYONS: Good morning. My name is Emily Lyons, and I'm here on behalf of the International Dairy Foods Association.

IDFA represents the dairy manufacturing and marketing industry and their suppliers, including several organic dairy companies. I appreciate this opportunity to comment today on the sunset review of sodium phosphates.

In general, IDFA supports that the Board renew the use of sodium phosphates for use in dairy products. Today my comments are specifically going to focus on how and why sodium phosphates are used in dairy products with specific emphasis on their use in processed cheese.

Sodium phosphates are emulsifying salts that are used when there is no alternative that exists and it's essential to the production

of organic processed cheese products and some fluid products, such as heavy creams.

Emulsifying salts are used in dairy products to supplement the functional properties of milk proteins by removing calcium ions from the casein micelle, a.k.a. it binds the calcium in the product and then also helps to solulyze and hydrate proteins. It stabilizes and promotes emulsification. It also assists in controlling pH and helps form the desired structure and form of processed cheese after it's cooled.

Emulsifying salts are used in varying amounts and usually contain a combination of salts, such as sodium phosphates and sodium citrates. But that all depends on the type of processed cheese product that is being produced.

Specifically, due to sodium phosphate's calcium binding properties, its higher emulsification of fat and stronger dispersion in hydration of milk proteins, it's used especially in the production of spreadable processed cheeses and powdered processed cheese.

Whereas, sodium citrates are used more commonly to produce sliceable and block-processed cheese products. But again, like I mentioned, these are generally used in combination but can also be used alone depending on the product that you're producing.

IDFA's organic dairy companies produce a wide variety of processed cheese products, which are also used in ingredients in other organic foods, and they've also put significant time into finding a suitable organic replacement for sodium phosphates. But at this time, they've been unable to find a suitable replacement for the functional properties of sodium phosphates.

Limiting organic processed cheeses to solely using citrates would reduce the flexibility and ability of organic producers to make a wide variety of processed cheese types, which have differing end product characteristics that meet consumer demands for a wider range of organic dairy products.

I appreciate the opportunity to have

provided these comments to the Board.

MR. CHAPMAN: Thank you. Thank you very much. Up next is Jessica Walden, followed by Marianne Cufone. Sorry, I mispronounced that. Jessica, name and affiliation please.

MS. WALDEN: Jessica Walden from QAI. Hi guys. Thanks for this opportunity to comment and thanks for all the amazing work that you guys do, hours you put in.

QAI is one of the leading providers of organic certification services for organic production and handling operations and products. We submitted written comments to several proposals that came out of all the subcommittees. Today my comments will only address the CACS proposal on excluded operations in the supply chain and the Handling Subcommittee's proposal on the reclassification of potassium acid tartrate.

QAI supports the proposal for the excluded operations in the supply chain. We had a minor -- or suggested addition that -- under the recommendations section, that you mimic the

language in the regulation instead of saying an operation is excluded from certification, that you say an operation or portion of an operation is excluded from certification if, dot dot dot.

The other question -- my understanding of the proposal is that for non-retail containers that contain retail label product, they can still comply only with 307B, which includes the lot number. Is that right? But if the non-retail label does not have a retail label product inside of it, then it must comply with 303. Is that the right -- okay.

Okay, so I believe that, that proposal can be passed at this meeting with just that slight revision and there was also -- we support also some suggested revisions submitted by OTA.

We believe this is a -- the benefits far outweigh the cost in this and we support any action that will address and mitigate fraudulent activity in the organic industry.

Regarding the classification of potassium acid tartrate, we agree with the

subcommittee's proposal to change the classification from nonagricultural synthetic to agricultural nonsynthetic, and we're excited that you are making these determinations based on the guidance that came out of the NOP and the decision trees. The only suggestion we have there is in the -- maybe in the discussion of the recommendation or even in -- when the NOP makes the change, that it's clarified that any potassium acid tartrate that's produced from wine that can make the "made with organic" claim because of the use of sulfites would not constitute an organic potassium acid tartrate, and that's it.

MR. CHAPMAN: Thank you. Emily.

MS. OAKLEY: Thank you for your comments on eliminating the incentive to convert native ecosystems, and I noted that you had a proposed motion wording change. I was wondering what your thoughts were on the motion wording change provided by the Wild Farm Alliance.

MS. WALDEN: I -- can you tell me what

that is by the Wild Farm Alliance?

MS. OAKLEY: I don't have it right in front of me.

MS. WALDEN: Okay. I don't have it right in front of me either. Yes, our suggestion was to follow the IFOAM. So if it's similar to the IFOAM terminology, which is really just instead of -- I think, let me just quickly go to what the IFOAM-1 says, is that, "Farming or grazing areas installed on land that has been obtained by clearing of native ecosystem sites in the proceeding 10 years shall not be considered compliant."

So it's -- instead of -- the terminology that was there in the proposal was, you know, someone could convert to conventional and then convert to organic. So this just seems to solidify it but if the Wild Farm Alliance has similar terminology, then yes, we would support that.

MR. CHAPMAN: Thank you.

MS. WALDEN: Thanks.

MR. CHAPMAN: Up next is Marianne, followed by Tracy A. Nazarro. You can start with your name and affiliation.

MS. CUFONE: Hi there. My name is Marianne Cufone. I'm the executive director of the Recirculating Farms Coalition, an environmental attorney, and I was on the NOP Hydro Aquaponics Task Force.

It's highly unfortunate how the conversation about hydro and aquaponic certification has developed into a name calling, finger pointing, divisive issue. Whether you grow food in the ground, in a raised bed or container, on a trellis in pebbles or other medium, we're all farmers.

Many of us try to grow food in the best way we know how for us and our planet. And some of us grow and accord with existing legal organic standards, and for that, if we meet USDA organic standards, we should get a USDA organic label.

The label isn't owned by any

particular group of farmers. While we appreciate those who've paved the way for the label, that doesn't make it exclusive. It's a government issued label and that should be available to any farm that meets the legally defined standards.

In line with this, I noted that the most common complaint about USDA organic certification for hydroponics and aquaponics is that they don't directly enhance the dirt on the ground. That's not actually true for a lot of these farms, but even if it was, then it is equally inappropriate to allow certification of farms that use the container method of growing, unless hydroponic and aquaponic farms can also earn certification. The soil in these containers does not touch the earth. The container option is no compromise. It's a specific exemption to allow dirt farming in raised beds.

That still leaves hydro and aquaponic growers with nothing. Some say organic is just about using dirt itself. This makes no sense. We have a recommendation from this very Board

pending with USDA to allow organic seafood, which has nothing to do with dirt on the earth. Some people may associate the term USDA organic with soil but most associate it with the cleanest or best method of production. Not all hydroponic and aquaponic farms are the same, just like not all in-ground or container farms are the same.

I'm extremely disappointed to hear and read sweeping generalizations about hydro and aquaponic energy use, inputs materials and other matters at this meeting. Much is inaccurate and thus irresponsible. For example, our farm in New Orleans grows entirely outdoors, uses only organic and heirloom seeds, runs almost entirely on solar power, relies mainly on rainwater and recirculates all the water and waste within our farm. We also grow in-ground and in raised beds. We don't refrigerate or ship our products and we reduce fuel usage too. We leave the world a better place and feed people.

In our world today, we need more responsible farmers, smarter resource use and

thoughtful production. Excluding hydro and aquaponic farms from organics is neither smart or appropriate. It takes away incentive for new and beginning farmers to be innovated for existing growers to versify their systems and to be smart about all resource use, not just soil.

Please don't take away the USDA organic label from farmers who earned it just because they chose to raise food through innovative hydro or aquaponics and let's stop being a hydro farmer, a dirt farmer, a container farmer and just all be farmers who are all eligible for the USDA organic label.

I brought a couple of pictures for you folks to look at because everybody's been questioning what these farms look at and I also just want to show you this last picture.

MR. CHAPMAN: Thank you, we'll have to move on. Any questions?

MS. CUFONE: Sure.

MR. CHAPMAN: Asa.

MR. BRADMAN: What do you feel about

labeling, and whether there should be a -- would a compromise on these issues be a label that was organic, hydro-organic, organic hydroponic, or aquaponic, some variation thereof? I'm not talking about the specifics. But --

MS. CUFONE: We talked about this on the task force. And there was an interesting consensus actually on both sides of the issue. Because as you saw that we were very, very split.

And the thought was, there could be a different label. But it needs to say USDA organics. So, it could be USDA organic hydroponic, USDA organic aquaponic. But we're all wanting that organic label. Because it's valuable.

MR. CHAPMAN: Thank you very much.

MS. CUFONE: Yes.

MR. CHAPMAN: Up next is Tracy Nazzaro. And following her is John Bobbe. Tracy, if you can start with your name and affiliation?

MS. NAZZARO: Great. Thank you. I'm

Tracy Nazzaro, with Traders Hill Farm. We are a commercial aquaponics farm in nearby Hilliard, Florida.

New and innovative farming technology such as hydroponics and aquaponics offer advantages over traditional farming methods in terms of sustainability and environment preservation.

At Traders Hill Farm, we use no pesticides, no herbicides. And our plant nutrients are 100 percent organic. As an added benefit, our production system utilizes less than 10 percent water as compared to traditional ground farming.

My comments today address concerns regarding the ability for a commercial aquaponics facility to produce safe and clean food. Based on my direct experience at Traders Hill Farm, I will speak to the following.

One, the safety of our fertilizer nutrients are created via our aquaponic system. And two, enterprise-wide food safety protocols

that ensure the safety and quality of our produce.

First I would like to dispel a glaring misconception that commercial aquaponics applications are fertilizer that is our plants' -- - nutrient source for our plants is not fish waste. It is not fish waste.

The fertilizer used in our production facility is nitrogen in the form of nitrates. The fish effluent is accrued product in our system that is converted to a nutrient source for our plants. And the process is quite straightforward.

Animal proteins, our fish, are housed in a completely separate and fully enclosed facility adjacent to our greenhouse. The fish effluent leaves the fish tanks and flows through multiple tanks that aid in filtration, sedimentation, and then a biological refining chemical conversion.

The filtered water is then biologically refined through the process of

nitrification. The same species of nitrifying bacteria found in ground farming and soil environments convert ammonia to nitrites then nitrates, the ultimate fertilizer for our plants.

Second, our food safety measures extend from our processes to our production floor and beyond. Our facility has extremely strict procedures for hygiene, and a multitude of food safety parameters in place to help minimize risk of contamination.

We have fully embraced the Food Safety Modernization Act of 2011, and maintain a Safe Quality Food Level 3 Safety Certification. We were the first aquaponics facility, and we believe the only aquaponics facility to achieve this level of food safety.

This level of certification requires annual third party inspection, comprehensive documentation of all processes, procedures, and maintenance, as well as traceability of product all the way from seed to customer.

Every Traders Hill Farm team member

takes the Safe Serve Food Handling course on their first day of employment. And we are proud to have nine HACCP certified individuals on staff.

Commercial hydroponics and aquaponics farming methods are responsible. And that should absolutely be allowed to pursue the USDA organic designation.

We and our fellow farmers are up to the challenge of meeting the stringent organic certification criteria, and should be afforded the opportunity to do so. Thank you.

MR. CHAPMAN: Thank you. Ashley.

MS. SWAFFAR: Are you currently certified organic?

MS. NAZZARO: We are not currently certified organic. Although we have put together a task force, because that is one of our goals. We're a young company, started in the end of 2013. So, it is on our list of action items. Thank you.

MR. BRADMAN: Just the same question

I've asked many people. How do you feel about labeling?

MS. NAZZARO: So --

MR. BRADMAN: And would you accept an aquaponic label?

MS. NAZZARO: So, we are very proud to produce, to be aquaponic farmers. And we already include that on all our packaging. And we would continue to be amenable to do that. We would like the USD organic label. And we would do a sub note that we are -- that the produce was grown aquaponically. Absolutely.

MR. CHAPMAN: Thank you. Dave.

MR. MORTENSEN: Just curious. What would happen if you didn't have the organic label, and you were to say naturally grown hydroponic?

MS. NAZZARO: We would continue to produce in the exact same way that we are producing right now, in our very safe, clean, healthy manner.

MR. MORTENSEN: Okay. So, it wouldn't

put you out of business?

MS. NAZZARO: It would not.

MR. MORTENSEN: Okay. Thanks.

MR. CHAPMAN: Thank you very much.

MS. NAZZARO: Thank you.

MR. CHAPMAN: Up next is John Bobbe, followed by Andy Hudson.

MR. BOBBE: I'm John Bobbe. I'm the Executive Director of the Organic Farmers' Agency for Relationship Marketing.

USDA classified us in an article that we are the largest marketer of farmer-owned and controlled grain in the United States, with our member cooperatives in 19 states from Montana to Texas and Louisiana, and through Ohio, Tennessee, and Kentucky. Our farms range in size from 100 to over 7,000 acres.

I want to address the issue of organic fraud. Based on my experience of having been traveling to the Ukraine to participate in the Organic Integrity Project, and also for 17 years in the Black Sea region.

We wrote a letter to the Inspector General of the USDA asking them to look at not only what they were originally going to look at, just European relations with the NOP, but non-European countries.

And we re-wrote that letter after the Washington Post report uncovering the fraud. And it said in that report that AMS was unable to provide reasonable assurance that the NOP required documents were reviewed at the U.S. ports of entry.

Now, we had dinner with a gentleman by the name of Peter Whoriskey from the Washington Post, that started the conversation. And I had several conversations with him until his article came out.

And OFARM has uncovered by itself four separate ship loads, not containers, ship loads of 450 to 500,000 bushels of grain. Two of those have been shown to be total fraud. Three of the ships in the Whoriskey article were also all fraud.

The most recent one that was suggested yesterday, we stopped the ship. Do you know how the NOP stopped the ship? Because our contacts in the U.K. told OFARM the ship was coming. And Miles McEvoy personally told me they had no clue.

And we turned it over. And it was actually APHIS that stopped the shipment. Or there would have been another corrupt shipment of grain coming into Bellingham, Washington.

There is not one country in the Black Sea region that can come up with one shipload of certified organic grain. And that includes Turkey, that does not produce one bushel of soybeans or corn certified organic. And they are the biggest exporter.

We're talking about complete fraud here. And a failure. I've made some recommendations that I made to the conference in Odessa about what should happen. We agree with many of them that were presented here yesterday.

And among them technologies to model. And also that we need to coordinate with the

European Union on their fraud initiatives. Thank you.

MR. CHAPMAN: Thank you, John. Questions for John? Dave.

MR. MORTENSEN: Yes. The Panel discussion yesterday morning really, from my point of view, centered solely on software for tracking, which obviously is very important.

And it's also pretty obvious that that's going to take time for that to be developed. What other things in the short term should we be thinking about as a board?

MR. BOBBE: One would be international maritime laws. And that is a simple request: what's the cargo insured for? There's only one insurer in the world. And no insurer in their right mind is going to insure a conventional load of grain at twice the price.

International maritime law, as I understand it, also allows for seizure of shipments that do not reflect what's on the ship manifest. And that's exactly what was on the

manifest of the ship that Peter Whoriskey found the documents, the blatant documents that were altered on the way over here.

MR. CHAPMAN: Thank you.

MR. MORTENSEN: Thank you.

MR. CHAPMAN: Harriet.

MS. BEHAR: Hi, John. Do you think there's a way that we can work with the buyers here in the United States to provide actually a premium to the domestic producers? Because not only was there fraud, and our producers lost markets, but they -- it also drove down the price.

But I know that some buyers are looking for domestically produced. So, I'm wondering how we might be able to enhance that marketplace for domestic.

MR. BOBBE: Well, we, in our OFARM cooperative network, are discussing that. Because we do not deal in imported grain. We deal with 100 percent organic U.S. grown. And our producers are proud of that.

What's fallen down is on the NOP, and their attempts. Six months ago, before the NOP meeting in Denver, there was an NOP employee telling one of our people, there's no problem here. There's no reason for you to go to the NOSB meeting.

And then three weeks later, the Whoriskey article blows up in their face. So, yes, there has to be. We've been having discussions with our marketers, or have been on a day to day basis.

Consumers should be concerned, because this is massive fraud on the consumer end. We've had some inquiries about it. But this is going to be a long, slow process to change that around.

The damages to our producers run in the hundreds of millions of dollars. The biggest catastrophe in the history of organic in the U.S.

MR. CHAPMAN: Sue.

MS. BAIRD: Hi, John. I have heard from some feed mills that without imports of grains, there will not be enough supply of

organic grain. Can you address that, John?

MR. BOBBE: Yes. Now, let me make perfectly clear, we and OFARM are not opposed to imports. We are opposed to the rampant fraud that is blowing the prices down by one-third.

And, yes, we import about 70 percent of our soybeans, and about 40 percent of our corn. And the question for us as producers and organizations, but everyone, is: how do we get the industry to focus on, instead of relegating U.S. producers to being a residual --

Here's what the buyers tell us. You can bring your grain in, but we're bought out for three months, full of imports. You can bring it in, but fire sale it to us.

And what they're using is higher priced imports to beat down the domestic price. And the word from more than one buyer, as long as the piece of paper has the word "organic" on it, they accept it.

And the other question is, there's some certifiers here that got their hands dirty

on this one too, collecting a lot of money certifiying imports that were fraud. Because they can't trace the shipments off the back end of the ship.

Our farmers are entitled to the same fair treatment as the farmers in the other countries. A yearly inspection, an organic service plan, how that field was done, tracking from field all the way through.

And my guess is that the NOP or any of these certifiers couldn't track one single ship load back to where that was on equal treatment.

MR. CHAPMAN: Briefly.

MS. BAIRD: What would you suggest that we implement for a traceability tracking system from these foreign countries?

MR. BOBBE: Well, I think first of all, what the European Union has done, and that's a part of our recommendation here. That was a part of the memo, the guidance memo that we have been hammering on Miles McEvoy for about six months to do.

The other thing is, high risk countries, like the Europeans do. That if it's coming in -- right now, the NOP can't locate ships. They don't know where they're coming from. They don't have a clue. That's what Miles told me.

We need to have a system. Somebody in the U.S. Government is tracking those ships. How does that information get shared with the NOP? How do we have the appropriate people to follow through on the Inspector General's report that they're at the ports?

A bunch of farmers have got to get a message from England, and feed it to the NOP. So we have people meeting the ship in Bellingham, Washington. That doesn't speak very highly.

We've got business to do running the combines this time of the year, instead of worrying about fraudulent shipments of grain. And we need to follow what the Europeans are doing very closely.

In my comments is what they're doing

about their electronic tracking system. I do agree with the blockchain system. However, there are some other systems out there. It's being used extensively in Italy. But there are other countries in Europe that are looking at others.

And once the electronic certificates are in place that would allow, like in Europe, that before that ship is even loaded those documents are on the way to the NOP and the certifiers that this is going to happen. And if it doesn't meet the initial screening criteria, it doesn't go to the EU.

MR. CHAPMAN: Ashley, and we'll end it there.

MS. SWAFFAR: Thank you for your comments. Part of the Farm Bill, there was the Organic Farmer and Consumer Protection Act introduced. Do you think that that will help lay some of the groundwork for solving this problem?

MR. BOBBE: It could. I have not looked specifically at it. There's another one, the Fazio bill that may. What we need is

certification of buyers, traders, importers.

There's one company that's a common thread through all these ships, almost all of them that we can verify. They're not certified. We know that. And so, they're running through the cracks. They're not even on the NOSB or the certifiers' radar screen to do this.

MR. CHAPMAN: Thank you. Thank you, John.

MR. BOBBE: Thank you. And we appreciate, I learned a lot from the Panel yesterday about how this might work. And I'm sure our farmers are going to have some ideas and suggestions for --

MR. CHAPMAN: Thank you.

MR. BOBBE: -- members of the NOSB.

MR. CHAPMAN: Thank you, John. I encourage your farmers and members to utilize the open docket to get that to us. And you have my contact information as well.

MR. BOBBE: Thank you.

MR. CHAPMAN: Up next is Andy Hudson,

followed by Christopher Pierce. Andy, if you can start with your name and affiliation?

MR. HUDSON: Good morning. My name is Andy Hudson. And I'm the Director of Quality Control, and Senior Research Scientist at Westbridge Agricultural Products.

And we are here, I'm just here to talk a few minutes about the sunset review of soap based herbicides in non-production agriculture.

To be clear, Westbridge does support the continuation of the current classification, but we would strongly oppose the expansion of these synthetic products into crop growing areas.

I submitted a written comment on this issue in late October, and on behalf of Westbridge. And this oral comment is to recapitulate and expand on the two main points on that submission.

My first point was and is that salts and fatty acids are synthetic materials as defined by the NOSB. In addition, herbicidal soaps should not be considered analogous to

insecticidal soaps.

Insecticidal soaps are potassium soaps of naturally occurring, even-numbered fatty acids. While herbicidal soaps are ammonium soaps of odd-numbered fatty acids, which are not naturally occurring.

Okay. The slide that's showing now illustrates a common method. Oh, no. The slide that's showing now shows the differences between the even-numbered fatty acids with a potassium counterion, versus the odd-numbered fatty acids with an ammonium counterion.

The slide that's showing now illustrates the common method for the manufacturer of herbicidal soaps. The general process involves oxidizing a long chain fatty acids, and under the proper conditions and with the proper catalyst, will result in several small chain fatty acids as products.

Nonanoic acid is one of these derived small chain fatty acids. In addition, the synthetic ammonium cadiron used in the

manufacture of these herbicidal soaps is a non organic form of nitrogen that is being applied to organic soils. And I don't think that that should be disregarded.

The second point in my written comment discussed a viable organic alternative for weed control in crop growing areas that was not mentioned in the other comments submitted. They did mention the flaming and the hand weeding, which are both very intensive in labor, and very expensive.

But there is an organically approved material for application in organic crop growing areas. Suppress is a contact, post-emergence herbicide with activity against dicots, monocots, and sedges.

Crop plant back can be performed as soon as one day after application. And it has a zero day pre-harvest.

MR. CHAPMAN: Thank you very much. Emily.

MS. OAKLEY: Do you have any concerns

about the current annotation that allows for insecticidal soap use in ditches, since there is a known toxicity, both moderate and high depending upon the organism of aquatic species?

MR. HUDSON: What was the last part of that?

MS. OAKLEY: There's -- sorry. There's a known toxicity for aquatic animals with this product. So, do you have any concerns about its use in ditches where there may be --

MR. HUDSON: Well they --

MS. OAKLEY: -- standing water and --

MR. HUDSON: They will then say to avoid any situation in which it would hit surface waters, or contamination of waters. And the label very explicitly states that it needs to be shielded sprayers.

It is non specific. So, the label does call that out. And we have recently received some data that the, it does have -- it doesn't have any impact on like honey bees, and so forth at field use rate.

MR. CHAPMAN: Thank you very much.

MR. HUDSON: Okay.

MR. CHAPMAN: Up next is Christopher Pierce, followed by Keith Kandt. Christopher, if you could start with your name and affiliation?

MR. PIERCE: Good morning. My name is Chris Pierce. I am the President of Heritage Poultry Management Services. We're located in Annville, Pennsylvania.

Heritage provides management services for over 50 small family organic pullet and egg farms in Pennsylvania. And we're currently now celebrating our 20th year of certification of organics.

And I've shared with this Board many times over the years on a variety of topics at previous NOSB meetings that included various topics on poultry discussion. I believe the opportunity for public comment to this board is crucial to the success of the program.

I want to thank each of the current board members for your time, your energy, your

commitment to uphold the integrity of the NOP program through the, which is a critical part of the USDA process.

The diversity of this board coming together to discuss and come to a unified decision point with high and low profile topics is honored and appreciated by me.

I also value the opportunity to be here today to represent our small pool of organic farmers. Because they're busy caring for the birds and running their farms. And it's hard for them to travel like it is for me.

So, a couple of things I want to talk about is the petition to add the elemental sulfur to the National List for use for livestock production, as a livestock parasiticide.

As organic egg farmers we partner with, we've implemented the practices already that comply with the OLPP, Organic Livestock and Poultry Practice Rule that this body was very instrumental in moving forward.

So, for us that are genuine organic

farmers that have birds out on pasture, we have a higher risk factor now than we ever have been. And we're looking for those tools in our toolbox that can help us deal with the exposure that we face when have the parasites like mites, and fleas, and ticks.

And with the time that they're spending out in pasture in the various areas of the country that is really critical. So, our toolbox has some tools that are missing.

And I know that the Livestock Subcommittee has voted in favor, I understand, of adding this to the National List. And I just want to support that we believe that is a good tool to add.

I also want to discuss the continued listing and allowance of chlorine materials to the National List. Our farms are on something called the Pennsylvania Egg Quality Assurance Program, which is the highest risk reduction for salmonella in the country. It's much higher than our FDA program has.

And a big part of that is sanitation. It's practices that we follow on the farm between flocks. We clean out. We disinfect. And we want to produce good, safe food. And we want to have the tools to be able to do that. So, I want to support that, the Subcommittee's continuation of listing that on the National List.

Lastly, I'd like to ask Dr. Tucker and all of USDA to proceed with the implementation of the OLPP rule effective November 14th, 2017, the month we're in right now, without any further delay.

A significant amount of organic poultry farmers had already made the updates to their operations to meet these standards, which would be expected to be implemented on March the 20th.

But the rule had gone through the various processes of federal rulemaking, had tens of thousands of comments in support of this rulemaking, and it was approved.

So, the future of integrity of

consumer confidence in the organic seal is dependent upon this rule being implemented as written. Thank you.

MR. CHAPMAN: Thank you. Any questions? Ashley.

MS. SWAFFAR: Thank you, Chris, for your comment. On the sulfur issue, I know it's pretty rare for a flock to get mites. But if you have -- I want to know if you've had experience with flocks in the past mites in organics.

MR. PIERCE: Yes.

MS. SWAFFAR: And what you've done, and if it was effective.

MR. PIERCE: It's a challenge. So, sulfur can be a feed ingredient. So, it's okay for the bird to have it as a feed ingredient. But it's not -- I believe so.

But like diatomaceous earth, there's not a lot of tools out there. And I'll be honest with you. In the last couple of years now, as we have transitioned into pasture, this has been an evolution.

There are times that we're dealing with challenges. We're dealing with mites. And we don't want the organic birds -- And we also don't want them to suffer. So, there's more of an exposure in different regions of the country.

There is something call the northern fowl mite. It is a relative of the deadly red mite that the European poultry industry is in total chaos right now.

There's something called Fipronil. I won't talk about it a whole lot right now. But there's an insecticide that has devastated the western European Union's poultry industry. And that was in result to trying to find a tool to deal with this red mite.

We do not have red mites. We have northern fowl mites. We're looking for natural remedies. We're not asking for insecticides like, we're trying to do things right.

So, we do not have tools right now to deal with this problem. So, there's not an alternative. Oh, just use Coca-Cola on them.

Like, there's nothing crazy out there that would -- And that probably wouldn't be allowed either. But there's nothing crazy right now.

MR. CHAPMAN: There's phosphoric acid in there. Any other? Thank you very much.

MR. PIERCE: Thank you. Thank you, Board.

MR. CHAPMAN: Up next is Keith Kandt, followed by Marty Mesh.

MR. KANDT: Thank you. My name is Keith Kandt, representing Nature Sweet Tomatoes. And I'd like to speak on the issue of hydroponic growing.

So, you've heard all this and that about this biology versus that biology. And I'm going to let a lot of smarter people -- people a lot smarter than me talk about all that.

But what I'd like to do is take a step back, and really think about what we're really trying to accomplish here.

In 1787, a group of founding fathers gathered to form a new Government. These

individuals agreed on really almost nothing. They had very different backgrounds, different personalities, different pet issues, very different views.

So, that probably sounds pretty familiar to you about now. After a lot of work though the result was the U.S. Constitution. And they did some very, very smart things. And one of the smartest things they did was recognize that they couldn't see the future.

They understood they couldn't foresee the issues, and the technologies, and the new learnings that would come along. So, they built into that Constitution a provision for amending and interpreting it, for adapting as new information became available, or as new issues arose.

You have the rare opportunity to stand on their shoulders. Clearly, hydroponic growing wasn't top of mind in the early '90s, as the legislation creating the organic program was born.

But within that law is an insight in the spirit of those founding fathers. And that is that a practice will be permitted unless it is determined that such practice would be inconsistent with the permitted or applicable organic certification program.

So, those writers understood they did not have the foresight to know where those advances in growing would go. You have the opportunity 25 plus years later to see the landscape that they couldn't see, and to peek into the future as well.

So, please take your encouragement from those founding fathers, and use the gift that they gave us, the gift to change and to grow, no pun intended.

Certainly, fiercely protect the spirit and legacy of the organic movement, much of which is represented here in this room. But don't let us get stuck in the mud. Okay, that pun was intended. So --

Anyway, please be visionary. The

founding fathers would be disappointed if we aren't willing to revisit and adapt, after they gave us that gift to do so.

Hydroponics and soil grown organics have lived side by side for 25 years. And third party research shows that consumers are not concerned about the growing method used. And I can provide that research to you if you don't already have it.

So, I ask you to give growers the freedom to pick the growing method that works best for the quality of their soil, the hostility or not of their weather, and their own belief systems. So, thank you very much for your time and your work on this.

MR. CHAPMAN: Thank you. Asa, Joelle.

MR. BRADMAN: The same question I've asked people on both sides. Are you comfortable with a label that would call out a hydroponic --

MR. KANDT: Got you. Yes.

MR. BRADMAN: -- container? Yes.

MR. KANDT: My recommendation is that

we not do that. And that doesn't come out of a, it's not, it comes out, it doesn't come out of a place of my way or the highway.

It comes out of that research that I mentioned a few minutes ago, and the research that I presented to this group about a year ago. Some of you may remember it. Some of you I'm sure weren't even here.

But in that research we asked consumers about how important it was whether the product was grown in the soil, or whether it was hydroponically grown. After we introduced the idea of hydroponics to them we asked them if that made a difference.

And overwhelmingly they said, no, it doesn't make any difference. Read my lips. The part I'm worried about is: no chemicals in my food. Of those that did care, more, most of them found hydroponics as either being a positive, or at the very least intriguing. And very few found hydroponics to be a negative when thinking about organic.

So, what I think you have the potential to do is to create confusion where none exists right now. And five years from now we'll be back here trying to figure out what to do with that confusion that now exists.

I wouldn't say absolutely I won't do it. But I would recommend you don't.

MR. CHAPMAN: Thank you. Joelle.

MS. MOSSO: First I'd ask that you do send that research from the survey.

MR. KANDT: I would be happy to send that to you, if you --

MS. MOSSO: Yes. My second question is in regards to your substrate that you grow in.

MR. KANDT: Okay.

MS. MOSSO: If you could, you know, elucidate what that is.

MR. KANDT: It's coco, coco coir.

MS. MOSSO: Solely? It's 100 percent?

MR. KANDT: You're talking to the marketing guy. So --

MS. MOSSO: Got you.

MR. KANDT: I can't swear to that.

MS. MOSSO: Okay.

MR. KANDT: I can get an answer for you though if you want to get more specific.

MS. MOSSO: I appreciate it.

MR. KANDT: I'd be happy to supply it.

MS. MOSSO: Yes. Thank you.

MR. KANDT: Okay. Thanks.

MR. CHAPMAN: Dave.

MR. MORTENSEN: Keith, what about, so following on Asa's question. What about it not being labeled officially organic, but naturally, sustainably raised produce?

MR. KANDT: Something along those lines --

MR. MORTENSEN: Yes.

MR. KANDT: -- instead of organic?

MR. MORTENSEN: Yes.

MR. KANDT: I think, when I mentioned that there doesn't seem to be a lot of confusion with the organic label, I can't say the same for terms like natural and naturally grown, and all

those sorts of things.

Everything I read, and when I do talk to consumers, it is very clear that nobody quite knows what those mean. So, I think that would really be stepping into an area where consumers would just say, you know, I'm throwing up my hands. I don't know what that means.

MR. CHAPMAN: Asa, and then we'll stop it there.

MR. BRADMAN: Can you describe your practices in terms of how materials are re-used, how they're recycled? Is there any sort of crop rotation, bio-diversity, any information about that, those issues?

MR. KANDT: About? I didn't hear the first part of the question.

MR. BRADMAN: Well, just related to practices. Is there any re-use of materials, recycling, composting? Is there any linkage to outdoor production? What's your system?

MR. KANDT: Okay. Our system is totally indoors. We don't have any outdoor

production. We do recycle. You know, we have a lot of foliage, a lot of leaves and so forth that do get composed.

I can't give you the details of that off the top of my head. But I could provide a little more information on that if you'd like. Let me see, what's a couple of the other pieces of your question? Give me a --

MR. BRADMAN: What happens to materials used in the production? And then also, crop rotation? How your facility may or may not contribute to bio-diversity?

MR. KANDT: Okay. I think I'd probably be better off giving you an answer to that privately, and giving you better facts.

MR. BRADMAN: Thank you. But anything you provide should go --

MR. KANDT: Okay.

MR. BRADMAN: -- to the whole board.

MR. KANDT: Okay. Yes. No. I'm not trying to skirt your question. I just don't want to give you wrong information.

MR. CHAPMAN: You can follow-up with Michelle, and she'll get it to the board members. Thank you for your time.

MR. KANDT: Okay.

MR. CHAPMAN: Up next we have Marty Mesh, followed by Melinda Mayfield-Davis. Marty, if you could start with your name and affiliation?

MR. MESH: Marty Mesh, Florida Organic Growers and Quality Certification Services. And our farm was Bellevue Gardens Organic Farm, that we farmed on a large scale in '76. I started farming organically in '72 -- at the end of '72.

So, I've seen a lot of history, and a lot, I've had the pleasure of seeing this sector of the industry grow. QCS has admitted technical comments.

So, and if you wanted to ask about free beer tonight, then ask me in the Q&A. Because I don't want to waste my three minutes. If you want to ask me about hydroponic history, I can give you some of that as well, and answer

some of the comments that were done before.

But one of the comments I want to make sure I get in in my short time is to ask to delay the vote on fatty alcohols.

You know, we believe that a lot of growers in the south didn't have time. We know that they couldn't sign up for comments. Because the recommendation came out when the comment period was already filled up. So, they couldn't get here, you know, they couldn't come and be here to tell their story, and to ask for it.

So, we would respectfully ask that you give farmers a chance to show up, as well as some other technical people that may have some input on it, but also couldn't get a spot to do it.

And then, I think the hydroponic thing is really, this whole meeting has really been difficult for me to hear, and the comments about that.

And thank you to Francis. That was the other thing on my list. You've been a wonderful addition to the board. And thank you

for your service. And all the board, as well as the program.

I think we underestimate the, we know how much the board works. But the program is there working as well. And so, my thanks to the staff of the program, as well as all the board members.

You know, I heard comments about, how did we get into this mess? And I'm happy to give a little bit of history or, you know, where did this come from?

I will tell you that in 1996 at that board meeting here in Florida, in Orlando, I was there really to convince the Board not to list Chilean nitrate, you know. I was totally against it as a farmer. Totally against it.

You know, it's salt laden fertilizer, not good for earthworms. I had a great public comment there. And then hydroponics was introduced. And I lost the Chilean nitrate vote by one vote on the board. The unanimous I think was referred to later on, on the hydroponics one.

Here's the people that I remember that were on the board. You know, when you talk about all of these, or these big corporate people. Tom Stoneback, Rodale Farms, Rodale Institute. Donald Kinsman, American Meat Council.

Craig Weakley, Muir Glen Farms. William Friedman, New Mexico Organic Commodity Commission. Michael Sligh was Chair of the board at that point in time. The Board Chair from RAFI. Dean Eppley, Pleasant Home Farm. Gene Kahn, Cascadian Farms. Kay Chamerlain, I think it was, Texas Plant and Soil Lab.

So, with that, I can give you those, Kathleen Merrigan's on there, Bob Quinn. You know, it wasn't corporate people that weren't interested in truly seeing the future of organic --

MR. CHAPMAN: Thank you.

MR. MESH: -- agriculture or organic growth.

MR. CHAPMAN: Thank you, Marty. I will rarely go first, and ask you to talk a

little bit about the history of the hydroponic issue. And then we have Harriet.

And if someone tries to steal the beer question, don't do it. I'm also -- I'm reserving that one for the end. Okay. Jesse, Dave, were you also? No. Okay. So, if you could explain a little bit more about the history? That was my question.

MR. MESH: Of the free beer? Can I?

MR. CHAPMAN: No, no. We'll come to the free beer at the end. Don't worry about that one.

MR. MESH: Okay.

MR. CHAPMAN: History of the hydroponic debate. Yes. I think you're at the end of --

MR. MESH: So yes. Fred Kersherman (phonetic), Mark -- We all know Fred. We all know Michael. I mean, Margaret Wittenberg, Bob Anderson, Walnut Acres. Bob Quinn, Margaret Clark. I mean, those were the people that I remember at the Orlando meeting.

And it was a unanimous vote. They all were in agreement that this is -- And I was floored. I mean, I was a dirt farmer, you know. That's what our farm did.

So, the idea of -- And then, to fast forward a little bit, that was in '96. Certifiers of course, you know, the languishing of the proposal, the first proposal, this or that.

We were responding to a growing industry, a market demand. And so, you know, certifiers started certifying. If the board, you know, our language was, if the board said this is going to happen, then it's going to happen.

And if it's taking that long, then let's just get out in front and run with it. There's not a final regulation yet. That will be included in there.

So, CCOF obviously, you know, we certified hydroponic operations back then. But, you know, seaweed, fish emulsion, kelp, the same inputs that some of the other growers are using.

Again, I come from a dirt farm, the same farm background, chicken manure. So, you know, I'm not a proponent of hydroponics. I'm just giving you the history of it.

MR. CHAPMAN: Thank you. Harriet.

MR. MESH: And by the way, USDA at that point in time was, you know, it was okay, 2002, let's grow this industry. Let's grow this industry. And so, they were about growing the industry, not so much about developing standards.

MS. BEHAR: So, I have a question about the fatty alcohols. Do your growers want to use it for tobacco, or for other crops?

MR. KANDT: You know, and here again, you know, I don't take a position on tobacco. I don't smoke. I'm a anti-smoker. But tobacco is a crop. I could give you a history about okra in the south, the whole okra thing.

But they do want to use it on tobacco. And they're growing certified organic tobacco without any of the chemicals that are put in post harvest in cigarettes, I guess, and whatever

that's, you know. But, yes, that's what it's for. And they're the ones that wanted to come speak.

MR. CHAPMAN: Jesse.

MR. BUIE: You mentioned delay in fatty alcohol. Is Tom here? Is he --

PARTICIPANT: I don't know if he's coming. He's gone to the --

MR. CHAPMAN: Yes. He's on the speaking list later.

MR. BUIE: Okay. Okay.

MR. MESH: I just know that we certify some seven tobacco growers. And so, that's what I was speaking on.

MR. CHAPMAN: Thank you. And, Marty, free beer. Tell me more.

MR. MESH: So, tonight from whatever -- Michelle may know better than me. I think it's 7:00 p.m. It's whenever you end the meeting. Thirty minutes after you end the meeting. No pressure, Tom.

But it's right down the road. You can

walk there, 20 minute walk. It's -- and there's some flyers out front that Michelle and I put on the table. And there's some food, and beer, and stuff like that.

MR. CHAPMAN: Thank you, Marty.

MR. MESH: And you can take a boat taxi and get out on the river.

MR. CHAPMAN: Thank you, Marty. I don't run this meeting. I just herd cats. Up next is Melinda, and after that is Gwendolyn Wyard. Melinda, if you can start with your name and affiliation for the record?

MS. MAYFIELD: Hi. Thanks for listening. I am Melinda Mayfield. And I'm a licensed veterinarian, and a WIN certified health professional for animal health.

And we have a petition to include hypochlorous. I know it's already included as a surface disinfectant. I get inquiries quite often when I, either from email or our social media, on organic farmers wanting to know if our product is certified organic.

Some of the benefits of hypochlorous over the currently approved therapies, the research behind it. There's multiple studies on hypochlorous that prove its effectiveness and its safety. Many of the organically approved therapies lack the scientific data.

Speed of activity, I know honey is one we also compare it to. And the hypochlorous has a 15 second kill time, with a seven log reduction. Where if you look at honey, it often takes up to 24 hours to even receive a six log reduction.

The other benefit is versatility. hypochlorous with our product can be used in the eyes, the ears, and the mouth. It's safe if licked or ingested. It also kills bacteria, funguses, viruses, and yeast. So, it's very versatile.

And the availability. Many of the farmers in a rural area have trouble actually obtaining some of the approved therapies. They're not as in wide use. Whereas,

hypochlorous is widely available, even at a lot of the farm stores and things. Then can acquire it if they need it in an emergency.

A brief review is, also hypochlorous can be used in all areas of tissue management and wound management, like infection control, moisture management, edge advancement.

Studies prove that hypochlorous does increase fibroblast migration, which will speed up the healing. Many of the organic therapies can leave a residue. Some of them can be sensitizing. And there's really not scientific data to support a lot of those.

Like I said, kill time is very good, 15 seconds, with even MRSA, pseudomonas, e coli, tricophyton, the ringworm, and even the parvovirus.

The National Center for Complementary and Integrative Health, we talked with them. They're mainly in human health. But like they said, they also said there's just not enough scientific data, even with aloe, to say that they

can definitely say it does help with wounds.

We know that there has been some anaphylaxis reaction with chamomile. St. John's wort has been proven to have sensitivity. So, really the scientific data, as a veterinarian I like to have data. And a lot of veterinarians do. So, I think some data behind it definitely encourages more veterinaries to use it.

So, here's some of the in vivo studies they've done on hypochlorous. And those are in the packets. I have packets for you all. But you can look at them more in depth.

And it shows that the effectiveness against MRSA and biofilm, which biofilm is important now. And just to go back, very widespread, the use of fungus. It is a chlorine. So, it's more of an electrolyte type solution. And I know some electrolytes are approved for use.

I did talk with Dr. Karreman, who was on this Board previously. And he has used Vetericyn. And we also -- the pinkeye study we

did, if you look at it, one of the things that really was encouraging to me is that it no only cleared up the pinkeye, but it had a 60.8 percent reduction in pain scores on those CADs.

And as an animal steward, I think one of the things that's important for us is to reduce pain and suffering in the animals. And the hypochlorous can do that, not only in the pinkeye, but also in wounds and burns.

MR. CHAPMAN: Thank you. Questions?

MR. BRADMAN: I just have one quick question. I know Albert Straus, from Straus Dairy in Petaluma, a really long esteemed dairy farmer and organic. Have you talked with him at all? And do you have any information about his impressions, beyond just the very short comment he made in the --

MS. MAYFIELD: I have talked to his various dairy farmers. And like I said, I've been on the phone with some of them. I talked to one this morning. And they've used some of the protocols. Some of them have good luck with it.

Like I said, my biggest deal, I'm in a very rural area of 3,000 in the community. And so, some of these are very hard for them to get a hold of. They like the idea of having something that's a wide range of use, that's not just for pinkeye, and not just for wounds.

And like I said, we've done all the studies. There is no residue in the tissue, no residue in the milk. So, it's very safe. In the environment it just breaks down into basically water and salt.

Like I said, there is a little bit of need out there, when I talked to the producers. And there has been, at all the seminars --

MR. CHAPMAN: Thank you very much.

MS. MAYFIELD: -- I go to, the Dairy Bill, they ask --

MR. CHAPMAN: Thank you. I'm going to have to cut you off there. Thank you very much though. I'm not seeing any other questions. Up next is Gwendolyn Wyard, followed by Jenny Cruse.

MS. WYARD: All right. Well, good

afternoon, NOSB Members, NOP staff, and ladies and gentlemen of the gallery. My name is Gwendolyn Wyard. I'm the Vice President of Regulatory and Technical Affairs for the Organic Trade Association.

And I'm estimating that all of you collectively, since the last meeting, have put in approximately 4,260 hours, which breaks down to 177.5 days, during which time you produced a 177 page packet that you turned over to us to deal with.

On our side, in less than 30 days we spent approximately 300 hours of membership engagement, research, and writing, that produced 67 pages of comments, and a 44 page resource booklet.

And so, now in less than three minutes, I'm going to quickly run down the list of topics that I covered. And in a very abbreviated fashion ask: do you have any questions?

So, organic seed proposal. There's

two proposals in the document. And the motion is to accept all additions as described in the proposal.

You can separate out the proposal for regulatory change, or the motion for -- proposal for regulatory change for -- from guidance. If you can do that, then we urge you to pass the proposal that would require continuous improvement in sourcing and use of organic seed at this meeting.

And then take the proposal on the guidance piece back to subcommittee for additional work. And we've detailed all the reasons in our comments for the additional work that's needed.

Excluded operations. We believe that a regulatory change that will limit the types of operations, also known as, traders, brokers, et cetera, that may be excluded from certification, is the most important step that must be taken.

But we also strongly support the proposal on guidance, training, and certifier

oversight. And we really look forward to working with you on future actions we know you are yet -- that are yet to come.

Excluded methods terminology. Based on our best review of definitions we believe that cisgenesis, intergenesis, and agro filtration should all be classified as excluded methods.

But our request is that the proposal be revised to actually include definitions for those terms in the proposal, to make sure that we're all talking the same language.

Potassium acid tartrate, also known as cream of tartar, yes. Classify as agricultural. Great move. Way to use the classification of materials guidance that is near and dear to my heart.

There are few things in this world that I like more than a perfect meringue. And I do hope that in the near future I'll be able to buy organic cream of tartar.

2019 Sunset, based on our survey results we believe that all of those materials

should be re-listed because of the lack of natural or organic alternatives.

The one that we're struggling with is konjac flour. I'm having a hard time getting the information that we need on that. One consideration is to go ahead and vote for its removal, knowing that we'll have another opportunity to comment when the proposed rule comes out.

And the finally, on seed purity standard. Tough but critical issue. Thank you for keeping it on the agenda. Keep the good work up. Thank you. Any questions?

MR. CHAPMAN: Questions? Gwendolyn, I have a question. You talked briefly about konjac, and voting it off, and allowing time for comment later during, for the rulemaking.

You also commented a lot on just the amount of work that goes into NOSB recommendations in general that then get forwarded onto the program for potential rulemaking.

You guys were one of the commenters who commented on the three materials of the 2017 Sunset that got re-listed by the program. And I was just, you know, I was curious to know your impression of that process. It seemed fairly new this time. And just, you know, get your thoughts on that.

MS. WYARD: Okay. So, 2017 Sunset review. We're talking inulin, whey protein concentrate, and Turkish bay leaves?

MR. CHAPMAN: Correct.

MS. WYARD: Okay. We commented, so during the NOSB process we commented in favor of removing those materials. And that comment was based on the extensive Sunset survey process that we go through, and reaching out to as many members as we possibly can.

During the NOSB process I jump up and down. I do everything I possibly can in my position, in my power, to alert industry to the fact that you guys are reviewing these materials, and that people need to weigh in.

There is no way that we are going to be able to reach everyone. It just won't happen. There are many, many companies out there that are not OTA members. Even reaching all of our OTA members, because everybody has their busy lives.

So, we don't reach everyone. We try our best. The comments that we received at that time put us in the position to say, go ahead and remove those materials from the National List.

Now, when the proposed rulemaking process happened, we put out another alert. And we said, attention, attention, these materials are going to come off the National List. Are there alternatives?

And so, we did hear from members at that time, that those three materials were needed. And so we, I believe that the comments that we submitted, however, were to say just that, that we believed that there may be a need for these materials. And to please look to the comments received from industry on that matter.

So, I guess, you know, a couple of

things. And I appreciate you asking this question. Because yesterday I definitely did not appreciate hearing the Organic Trade Association's name brought up in public comment in what I felt was a disparaging manner, putting us on the record saying that the Trade Association's one comment somehow undermined the National Organic Standards process.

The process goes all the way to the end of rulemaking. People need to weigh in at both stages. We also petitioned to require natural flavors to be organic during that 2017 Sunset period. We also petitioned lignin sulfonate off the National List.

As far as I know Organic Trade Association members are the only ones that have ever petitioned anything off the National List. My mission is to see organic ingredients developed. The National is the entrepreneur's list of opportunity.

I will personally petition whey protein, Turkish bay leaves, inulin off the

National List if we find out there's an organic alternative. We've got to take it all the way to the end of the process.

And the proposed rulemaking process, as Jenny Tucker clarified yesterday, I think a question that came from Dan Seitz, that yes, it's the full opportunity. And I wish that I would have reached everybody during the NOSB process.

So, on konjac flour we heard from one person. And I'm going to wrap up right now. Those surveys are confidential, so I couldn't get additional information. But I don't feel confident that konjac flour should come off the National List. So, I'd like more time to do outreach. Thank you.

MR. CHAPMAN: And we've got Harriet and Francis.

MS. BEHAR: So, for inulin there's nothing on the Organic Integrity Database. For Turkish bay leaves, I can't remember if it's three or five operating just, you know, you can search the Organic Integrity Database and find

it.

And for whey protein concentrate there is three types. And two of them are available from multiple manufacturers, and from even more brokers that are probably getting it from those manufacturers. But there's one type that's not.

So, we're just a little bit struggling not so much with OTA, but somewhat with the NOP, that if something is on their Organic Integrity Database from multiple sources, why was it being declared as not commercially available?

MS. WYARD: I think the NOP is the right way to go with that question. Because like I said, our comments said that there are industry members out there that have voiced they still need these materials. And please look to the comments of others.

So, in terms of what informs the National Organic Programs process in making those determinations, based on comments, please ask them.

I think on the Turkish bay leaves it

was a matter of the type, just as you talked about, and an annotation fix may be, you know, would have been the appropriate route.

But again, that definitely is a question that needs to be posed to the program, in terms of what their process is for determining whether or not something should be removed or kept on when they're going through that final stage of the process.

MR. CHAPMAN: Again, I just want to know, inulin is listed several times in the OID. There's different types of inulin. And that specificity might not appear. But it's common for inulin to run under several names.

MS. BEHAR: Yes. I think it's --

MR. CHAPMAN: And inulin itself is on there.

MS. BEHAR: -- listed as a chicory, or yes.

MR. CHAPMAN: Yes.

MS. WYARD: Yes. This one I think was the oligofructose enriched, if my memory serves

me correctly.

MR. CHAPMAN: Yes. But that can also be legally labeled as just inulin.

MS. WYARD: Right.

MR. CHAPMAN: Francis.

MR. THICKE: Gwendolyn, do you think it's fair that OTA can go up to the NOP after the process and do this, and nobody else can? Or do you think we should all start going to OTA, I mean, going to the program after the NOSB process, and lobby them too? Do you think we should all do or --

MS. WYARD: We, everybody does get to do that process. This was an open, this was a proposed rule that the National Organic Program put out, and requested comments.

And we weighed in through the Federal Register, just as the same as everyone else. And you can go and look at the meeting records --

MR. THICKE: Okay.

MS. WYARD: And we're completely transparent about any communications we would

have with the program. We didn't lobby the program. We submitted comments to the Federal Register, just as you could, or anybody else in the room could have.

MR. THICKE: Okay.

MS. WYARD: Thank you. Thank you for that question.

MR. CHAPMAN: Thank you.

MS. WYARD: Thanks.

MR. CHAPMAN: Up next is Jenny Cruse, followed by Marisol Ovieto. Jenny, if you can start with your name and affiliation?

MS. CRUSE: I'm Jenny Cruse, coordinator of the Accredited Certifiers' Association. I'll be addressing the Crops Subcommittee proposal on strengthening the organic seed guidance, NOP 5029. I'll also briefly address the CACS proposal on excluded operations.

The ACA agrees on the importance of increased organic seed use in organic seed production systems. And support much of what has

been suggested in the proposal. We ask you to consider four key points as you continue conversation on this topic.

One, while the proposal seeks to steer all growers toward use of organic seed exclusively, we are concerned that this will not be possible for all growers in all years.

Two, if GMO contamination is cited as a specific reason to allow non organic seed use, a specific contamination threshold would be helpful. The ACA has attempted to develop contamination thresholds that could be consistently applied by certifiers, but at this point has concluded that this needs to come from the NOP.

Three, a comprehensive organic seed database established or supported by NOP would greatly assist in sourcing of organic seed, and related verification.

NOP's Integrity Database seems like a potential place to start for this, since so much of the information is already supplied to NOP.

But questions related to timing of search and verification would need to be looked at.

Four, the issue of non organic seed use mandated by buyers must be addressed. So, thank you for talking about this. We support the idea of requiring buyers to supply seed search documentation to growers.

But submit that handlers should also be held accountable in other ways. Handler SOPs should request a description of seed sourcing practices as applicable. And these practices and related documentation should be verified at inspection.

We thank you for considering this topic, look forward to further information on the subject.

On the subject of the excluded handlers in the supply chain, an ACA working group is looking at traceability in the supply chain.

And a major focus is on uncertified handlers, how we can ensure that the proper

documentation is maintained, and that inspectors are consistently applying the necessary level of scrutiny during the audit.

ACAs are in favor of clarifying language around this, and would welcome additional examples of who needs to be certified, and who can be excluded, as the proposal recommends.

The Organic Trade Association's comments provide additional examples, specifically around transloading activities at ports that the ACA would be interested in hearing about. Thank you for your work on this topic.

MR. CHAPMAN: Thank you. Harriet.

MS. BEHAR: On the strengthening the seed guidance, the regulatory change is to include improvement in sourcing and use of organic seed. And there seems to be from public commenters, and even ACA somewhat, that you need more clarification on what that improvement looks like.

MS. CRUSE: Well, I guess yes. What

does improvement look like? Is it, you know, the number of seeds that are used, the number of acres that are in production, you know, the amount of seed that's used?

I think there's probably some question related to that. But also, kind of to get at a little bit of what Kiki spoke about before. In cases where due to issues beyond the growers' control they're not able to use organic seed, or they're not able to increase in a specific year, you know, what is the allowance for that?

So, is increasing seed use assessed annually? Or is it assessed as, you know, a larger trend? I think those are important questions to look at.

MR. CHAPMAN: Thank you. Up next is Marisol Ovieto, followed by Andreas Kuenkel.

MS. OVIETO: Hi. My name is Marisol Ovieto. And I'm with the Northwest Hort Council out of Yakima, Washington. The Northwest Hort Council, or NHC, represents growers, packers, and shippers of apples, pears, and cherries, both

conventional and organic, in Idaho, Oregon and Washington, on regulatory issues of international and federal policy.

While the NHC submitted written comments on a number of issues before you today I am focusing my oral comments on the need to allow the continued use of chlorine materials in the National Organic Program.

Of particular interest to our growers and packers, this list includes calcium hypochlorite, chlorine dioxide, and sodium hypochlorite, materials used in crop and handling that are before the Board for consideration today.

In many ways the Pacific Northwest is the epicenter for organic pome fruit and cherry production in the United States. Washington State is the national leader in the production of organic apples, pears, and cherries.

Over seven million boxes or organic apples are now harvested from more than 14,000 acres, amounting to over 90 percent of the entire

organic apple crop in the U.S. There is also a significant amount of organic pears and cherries planted across the Pacific Northwest.

Chlorine based products are a critical tool for the tree fruit industry in the orchard, as well as in the packing house setting. They are vital to reducing the presence of naturally occurring pathogens that pose health hazards for consumers. And are essential for compliance with new requirements for sanitizing tools and equipment that will soon be implemented on all commercial tree fruit growers and packers, through the Food Safety Modernization Act, FSMA.

For example, calcium hypochlorite is used both in the orchard and the packing house as an algicide, disinfectant, and sanitizer. It is critical to reducing health human pathogens such as e coli, and listeria monocytogenes. And it is used to sterilize equipment, and used to control fire blight.

Sodium hypochlorite and sodium dioxide are also used in both the orchard and packing

house to sanitize irrigation systems, harvest containers, and pruning equipment.

It is also used in packing house water dump tanks as a disinfectant to reduce potential for cross contamination. Both are used by nearly 100 percent of our organic tree fruit growers in our region.

It is noteworthy that peracetic acid is currently the only other widely used sanitizer permissible under the NOP. And reliance on a single sanitizer could lead to resistance by pathogens.

On behalf of the growers and packer we represent the NHC strongly supports the continued use of these vital tools for equipment and water sanitation purposes.

We ask the Members of the Board to support the continued listing of chlorine products. They are of critical importance to the safe production of organic food, including tree fruit. Thank you.

MS. SWAFFAR: Thank you for your

comment. Any questions? Thank you.

MS. OVIETO: Thank you.

MS. SWAFFAR: Up next is Andreas. And on deck is Gerald Robertson. Andreas, please state your name and affiliation for the record.

MR. KUENKEL: My name is Andreas Kuenkel. I'm from BASF. And I will report on biodegradable mulch film, and our research to clarify environmental fate.

So, biodegradability is our central promise. And therefore, we invest a lot of energy to fundamentally understand the process, how these biodegradable polymers biodegrade in the lab and in the field.

Because the underlying process is always the culpability of microbes to metabolize the polymeric material, in this case the biodegradable mulch film, to CO2 biomass, energy, and water.

So, they are doing the same. But we will hopefully soon or later do with the polymers. And the question is, where does the

polymer carbon end up? And we have done intensive studies, together with the ETH of Zurich to follow up this fate of polymer.

So, what happens with the biodegradable mulch film? At first it's colonized by microbes. Then these microbes excrete enzymes, and biodegrade the polymer to smaller fragments. And these fragments are then metabolized to CO2, and also incorporated into the biomass.

And of course the interaction with the soil is important with respect to absorption and desorption. And with the ETH we have developed different methods to evaluate this. And I will show only two.

The first is the metabolizing to CO2. And you can see that within one year 95 percent of the biodegradable mulch film is converted to CO2. And the question is, where is the rest?

And the majority of the rest is in the biomass. And for the first time ever this can be shown with this specific method we developed with

ETH. So, we used these 13 labeled carbon, and then can follow-up where this labeled carbon is.

First, on the left side on the top you see a biodegradable mulch film colonized by different microorganisms, so with fungi and with bacteria. And on the right part of the picture you see the incorporation of the C searching carbon.

And red means that five percent of the carbon is labeled carbon, which means, as you can see in the fungi, there are roughly five percent of labeled carbon. This means this is the rest of the biodegradable mulch film.

The next question is, how viable are the microbes which are capable of biodegrading the mulch film? And without going into details here I can see we have isolate 400 microorganisms.

And you have to make it very simple. You are much more closer related phylogenetically to the trees outside than a lot of these microbes within each other.

So, with this work we have shown the fate of polymer, where the biodegradable mulch film is going. And this is shown for the first time, the complete mass balance. Thank you.

MR. CHAPMAN: Asa.

MR. BRADMAN: I just have a question. Do you have the mass of the material, the film, on a milligram per meter basis, or a, to put it in American terms, pounds per acre? I'm just trying to get a sense of the mass of material.

MR. KUENKEL: Yes. So, we are talking in the area, assuming that the mulch film is five, 15 micrometer. So, we are talking here something about 15 to 20 krem per square meter. And assuming that the relative soil is 20 centimeter.

So, we are talking here about 0.005 to 0.007 percent. So, that's neglectable. And this work shows that there is no polymer fragments accumulated in the soil.

MR. BRADMAN: And so, when you take that ratio of the soil you -- Assuming it's 20

centimeters deep, you're assuming the soil is 20 centimeters deep?

MR. KUENKEL: Yes. That's the relevant --

MR. BRADMAN: And you're using 2.6 grams per cubic centimeter for the mass of the soil?

MR. KUENKEL: The biofilm is put on the soil.

MR. BRADMAN: Right. Right.

MR. KUENKEL: And this is roughly in a range of 15 to 20 krems per square meter.

MR. BRADMAN: Yes. Got it. Okay. And the ratio that you gave is to the bulk soil weight, not the organic fraction?

MR. KUENKEL: Yes. This is then what is in the soil, what is the amount of mulch film in the soil. And this is biodegraded. And we see, for example, in Japan over the last 15 years mulch film is continuously used. And there is no evidence that the biodegradable mulch films, or any fragment, is accumulated there in the soil.

MR. BRADMAN: And what is the percentage of the film that's petroleum based?

MR. KUENKEL: So, today the product in the market contain a bio base content of ten to 20 percent. So, the majority is petroleum based.

MR. BRADMAN: Okay. Thank you.

MR. CHAPMAN: Briefly. Harriet, briefly.

MS. BEHAR: So, we did put out a tech, ask for a technical review. And we got it back. So, I'm sure you're aware that the National Organic Program has a guidance document that it needed to be 100 percent bio based.

And so, for us was the issue of how do we then counter that. Because we know that your product is not 100 percent bio based. And so, there were still quite a few studies out there that are not complete, because it's a fairly new product.

A lot of it had to do with soil, you know, how to fix soil life. Does it act like a fertility input? Does it cause one type of soil

microbe to grow more than another, because of which ones are eating whatever?

So, we, I mean, we're kind of a little bit in a holding pattern. Because we now have to work and counter what the NOP has said, in that they want it to be 100 percent bio based.

MR. CHAPMAN: Harriet, briefly.

MS. BEHAR: And then just recently bio based material was presented to us as a mulch film that is 100 percent bio based. So, we're still a little bit in a quandary what to do with this material. Just as information.

MR. KUENKEL: Can I give a comment to the topic of bio based?

MR. CHAPMAN: Very briefly.

MR. KUENKEL: I'd say we discussed this topic. And I think, which is absolutely correct, always in an intellectual context, also as a vision. And also with a logic that we say, okay, in nature all polymers are biodegradable and bio based.

And they are continuously recycled,

yes. Whereas, the majority of the fossil based is not, yes. But from a perspective of a microbe, yes, the microbe is not emotional. The microbe is only pure scientific driven.

And for the microbe in the soil the only question is, is it possible to crack the polymer backbone, and use the carbon for my metabolism?

And for the microbe it is not decisive if the carbon is bio based or fossil based. So, all the microbes, they will discuss bio based polyethylene, whereas, they like a fossil based PBAT, yes.

And the second comment is, so I'm now more or less 20 years in this business of bio based chemicals, yes. And I have here a picture of the major bio based monomers which are available.

And what I want to address here, besides this remark of the microbes is that to develop this processes, yes, at least 15 to 13 years have to be put into consideration, yes. So

it's not --

MR. CHAPMAN: Thank you.

MR. KUENKEL: -- possible from one day --

MR. CHAPMAN: Thank you. I'm going to have to --

MR. KUENKEL: -- to another to do that.

MR. CHAPMAN: I'm going to have to cut you off there.

MR. KUENKEL: Yes.

MR. CHAPMAN: But thank you for your comments. Thank you.

MR. KUENKEL: Okay.

MR. CHAPMAN: We're going to have to move on. Thank you. Gerald, I'm sorry to have you sit in the hot seat, and then put pause on it. But given the questions around the welfare of the Board and the public, we will be breaking for lunch.

Gerald, I'm sorry. You'll be the first one after lunch, if that works for you.

So, we have five commenters left on our list. And those five, Gerald Robertson, Tom Harding, David Will, Max Goldberg, and John Ashby will be all after lunch. And then we'll proceed into the crops agenda at that time.

We are going to break for lunch until 2 o'clock. So, it's only one hour. Please be back promptly. I'm looking at the Board Members when I say that.

(Whereupon, the above-entitled matter went off the record at 1:01 p.m. and resumed at 2:03 p.m.)

MR. CHAPMAN: Okay, we are going to get started here, if Board Members could take their seats.

Up first we have Gerald Robertson, followed by Tom Harding. Gerald, if you could start with your name and affiliation for the record.

MR. ROBERTSON: You guys are sure this time, right?

MR. CHAPMAN: I am.

MR. ROBERTSON: Okay. Good afternoon. My name is Gerry Robertson and I am the Director of Supply at Reiter Affiliated Companies based in Oxnard, California. We grow organic and conventional berries throughout the U.S. and Mexico, including an increasing amount of container production in all categories.

For the record, Reiter Affiliated Companies does not support the proposed recommendation for hydroponics and container growing. The reasons for this position have already been well-articulated by many of the farmers in our organization through written comments, as well as public testimony at the recent webinars. Rather, I wish to talk about the future.

I'm at the far end of a long and very satisfying career in production agriculture, the last 34 years of which have been spent in the Reiter organization. I spend little time looking back, however, but rather prefer to look optimistically ahead to what is coming,

especially in the world of food production.

In my job, I am privileged to spend time with many of our young organic farmers, most of whom are in their 20s and 30s and I am constantly impressed and inspired by their drive, their passion, and their commitment to make their world a better place.

In the next 30 to 40 years of their careers, they will see unimaginable changes in the way food is produced and many of those young farmers will be the drivers and implementers of that change. And change we must.

In most systems, there is this one truth: that which does not adapt and evolve, eventually dies or disappears. The young farmers of today will, in their lifetime, see the world population reach and exceed nine billion people and will be dealing with the uncertainties of an ever-changing climate. Providing sufficient amounts of healthy organic food to that world will require resources and technologies far beyond the basic soil-based systems that have

mostly sufficed for all of us up until now.

Every farmer here, from the small grower in Maine, with a few acres of vegetables, to the large industrial farmer in California with thousands of acres of berries, all face some common challenges. We deal with the weather. We fight ever-increasing costs. We must make the best use of the resources available to us. We need a ready marketplace for our products and we are all going into that same future together.

The NOSB today is in the position to help every organic farmer find his or her own best way to meet these challenges now and in the future by defining well thought out standards for production technologies such as containers that expand organic supply, that provide opportunities for the next generation of farmers, and that still adhere to the core principles of organic farming.

So take your time and get it right. The future will thank you.

Questions?

MR. CHAPMAN: Emily, then Asa.

MS. OAKLEY: So one of the few bright spots in U.S. agriculture is the young people who are coming to agriculture as a first career. And the ones that I am most familiar with are those who are going to rural economies and revitalizing them, usually in organic production systems and in the soil. I actually don't know anybody who has become a young farmer in the systems you are describing.

So just briefly, I started my farm on leased land on the urban fringe with $20,000 in startup capital. I am curious if the same thing could be done in the productions of some that you are describing with such a limited amount of capital.

MR. ROBERTSON: Yes, so our company is made up, primarily, of wholly-owned operations that have farm managers who are employed by the company and they manage the farms. They have come out of Cal Poly or Davis, or different places like that.

But we also have a part of our company that is partnerships and those partnerships are generally relationships with people like those managers or, in some cases, even the farm workers themselves, who have risen up to a level where they have become really quite proficient.

And when people save their money and make a stake or put together a stake to get involved in something, we partner with that. And that might start with a ten-acre operation and some of those partnerships have grown to three or four hundred-acre operations. So that is a very good opportunity within our company. There is a path there for people to become their own farmer or a partner with us.

MR. CHAPMAN: Asa?

MR. BRADMAN: Yes, I have really two questions. The first is how nutrients are cycled and whether container materials, clippings from crops, are they composted, recycled? Do they go back into the containers or the soil in some way?

There were some questions earlier

about ground cover and their row crops and things like that or cover crops between the rows.

And then my last question would be related to labeling that I am starting to ask everyone. Would they be comfortable with a hydroponic container label or similar -- some similar form of that?

MR. ROBERTSON: Yes. Okay, so as I think you have heard from other presenters, virtually all of our crops in containers, certainly in the organic part are perennial crops. We are pruning them every year, a couple times a year, blackberries, raspberries, whatever. So those prunings are going to generally go into the soil, which we keep the middles between our plantings open -- our new practice is that.

And then pots, themselves, when we are done with that material that is in those pots, we compost all of that and then recycle it back into our system. So in several of our areas, we are starting to develop pretty extensive vermiculture

for this purpose so that we can recycle, not only recycle materials but then use that material, itself, both directly or to make a tea from it. It becomes part of our nutrition process.

With respect to the mulches, when we first were doing this type of agriculture, we were covering everything with those mulches that you may have seen, the black plastic shade cloth. But gradually, as our techniques are evolving, we are realizing that we are better off to just have the mulch right under the pots and then leave the middles open for a variety of reasons and part of that is to be able to reincorporate the material that we don't want to remove and compost.

And then your question about labeling, I'm not sure on that myself. I would be okay with the label, a specific label but I would rather see standards that are clear enough, whether everybody accepts them or not, but are clear enough that you either are organic or you are not. So I fear a little bit of confusion in that but I would be okay with it, personally.

MR. CHAPMAN: Dave. Then we'll cut it off there. Dave.

MR. MORTENSEN: Yes, I was wondering could you give us a sense for what the preceding land use was before putting into container production. Were these fields that were agriculturally managed or some other use?

MR. ROBERTSON: Okay. So there is a wide variety of answers to that but, in some cases, the fields were previous organically certified fields that became unviable because of contamination of soil pathogens that you can't deal with in organic. In our conventional systems, we would fumigate fields like that.

So in some cases, we have fields that can no longer support it in the soil but we can support a container on top of that.

In other cases, it is going to be less favorable soil. So in Ventura County we have a wide range of soils from the perfect sand that you would like to have or sandy loam to really floodplain clay, which is really, really hard for

some of our crops, particularly blueberries. So we will try and find the least suitable -- soils that are the least suitable for soil farming and put our container operations there.

MR. MORTENSEN: Thanks.

MR. CHAPMAN: Thank you.

MR. ROBERTSON: Thanks.

MR. CHAPMAN: Up next is Tom Harding followed by David Will.

MR. HARDING: Good afternoon. My name is Tom Harding and I represent Green Ag Supply, which is the petitioner for Natural Fatty Alcohols.

First of all, I want to say thank you to the NOSB and to the NOP and for all of your hard work. I know you have heard that a lot but you deserve it. I thank you very much for that.

As per my earlier request to the NOSB and to the NOP, and with the cooperation of Tom and with my good doctor friend over there, Mr. Thicke, we had made a request that we formally requested the NOSB move the vote on natural fatty

alcohols to the spring 2018 NOSB meeting.

Why? Because when we were notified about our petition, that it would be up for a formal vote, that very day we went to get on the public comment list, which was already full and had a waiting list. And everybody was very cooperative. It's just not anyone's fault. We're not blaming anyone but the circumstances that happened as a result of that is none of our growers will be heard from before this is voted material.

Why we requested this because we want our producers to be here. We want you to hear from them firsthand. Many of them are generational farmers who are not only growing tobacco, to be very frank, but also other commercial cash crops that are certified organic, requiring all of the requirements that organic has been. Most of these growers have been certified since the implementation of the rule.

So without having our producers here, the extension service, particularly from North

Carolina State and other places, not hearing from them, we thought the best thing versus withdrawal, which we found that under some rule we didn't know about but we do now, that we would withdraw the petition and move it forward the next time but that's not possible because the rule says that, I understand it is an NOSB rule, that if the subcommittee has voted on material that, in fact, it has to go before the whole Board. And Tom gave me that information and I really appreciate it.

We didn't know about that or we might have acted differently earlier.

But all of that said and done, it is really important for us that we do have our producers here, that they are able to talk, that you are able to hear from farmers with great experiences and with a lot of the scientific data that we have to support this particular material, that you would be able to ask difficult questions.

We have a very good TAP report,

overall, from the standpoint of meeting all of the criteria and, therefore, we felt it was really important to request it be moved.

Our other choices are not very good. Now, we are prepared to go the whole distance on this material because it is so important, so vitally important to our producers.

A couple of points that are really important before I close out and that is, number one, the subcommittee, who did a really good job in this thing -- thank you very much.

MR. CHAPMAN: Thank you, Tom.

Questions? Ashley, Jesse, Steve, and Harriet. We will stop it there. Ashley.

MS. SWAFFAR: Thank you, Tom. So I understand why you want to take it back because you didn't have farmers sign up for in-person public comment. But why did you not have any farmers submit written public comments or you, yourself submit written public comments? The one you submitted was just reiterating the point that you wanted to bring it back -- you wanted us to

bring it back to subcommittee. We do treat comments equal, as written and/or in-person.

So I would like to know why you felt like you --

MR. HARDING: Well, at the time that this happened, it was a deadline. We knew that already the public comment list was filled. Most of our farmers were in the field with harvesting. They were not going to be prepared to come unless we really pushed the whole thing hard and most of them pushed back and said look, man we're really busy right now.

The other thing is from the scientific standpoint, we have supplied a lot of data already. We felt very strongly -- and your point is a really good one actually -- that it was important that they be before the whole Board and that you hear from them firsthand with not only why are they doing what they are doing but why they need this particular material to do what they are doing and to successfully meet their quality requirements.

The way this product is sold is sold on the basis of quality. And this grossly affects, in a positive way, this material, the quality of the finished product.

MR. CHAPMAN: Thank you, Tom.

Jesse.

MR. BUIE: Tom, in your petition, you requested that the fatty alcohol be used as sucker control on organic crops.

MR. HARDING: Correct.

MR. BUIE: But the TR only discussed the use of this product on tobacco. Why was that?

MR. HARDING: Well, we submitted other crops. We submitted nightshades. We submitted also this product is used a lot for grafting, particularly innovative grafting scheme, and we have it ready to submit for EPA for vegetable crops, particularly nightshades, but we were told that because it wasn't already EPA approved that we couldn't submit those other crop data.

The other thing is that we have been

contacted since then with personal care, where there is a number of people interested in natural fatty alcohols to use in personal care.

MR. BUIE: Yes, but the EPA has approved it only for --

MR. HARDING: At this point, only on tobacco.

MR. BUIE: Right, right.

MR. CHAPMAN: Steve.

MR. ELA: I'm just going to reiterate what Ashley said. It puzzles me why -- I mean I get we're all busy but it seems like at a minimum you should have submitted written comments. You don't need to answer again but it puzzles me.

MR. HARDING: I am going to answer it again to this point. We felt very strongly, and because of them being very busy, that personally being able to be before this Board to talk, and you hear them -- I'm going to repeat myself -- it was really important to them, really important to the growers because win or lose, this is going to have a huge economic impact downstream on our

farmers and you need to hear that from them and not from me.

MR. CHAPMAN: Harriet.

MS. BEHAR: So, the Crop Subcommittee meets a lot. So I am just going to try and make sure that I have this correct. So I'm going to look at my fellow subcommittee members.

We received the petition. It was for all crops. When we got our technical review back, it was for tobacco because we were told that the EPA has only approved it for tobacco.

We then went back to you and said would you like to switch this to just tobacco because we can't review something that is not approved by the EPA for other uses. And you said no, we want to come back; you want to keep it at all crops.

MR. HARDING: No, I didn't say that. No, we didn't say that.

We were told that the data we had submitted, which was a file that thick on other crops, because those other crops were not EPA

approved, we couldn't do them. So we just pulled them back and said it is going to stand for tobacco.

MS. BEHAR: No, the petition. We asked you about switching what you wanted to be petitioned for.

MR. HARDING: Yes.

MS. BEHAR: And you decided you wanted to keep it at -- we asked you do you want to switch it to tobacco only or to have it be all crops. Didn't we ask him that?

MR. HARDING: I don't ever remember that point. I don't remember that point.

MS. BEHAR: Jesse?

MR. BUIE: Yes.

MR. HARDING: Well, who sent it to us?

MR. BUIE: Dr. Brines, probably.

MS. BEHAR: Well, I'm just trying to --

MR. HARDING: But anyway, Harriet, the point is --

MS. BEHAR: So we were kind of left --

but see we felt like we could not review a petition for all crops.

MR. HARDING: Agreed.

MS. BEHAR: Because even if you gave us material, because we couldn't get a TR for such a petition because we couldn't get a TR for something that it's not approved for.

So there was quite a bit of back and forth with you, the petitioner. I'm just trying to get that straight.

MR. HARDING: Let me just say this. I am not familiar with a back and forth. I do know that we were told that we could not submit, and rightfully so, anything that did not have already an EPA approval. So we withdrew those and resubmitted the petition, which then stood for only tobacco.

MR. CHAPMAN: I'm going to call on Emily in a second.

First, Dr. Brines, there was a question about whether we had a communication with the petitioner. To your recollection, can

you speak?

DR. BRINES: Yes, thank you. I don't have any record of official requests from the Crops Subcommittee to the Petitioner asking specifically to limit the scope of the petition.

I will say that when we did review the petition, we only accept petitions for uses that would be allowed for pesticidal uses for EPA.

So you know they can ask for whatever listing that they want. The Board can't approve uses that would not comply with the EPA label. But certainly, if they were to list fatty alcohols, for example, without an annotation, that would only be allowed for uses that are EPA permitted. You couldn't use that on other crops because there are no EPA-labeled uses at this time.

MR. HARDING: And that was clear to us.

MR. CHAPMAN: So Emily, and then we will cut if off there.

MS. OAKLEY: Just a point of

clarification that I think the subcommittee did get information from the NOP that we could only look at tobacco because it was the only approved use and I just want to make it clear that during our deliberations and discussions during subcommittee calls, it was just for tobacco use. And I don't think it affects the outcome of our decision at that time.

MR. HARDING: Well, I do hope you will grant us our request. Thank you very much.

MR. CHAPMAN: Thank you, Tom.

Up next is David Will, followed by Max Goldberg.

MR. WILL: Good afternoon. My name is David Will and I am the General Manager of Chino Valley Ranchers, a Southern California egg producer. I am Secretary of the Organic Egg Farmers of America and I am the Chairman of the Methionine Task Force, which is what my comments are on today.

It has been a year since we have brought methionine to discuss with you. And one

of our commitments several years to the Board was that any updates or significant strides or information we felt was relevant we would pass to you guys. So this is our 2017 presentation.

The Methionine Task Force is a collection of some of the larger organic egg producers in the country. We are also a collection of more than 300 independent family-owned and operated individual certificate holders and some of the smaller organic pasture-claimed producers within the country and also some of the broilers.

We represent about 70 percent of the broiler industry and a large number, more than 400 plus certificate holders in the organic egg segment.

In 2017 we actually formalized our group so that we could self-tax and form some research and that's what I wanted to talk to you about briefly.

We are currently funding a three-year study at the University of California at Davis on

the production and feeding of black soldier fly larvae in organic laying hens. The study is working on the production of the larvae, which is the best medium to raise the larvae. We found that changing what the medium is that they are growing in actually changes their methionine content, what's the best moisture and the best temperature in order to grow the larvae, and then the beauty of this is the byproduct of growing the larvae. We actually are getting a very nice fertilizer of it as well.

All of the birds are in four groups. They are on an outdoor-based system. There are two control groups that were given synthetic methionine at two days of age and then two groups that are fed a black soldier fly larvae at a 20 percent inclusion rate and have had zero synthetic methionine since their growth.

The next slide, which I hope -- I'm going to hit the wrong button -- this is actually one of four pens that the birds are in. You can see they have rotation available to them. It is

completely based outdoors on a grass basis.

And the next slide is the organic feed that they are getting with a 20 percent of black soldier fly larvae.

We just wanted to give you some updates on this. Our first major hurdle is that we are not AFFCO approved in the United States for feeding black soldier flies to laying hens or broilers, however, it is approved in Canada. We don't have FDA approval yet and we are feeding at a 20 percent inclusion rate. We are hoping to test it at 15 and 10 percent to see if that works as well. Our other question is are organic insects ever going to exist.

And then our last one is the supply issue. Just a quick number. The USDA says there is 14 million laying hens in the United States, 100 hens eat 25 pounds of feed per day. That is say 3.5 million pounds of organic feed per day at a 20 percent inclusion rate, that is 700,000 pounds of black soldier fly larvae we would have to produce a day but they are 75 percent

moisture. That would mean we would need 2.8 million pounds per day of black soldier fly larvae just for laying hens compared to 3500 pounds of methionine.

MR. CHAPMAN: Ashley?

MS. BRIONES: So David I just want to say thank you for the Task Force bringing us an update each year. I think the Board got the -- you know the industry received our message of we are wanting an alternative to synthetic methionine and we appreciate your work on looking into that.

MR. WILL: We're happy to do it.

MR. CHAPMAN: Harriet?

MS. BEHAR: So a while back I know I looked, there is an ATTRA publication that has various feedstocks that are high in methionine. And I think nonfat dry milk is quite high in methionine and that is quite readily available as an organic. Is there a problem with it as far as going bad or caking up or --

MR. WILL: It's part the balancing of

lysine and methionine.

MS. BEHAR: Okay.

MR. WILL: You just can't look at one. You have got to look at the entire spectrum.

MS. BEHAR: And so there is not enough lysine in the nonfat dry milk?

MR. WILL: We're going to look into that. That is down the list. Our first one was Brazil nuts was our favorite go-to but there is a major selenium problem that we would literally -- it would work great but it would kill the chickens. So we had to kind of decide that wasn't going to work.

MS. BEHAR: I think that probably doesn't work that great.

MR. WILL: A major hurdle.

But we are going down the list and we have several things. This was insects was one that became available and quite interesting to us, two-fold, because of the byproduct we get out of the fertilizer and the fact that they are very easy to breed.

MS. BEHAR: And then in your list of things to do, is there possibly two or three items that you would try to pull together? Because it does seem that it may be the best source but sourcing it might be quite difficult.

MR. WILL: Well, actually there is a company down in Irwindale that we are going out to meet with that is actually doing a large-scale project. They have two locations in the U.S. and they are actually doing large-scale black soldier fly. The beauty of this fly is it's not a pest that would bother humans. Once it hatches, it doesn't eat. When it turns from the larvae to the fly state, all it does is have sex and die, kind of like a fruit fly. That's a good thing to do, apparently, but they don't land on food. They don't eat, they don't contaminate. So we are hoping we have some luck with FDA with that one. And we are not growing them on manure, which was our other major concern of bringing pathogens in.

MR. CHAPMAN: If there was some free

beer in that, that sounds like a pretty good life cycle.

Sue, and then I have a question. We'll end it there. Sue.

MS. BAIRD: I know there has been some work on genetics of high-lysine corn.

MR. WILL: Yes, we funded that study.

MS. BAIRD: From Arkansas, yes. How is that working out?

MR. WILL: Well, the wild pigs liked it more than anything else. So, they destroyed our seed crop. The problem with it was it had a significantly lower yield and a higher cost to produce. So it was very hard to convince a farmer to work just as hard to grow 30 percent less, where he couldn't get 40 percent more for it.

So I know that is still kind of being kicked around out of the Midwest, up in that group there. We have talked to them a couple times but we just didn't see the gain on it. And again, it was the balancing of the lysine and the

methionine, and the cystine. It just wasn't the perfect product for us.

And actually, insects look like they may be a little more in line with our balancing.

That's something we can look at too, but they weren't at the top of the list for insect. Actually, number one is dung beetles but the word dung we figured we'd never get by FDA.

Yes, good material. You have got to use it.

MR. CHAPMAN: One last question. Where are you in the FDA approval process?

MR. WILL: We've talked to them softly. We know that in California we've talked all the people that matter there. We are quite confident that we could get an emergency order to allow us to use it in California as a limited test on a more commercial-sized flock. Our first problem is sourcing. Even if you take that and do 20,000 birds, it is several hundred pounds a day or a week of black soldier fly larvae that have to be freeze dried introduced.

And I will tell you I actually did taste the eggs. Even with the 20 percent inclusion rate, we actually did not have a flavor profile problem. And all the eggs are being used on UC Davis' campus. So hey, it's good for Berkeley.

MR. CHAPMAN: So what comes first, the FDA approval or the scale up?

MR. WILL: It's both. Honestly, it has to be two-pronged. We have to be able to prove that we can make it and what they are going to grow on to take it to FDA. Their biggest concern is the medium it grows on and what potential contamination can come out of that. The last thing you want to have is the news that we just released 140 million black soldier fly into the environment because they hatched over the weekend.

So, we have to go through that whole thing. And then AFFCO has obviously got to be first. The fact that it's now available in Canada is beneficial to us but, again, that is

only in broilers.

MR. CHAPMAN: Thank you.

MR. WILL: Vote OLPP, please. We need that. Please.

MR. CHAPMAN: Thank you.

Up next is Max Goldberg and on deck is John Ashby.

Max, you can start with your name and affiliation.

MR. GOLDBERG: Good afternoon. Max Goldberg from Organic Insider and Living Maxwell.

Two things I would like to discuss today. First, in regards to the hydroponics container growing system, I believe the most important question that you all need to ask yourself is whether certifiers can in fact inspect these systems, not what a container growing system is.

According to Bart Hall-Beyer, a soil chemist, a professional agronomist who has, over the years, inspected nearly a million acres in seven countries for organic certification, he

says that hydroponics is utterly impossible to inspect for organic certification. It would be completely incompatible with organic certification, absent a full-time on-site observer at each and every site.

If inspecting these operations is impossible, then the Board ought to put all these systems together, hydroponics, aeroponics, aquaponics, container-growing systems into one and decide if they all are in violation of OFPA.

That is the question that I am asking the NOSB to consider, whether organic certifiers can in fact certify these systems.

Second, Next 7's petition against hydroponics is over 100,000. These are some that people have literally hand-signed. These are not clicked with their mouse signing an e-petition. They have signed these personally and the majority of the 100,000 are in the last 48 hours.

The second thing I want to bring up is we are spending so much time on fraudulent organic grains from abroad, which is a massive

problem and starting to be addressed, but I think that the Board needs to pay attention what happened to Aurora, which has been completely swept under the rug. And I ask all the members to demand an answer from the USDA about what happened to Aurora.

We just heard that the case was closed; Washington posted an investigation; the milk was comparable to conventional milk. With aerial photos, satellite photos, there were clearly red flags here and all we hear is that the investigation was closed. We have not gotten an explanation about anything.

And I think it is up to all the NOSB members to demand an investigation. And the answer we got yesterday from the NOP here was, frankly, inadequate, insulting, and very damaging to the integrity of the organic brand.

Consumers rely on transparency and we're not getting any transparency on organic. And there are a lot of CEOs who are watching what's taking place at this meeting and they are

going to hear that unless things get clarified about what happened with organic, the lack of transparency is very, very high. And if NOSB members truly care about organic and maintaining the integrity of organic, I urge you to give us transparency about what happened with Aurora because we are worrying about fraud from abroad. We need to understand what is taking place in our own country.

MR. CHAPMAN: Thank you, Max. Questions for Max?

Thank you very much.

Up next is John Ashby. You will notice, again, no one is on deck. So, John, you will be closing out public comment today.

John, if you can start with your name and affiliation.

MR. ASHBY: I'm John Ashby speaking on behalf of the No on Discussion Documents and Yes on Containers, All of Them Committee, which so far is me.

The only way James Madison was able to

get enough signatures for the Constitution was to promise to produce the accompanying Bill of Rights immediately after signing the Constitution.

To wit: our belated OFPA Bill of Rights. First Amendment: NOSB shall make no law respecting a disestablishment of organic, or prohibiting the legal regulated exercise thereof, or abridging the freedom of organic speech, or of the press, or the right of the organic community peaceably to assemble and drink free wine from Phil -- ditto to CCOF's comments, by the way -- and to petition the NOSB for a redress of grievances.

Second Amendment: A well-regulated enforcement being necessary to the security of true organics, the right of the people to keep and bear legal weapons against infractions shall not be infringed.

We only have two minutes, as you are abridging my free speech by only allowing me three minutes.

Regarding no disestablishment of organics, these containers are legally organic. This is why it will require rulemaking at least to prohibit them. I'm not so sure it might not require an OFPA change.

The discussion documents strike me as so contradictory it seems like we are debating how much sand is in the water. It's the dissolved stuff that feeds the plants.

And the carve-outs make no sense to me at all. If you want to eliminate any of the containers, then out go ornamentals, mushrooms, herbs, the future, trees, and more by the same logic. I don't see any option to all or nothing.

The argument that if you take the nutrients out of the water and hydroponic plants die is you take the nutrients out of the water in in-soil plants and they die. In fact, hydroponic tomatoes could be argued as the most soil-friendly organic of any. The only outputs are organic tomatoes after massively efficient utilization of resources and organic compost,

which can go on other soil, most often from a warehouse that otherwise would not grow food.

Ditto, again, to CCOF arguments and realize that we do not have free speech. Many are intimidated and not speaking out against the loudest.

We need all these containers to remain within the organic fold, period.

P.S. Enforcement is a huge problem that has not been sufficiently addressed. I know we are starting on it. We are not even close. When a Washington Post reporter can figure out all that imported grain was not organic but the certifier providing the document, who theoretically has access to all their paperwork, could not, this is a problem. If you can't do the audit trail, you should not be certifying it.

P.S. Natural is a substitute -- natural is just a complete and utter disaster. No one in their right mind would put natural on a product. We'll get sued. And that's funny but it's true.

MR. CHAPMAN: That's it?

MR. ASHBY: That was my barking dogs.

MR. CHAPMAN: You made it before the buzzer.

Any questions? Ashley?

MS. SWAFFAR: Why didn't we get a good poem or a haiku? I mean I just feel like I'm -- the Bill of Rights, I understand.

MR. ASHBY: I'm in a grouchy mood about this. This is the future you know. And it's not going to reduce one piece of food coming out of these containers. It's not going to reduce one.

But the idea that -- I mean what killed me in reading this that I didn't even mention is that because the percentage is small well, then it's okay to disallow this. That's ridiculous. It either is or isn't. And the carve-outs make no sense whatsoever.

And right now it is. And I think what we need to do is keep it within the fold and develop the standards so that it is not

everyone's going to like it and don't be telling people who are not against containers that they are against soil. I am not against soil. I'm working one of the biggest transition programs right now in our company. It's a real pain the neck, very difficult to do. But because somebody is for containers does not mean they are against soil.

MR. CHAPMAN: Thank you, John.

MR. ASHBY: Thank you.

MR. CHAPMAN: I will revise my last comments to John and say that's it. We are done with public comments. And we will now be moving on to the subcommittee portion of the agenda.

First up today is the Crops Subcommittee and I will be handing it over to Francis Thicke, the chair.

DR. THICKE: Thank you, Tom.

To begin with, we have a number of 2019 sunsets to review and we will start out that we will, as Michelle reminded me, first we will have Lisa Brines give us -- the first one up is

chlorine materials, calcium hypochlorite, chlorine dioxide, and sodium hypochlorite. And Lisa is going to give us the details.

DR. BRINES: Yes, thank you, Francis.

I will read the first three chlorine materials into the record. The Board wanted to take those as a group.

So we start the Sunset 2019 Review with Section 205.601 of the National List as synthetic substances allowed for use in organic crop production. And the first three materials are under paragraph (a) as algaecide, disinfectants, and sanitizer, including irrigation system cleaning. Chlorine materials for pre-harvest use, residual chlorine levels in the water in direct contact or as water from cleaning irrigation systems applied to soil must not exceed the maximum residual disinfectant limit under the Safe Drinking Water Act, except that chlorine products may be used in edible sprout production according to EPA label directions.

And the three materials are (i) calcium hypochlorite, (ii) chlorine dioxide; and (iii) sodium hypochlorite.

And the most recent technical report for these materials was completed in 2011.

Thanks.

DR. THICKE: Thank you, Lisa. This material, I am the lead on, all three of them actually. So what we are going to do is we are going to summarize all three and then we are going to vote individually on them.

These chlorine sanitizers are all considered to be very effective sanitizers that are used in crops, in livestock, and in handling but we are only dealing with them in crops right now. However, they can also be harmful to human health and environment. They are caustic and can be a concern for occupational exposure. They can cause eye and skin injury. Ingestion can cause gastrointestinal irritation and corrosive injuries to mouth, throat, esophagus, and stomach.

The comments, a lot of commenters said they need them, they use them for a variety of things, for cleaning tools, for equipment, and workstation cleaning, maintenance of irrigation equipment, and so on. So the comments were overwhelmingly in favor of keeping them on the list.

However, we also have comments that have come in saying that we need to review these sanitizers. As we have talked about before, sanitizers in general, and disinfectants, and cleansers, should be a comprehensive review relative to safety, and legal requirements, and so on.

And as Harriet mentioned earlier, I think yesterday, we put in a request to the NOP to get that on our work agenda.

So, are there any questions on the chlorine products?

I guess not. The, Tom, we can go to vote.

MR. CHAPMAN: Okay. So as a reminder

to the Board, this is a sunset material. Sunset materials come as motions to remove. So a yes vote is a vote to remove. A no vote is a vote to retain on the list or to not recommend removal.

So this motion comes from Francis, seconded by Emily from the subcommittee. And we will start the voting with the -- this is for all three at once and I will read the motion in a fraction of a second.

The motion is a motion to remove calcium hypochlorite -- I should read all three. Is that correct? Motion to remove chlorine materials calcium hypochlorite, chlorine dioxide, and sodium hypochlorite.

Again, it came from Francis and it was seconded by Emily. And we will start the -- a yes vote is to remove; a no vote is to retain. And will start the voting with A-Dae.

DR. THICKE: Point of order, Tom. They are three separate.

MR. CHAPMAN: They are three separate motions?

DR. THICKE: Yes. Do we want to vote separately? They actually have the same motion made by the same person and the same second.

MR. CHAPMAN: Yes, we should handle them three different times, if it came as three separate motions, unfortunately.

So we will start with the first one, which is the motion to remove calcium hypochlorite. It came from -- moved by Francis, seconded by Emily. And the voting will start with A-Dae.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MR. CHAPMAN: No.

Zero yes, 15 no and the motion fails.

The second motion is a motion to remove chlorine dioxide. It came from Francis, seconded by Emily.

The voting will start with Lisa. A yes vote is to remove; a no vote is to retain.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MR. CHAPMAN: The chair votes no.

Zero yes, 15 no. The motion fails.

Motion to remove sodium hypochlorite made by Francis, seconded by Emily.

Voting will start with Asa. A yes vote is to remove; a no vote is to retain.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. CHAPMAN: No.

Zero yes, 15 no. The motion fails.

DR. THICKE: So the next item up is herbicides, soap-based and Sue was the lead on that one.

DR. BRINES: And I will go ahead and introduce it first.

So we're moving on to paragraph (b), same Section 205.601. As herbicides, weed barriers, as applicable. And the listing is (1) Herbicides, soap-based -- for use in the farmstead maintenance (roadways, ditches, right of ways, building perimeters) and ornamental crops.

And the most recent technical report was completed in 2015. Thank you.

MS. BAIRD: Thank you. Soap-based herbicides are generally comprised of fatty acid components. They are produced, the fatty acids are produced through a practice process known as saponification. This came up. We had 46 comments on the removal of herbicidal soaps; 34

of those were in favor of remaining on the list. There were 12 that were concerned because of perhaps environmental issues.

Technical review did show that there could be some damage issues to some aquatic animals but a recent EPA statement showed that they didn't see that would happen because there was very low impact of runoffs into the water systems.

So, we made a motion -- I made a motion not to list, correct?

DR. THICKE: Well, is there any discussion? Emily.

MS. OAKLEY: I have reservations about this material for the reasons stated in the TR in that it can also be potentially toxic to soil-dwelling organisms. I also know that you are supposed to apply not near waterways but I think that there is a potential for that to sometimes happen. So, I am conflicted on this product.

DR. THICKE: I actually am also concerned. Reading the comments, everybody who

said they wanted them that I saw said that they are used to them but I never got a real reason. I mean it didn't even seem like they are using them.

I don't know why you can't just mow grass, why you have to use a herbicide. I've never seen anybody use it around -- I mean it's around roadways, around buildings and such and that is kind of where people mow. Anybody have any -- am I wrong about that?

I mean is there a need to put a herbicide on the farmstead?

Yes, Harriet.

MS. BEHAR: Well, I don't know that I've seen people use this one. I've seen them use the citric acid-based herbicide around bins, where it is fairly difficult to get up close and maybe they have gravel there and the grass is growing up and they are trying to keep rodent habitat down. So they like to keep it clean right around the base of the bin.

DR. THICKE: Scott?

MR. RICE: Yes, we've heard from the growers that we certify. They use this. It is a tool in their toolbox and I would advocate continued support with recognition that there is continued oversight at inspection and by certifiers to ensure that this is being used or include inspections that this is being used appropriately and to label use.

DR. THICKE: Any other comments? Ashley.

MS. SWAFFAR: Yes, so this is not on my materials input list but I have actually inquired about putting one product like this on my materials input list for like my seed starting greenhouse is gravel on the bottom and it's like Bermuda grass central. So that is kind of the scenario I would want to use it in, is spraying it on the gravel underneath stuff.

DR. THICKE: You wouldn't want mow on the gravel you said?

MS. SWAFFAR: It's gravel. So I have like plastic down and then gravel on top. So you

can't mow --

DR. THICKE: Oh, okay.

MS. SWAFFAR: -- inside my little greenhouse.

So that is the scenario I would use something like this on.

DR. THICKE: Inside. You said inside the greenhouse?

MS. SWAFFAR: Yes.

DR. THICKE: Okay. Steve.

MR. ELA: We don't use it personally but I can certainly see it's not -- like in the West, it's not always that easy to mow, especially if you have rocky ground.

And with FSMA now and gaps, I mean if you have a packing facility, you are required to have, for rodent control around the edges of those buildings, you know keep the weeds down and such. So I can see where it could be expedient.

I mean you can go out and weed whack and spend a lot of time but it takes a lot of time and it's hard to stay on top of. So I can

see a use for it.

DR. THICKE: Okay, Sue.

MS. BAIRD: Yes, and I do do a lot of inspections in the West and they do have problems a lot of times around the roadways. They are pretty steep. It would be really pretty difficult for them to mow without having tractor incidences. They really feel like it's important to have.

DR. THICKE: Dan?

DR. SEITZ: Question for Scott. Are there equivalent substances for control, weed control?

MR. RICE: There is always cultural practices but, as fellow Board members have just expressed, it's a lot of manual removal.

DR. SEITZ: But no other equivalent substances.

DR. THICKE: Harriet.

MS. BEHAR: Yes, there is a citric acetic -- citric acid and acetic acid. And there is environmental issues there, too. And that's

the one I see more often in the Midwest.

DR. THICKE: Tom, did you have your hand up? Oh, okay. Anybody else?

Okay, I guess we're ready to vote, then, Tom.

MR. CHAPMAN: Okay, so the motion is to remove soap-based herbicides from 205.601(b). The motion comes from Sue Baird and was seconded by Jesse Buie.

Voting will start with Joelle. A yes vote is to remove; a no vote is to retain.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: Abstain.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MR. CHAPMAN: The chair votes no.

Zero yes, 14 no, one abstention. The motion fails.

DR. THICKE: The next item up is biodegradable, biobased mulch film. Harriet -- and Lisa first.

DR. BRINES: All right. Thank you. We're continuing on under paragraph (b) of 205.601 as herbicides, weed barriers, as applicable: (ii) mulches; (iii) biodegradable biobased mulch film, as defined in Section 205.2 must be produced without organisms or feedstock derived from excluded methods.

This is the substance's first sunset review and technical reports were completed in 2012, 2015, and 2016. Thanks.

DR. THICKE: Harriet.

MS. BEHAR: Okay, so numerous certifiers, and growers, and many others have

supported the relisting as it is, which is the way the subcommittee voted, in a hope that we will continue to monitor ongoing research. Our most recent technical review asked some questions that could not be answered because the research was not yet complete, which included questions about long-term use and effect on soil life. And since it's a fairly new product, we just didn't have that long-term research, so if someone was using that mulch and it was biodegrading in the same place year after year.

There were some public interest groups that felt that since there is no product that currently meets the standard, we should just remove it.

One company presented on this product during the public comment webinar that they have a 100 percent biobased mulch but that going through the testing in order to meet the annotation was cost prohibitive, in order to demonstrate the biodegradability and doing proposed on-farm field testing could possibly be

an alternative to that testing where they have to pay for that approval that is in the annotation.

The Crops Subcommittee intends to continue monitoring the possibility of this 100 percent biobased product. We just found out about it. So because we know that finding a product that would be acceptable either under the current annotation or by changing the annotation could be useful to many organic specialty crop producers.

Of course right now when they use a plastic mulch, they have to put down and pick it up. And there are environmental concerns, too, of taking it to the landfill and that sort of thing.

So the Crops Subcommittee recommended to renew this material with no change to the annotation and will keep monitoring as things continue to -- we learn more from research and possibly other products.

And the vote was no to remove and one absent -- eight no to remove.

DR. THICKE: Eight no. Okay.

Questions? Emily.

MS. OAKLEY: I remember we discussed in the subcommittee whether or not we should remove this listing and you said that we should keep it because it also includes Kraft paper. Is that still accurate?

MS. BEHAR: Yes, so there is a product that is approved by OMRI that is a paper product. So there is actually a 100 percent biobased mulch. It's not really a film. It's paper.

DR. THICKE: Other comments, questions?

MR. BRADMAN: Just I think we also talked about possibly revisiting it at the spring meeting. I wasn't sure. Did we put a time frame on when we would revisit this issue, in terms of the other kinds of biodegradable mulches?

MS. BEHAR: I think the Technical Review said it was at least two more years until the testing would be done to give us the answers to our questions, especially concerning long-term

use. Because if this product is degrading into the soil, we wanted to know what if someone used it for five or ten years in the same place; is there any kind of impact there?

DR. THICKE: Any other comments?

I guess we're ready to vote, Tom.

MR. CHAPMAN: Okay. The motion is to remove biodegradable, biobased mulch film as defined in 205.2. It must be produced -- it's cut off. It must be produced without organisms or feedstock derived from excluded methods.

The motion was made by Harriet and seconded by Emily.

The voting will start with Steve. A yes vote is to remove; a no vote is to retain.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. CHAPMAN: The chair votes no.

Zero yes, 15 no. The motion fails.

Before we go on to the next slide, I forgot to mention, just for the education of the public, the Board conducts business by decisive votes of a two-thirds majority only. And just none of these votes were close but just for that to be out there in the public knowledge.

Sorry, Francis.

DR. THICKE: The next item is boric acid. Lisa.

DR. BRINES: Thank you. We are moving on to paragraph (e) in the same section, as insecticides (including acaricides or mite control). (3) Boric acid -- structural pest

control, no direct contact with organic food or crops.

And the last Technical Advisory Panel Report was completed in '95. Thanks.

DR. THICKE: And Harriet is the lead.

MS. BEHAR: So boric acid is often used in packing sheds and other facilities. Many times it is used as a powder introduced into cracks and crevices and is essential for controlling ants and roaches.

A number of members of the public did comment regarding the listing of boric acid and the majority supported relisting.

Numerous distributors, food processing businesses, certifiers, and farmers recommended relisting as a necessary tool for the control of ants and roaches in packing houses and food handling facilities. One certifier noted that it was not used in any of their certified operations, however.

A few organizations recommended changing the annotation to read for use only as

bait in traps or in gel formulations due to the issue of the powder could be an irritant.

The Crops Subcommittee would consider a petition regarding this annotation change sometime in the future.

Overall, the public comment was in favor of relisting this material as an essential tool for structural pest control. And the vote was to retain or to not remove; eight to not remove and one absent.

DR. THICKE: Thank you, Harriet. Any comments or questions on boric acid? Emily.

MS. OAKLEY: Steve, I thought I remembered you saying that you used the powdered form in cracks and that the gel would be a difficult use for that.

MR. ELA: I don't think it was us but it was -- I remember it. It wasn't me but it was somebody on the committee did mention that it was easier to apply in cracks if it weren't in a gel or a liquid form. So I think the committee decided, taking that under advisement decided

that that was a viable use, with the lack of other evidence.

DR. THICKE: Other comments or questions?

Okay, Tom, we're ready to vote.

MR. CHAPMAN: Okay, the motion is to remove boric acid as insecticide, including acaricides or mite control. Boric acid -- structural pest control, no direct contact with organic food or crops from 205.601(e) based on the following criteria in OFPA.

The motion was made by Harriet and seconded by Francis. This is a motion to remove. So a yes vote is to remove; a no vote is to retain.

Voting starts with Dave.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. CHAPMAN: The chair votes no. Zero yes, 15 no and the motion fails.

DR. THICKE: The next item up is sticky traps/barriers. Lisa.

DR. BRINES: Thank you. We are continuing under paragraph (e) As insecticides (including acaricides or mite control). The listing is (9) Sticky traps/barriers.

And the last Technical Report was completed in '95. Thanks.

DR. THICKE: And Emily.

MS. OAKLEY: This is a relatively uncontentious issue. As we discussed in the spring, it covers a wide range of traps and

coatings made with a number of different materials.

They are typically used for pest control and monitoring in limited quantities and in confined areas such as tree trunks. Some non-specific targeting or trapping can happen, although that is not targeted, and that can include spiders, mites, reptiles, and amphibians. They don't attract them but they can get trapped.

To that point, as in our previous review, there was broad support for relisting it among farmers, certifiers, and trade organizations with a comment and a request that we consider an annotation that would suggest that the traps be used in a way that prevents non-target trapping.

Any questions?

DR. THICKE: Nothing. Okay.

MR. CHAPMAN: Okay. So the motion is to remove sticky traps from 205.601(e). The motion was made by Emily and seconded by Sue.

This is a motion to remove. A yes

vote is to remove; a no vote is to retain and the voting will start with Jesse.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. CHAPMAN: The chair votes no. Zero yes, 15 no. The motion fails.

DR. THICKE: So next, we have two copper materials, coppers, fixed and copper sulfate. And we will discuss them together and vote separately on them.

Lisa.

DR. BRINES: Yes, thanks, Francis.

The first listing -- we're under Section 205.601 (i) As plant disease control. (2) Coppers, fixed -- copper hydroxide, copper oxide, copper oxychloride, includes product exempted from EPA tolerance, provided that copper-based materials must be used in a manner that minimizes accumulation in the soil and shall not be used as herbicides.

And the second listing also under paragraph (i)(3) is copper sulfate -- substance must be used in a manner that minimizes accumulation of copper in the soil.

And a comprehensive report on these copper materials was last completed in 2011.

Thanks.

DR. THICKE: Steve.

MR. ELA: So yes, we're going to talk about both coppers simultaneously. The overwhelming public comment is in support of it, that they are extremely critical for disease

control on a number of organic crops.

The only negative comments were last spring, where there was some concern that there was overuse and there was copper residue on crops. The certifiers said that was very difficult -- would be very difficult to enforce but included in the annotations on that.

And then there was a comment that was looking to document multiple alternative attempts to control the disease, including in-field crop diversity. So in other words, finding some alternative to using coppers through diversity or other cultural practices.

But overall, the main emphasis was coppers are very critical to the organic industry.

DR. THICKE: Any comments, questions?

Okay, Tom.

MR. CHAPMAN: Okay, so there is two items. We are going to start with coppers, fixed. The motion is -- all right, we are going to go with copper sulfate first to keep our

voting sheet easy.

Copper sulfate -- the motion is to remove copper sulfate from 205.601(i). The motion was made by Steve and seconded by Francis.

This is a motion to remove so a yes vote is to remove; a no vote is to abstain. And the voting starts with Ashley.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MR. CHAPMAN: The chair votes no. Zero yes, 14 no, zero abstain, zero

recuse, one absent. The motion fails.

DR. THICKE: Next up is --

MR. CHAPMAN: I have got to vote on the other one.

DR. THICKE: You're right.

MR. CHAPMAN: So coppers, fixed the motion is to remove coopers, fixed from 205.601(i). The motion was made by Steve and seconded by Emily. It is a motion to remove.

A yes vote is to remove; a no vote is to retain. And the voting will start with Dan.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

MR. CHAPMAN: The chair votes no. Zero yes, 15 no. The motion fails.

DR. THICKE: Okay, now up is humic acids.

DR. BRINES: Thank you.

We are moving to paragraph (j) As plant or soil amendments. And the listing is (3) Humic acids -- naturally occurring deposits, water, and alkali extracts only.

And the most recent Technical Report was completed in 2012. Thanks.

DR. THICKE: Okay, any comments -- oh, Asa, I'm sorry. Go ahead.

MR. BRADMAN: Just overall there has been a number of comments related to humic acids, representing up to 40, or 50, or more growers. And overall, there is overwhelming support for it.

There have been some concerns raised

by Beyond Pesticides about its extraction and manufacturing methods as a process, using, some people use the term brown coal or you know partially fossilized materials and the potential environmental impacts of that.

In general, though, there is really overwhelming support across the board for it and I don't see any reason to take it off at this point. And there was a unanimous support in the subcommittee.

DR. THICKE: Okay, Emily.

MS. OAKLEY: I believe we have a typo because it was not -- the motion was not made by Ashley.

DR. THICKE: That's correct.

MS. OAKLEY: That would have been made by Asa. So just correcting that.

MR. CHAPMAN: We'll make that correction when we go to the vote.

DR. THICKE: Any other comments?

All right, we're ready to vote.

MR. CHAPMAN: Okay. So as was stated

before -- can you scroll down -- there is a typo on the record. The motion is by Asa Bradman. The second is by David Mortensen. That will be corrected.

The motion to remove humic acids from 205.601(j), it is a motion to remove. And voting starts with Scott.

A yes vote is to remove; a note vote is to retain.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. CHAPMAN: No.

Zero yes, 15 no. The motion fails.

DR. THICKE: Okay, the next item up is micronutrients -- soluble boron products.

Lisa.

DR. BRINES: Thank you. We are continuing under paragraph (j) as plant or soil amendments. And the listing is micronutrients -- not to be used as a defoliant, herbicide, or desiccant. Those made from nitrates or chlorides are not allowed. Soil deficiency must be documented by testing. And the listing is (i) soluble boron products.

And the most recent Technical Report was completed in 2010. Thanks.

DR. THICKE: Thank you. Harriet, I believe.

MS. BEHAR: So all public commenters were supportive of relisting this micronutrient, calling it essential. Certifiers, distributors, food processing business, and many individual

growers stated their need for this material and that it is very commonly used.

One commenter felt there should be a way to address overaccumulation of all micronutrients used by organic growers. I'm not sure how we'll do that but it's a comment.

Others felt that if testing must be done before micronutrients may be used, the application may be too late to save the crop or perennial plant.

The subcommittee supported the proposed annotation change recommended by the NOSB in October 2015, which stated instead of stating that soil testing must be documented, it says that deficiency must be documented and it takes away the requirement for testing as well.

But at this time, that has not been changed in our regulation.

Removing the requirement that there must be soil testing before allowing application is problematic for both perennial and annual crop producers. And there is numerous ways of

documenting a deficiency, other than soil testing. By the time the deficiency is noted, it may be too late to save the perennial plant or crop. And this is an essential micronutrient across all types of crop production.

DR. THICKE: Any comments or questions?

MS. BEHAR: We didn't give the vote. So the Crops Subcommittee vote was eight no to remove and one absent.

DR. THICKE: Thank you, Harriet.

Tom.

MR. CHAPMAN: All right, so the motion is to remove micronutrients, soluble boron products from 205.601(j). The motion was made by Harriet; it was seconded by Jesse.

This is a motion to remove so a yes is to remove; a no is to retain. And the voting starts with Harriet. Sorry, the voting starts with Sue.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

MR. RICE: No.

MR. CHAPMAN: The chair votes no. Zero yes, 15 no. The motion fails. Francis.

DR. THICKE: The next material is vitamins, B1, C and -- oh, the other micronutrients. Excuse me.

So micronutrients, sulfates, carbonates, oxides, or silicates of zinc, copper, iron, manganese, molybdenum, selenium, and cobalt.

Lisa.

DR. BRINES: Thanks, Francis. Yes, we are still under the same paragraph (j)(6) As plant or soil amendments. Micronutrients -- not to be used as a defoliant, herbicide, or desiccant. Those made from nitrates or chlorides are not allowed. Soil deficiency must be documented by testing. And it's under (ii) sulfates, carbonates, oxides, or silicates of zinc, copper, iron, manganese, molybdenum, selenium, and cobalt.

And the last Technical Report was done in 2010. Thanks.

DR. THICKE: And Harriet is the lead on that.

MS. BEHAR: So basically the comments on these micronutrients was pretty much identical to the previous one we just voted on, the soluble boron. A lot of supportive comments on relisting these micronutrients, calling them essential in a variety of cropping systems. This material also had the same voted upon and approved by the NOSP -- NOSB, excuse me, changed to deficiency must be

documented instead of must be documented by testing.

And yes, so and then the vote was six no to remove and three absent.

DR. THICKE: Okay, any comments?

I guess not.

MR. CHAPMAN: Okay, the motion is to remove micronutrients, sulfates, carbonates, oxides, and silicate of zinc, copper, iron, manganese -- I should have been paying attention. How do I say that, Francis, molybdenum --

DR. THICKE: Molybdenum.

MR. CHAPMAN: -- selenium, and cobalt at 205.601(j).

The motion was made by Harriet and seconded by Steve.

The voting will start with Harriet. This is a motion to remove so a yes is to remove and no is to retain.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MR. CHAPMAN: The chair votes no.

Zero yes, 15 no. The motion fails.

DR. THICKE: The next material, vitamins B1, C, and E.

Lisa.

DR. BRINES: Thank you and I will introduce all three at once. I am going to turn it over to the subcommittee where there are two motions.

So we are still under paragraph (j) as plant or soil amendments and it is listing (8)

vitamins B1, C, and E.

And Technical Report was completed in 2015. Thanks.

DR. THICKE: So Emily is the lead and your splitting them out into two here.

MS. OAKLEY: We are because we are recommending the removal of B1 but the retention of C and E.

And the reason for that is that the 2015 TR was very clear that the available literature did not support the premise that foliar and solar applications of vitamin B1 are responsible for root stimulation in transplanted crops.

Additionally, multiple studies of vegetable transplants, trees, and flowers concluded that vitamin B1 had no impact on seedling vigor, size, color, or root development. The TR was unable to describe a mode of action for the substance, quote, in the absence of significant in vivo results correlating vitamin B1 applications with enhanced root growth.

The TR provides a broad reference to alternative substances for vitamin B1. Additionally, there are no OMRI-approved brand name crop inputs containing B1 in the final product.

We did hear from a few people that there are some blended fertilizers that do contain all three but there are multiple other options that are available for them. So I don't -- no one has expressed that it would be a hardship in any way to remove the substance. And since it doesn't do what it is listed for, I think it is clear that we should remove it.

Are there any questions or discussions about that?

MS. BEHAR: Were there any products in the marketplace that will come -- that will be no longer available to organic growers if it has been bundled?

MS. OAKLEY: Well there are at least six materials that were listed that do contain it in which it's bundled that growers are using but

I don't think the fact that it's bundled in a few materials is a justification for keeping it because it is not effective and there are other materials available.

Yes?

MR. CHAPMAN: Was it six materials or six users with the material?

MS. OAKLEY: It was materials. Additionally, I can provide some additional information that did not come through the public docket that was provided to me by someone at the California Department of Food and Agriculture and they also do not see that this is a substance that has the efficacy that it claims that it includes. Although they have a handful of products registered for it, they don't see it as something that substantiates its claims.

Any other questions? Because this would be a motion to remove this substance so, if you have any other questions, that's fine.

DR. THICKE: Scott.

MR. RICE: Just a quick comment. It

was my understanding that those that may have B1 in their formulation could be reformulated and, if necessary, re-reviewed by a material review organization and still be available as a tool in the toolbox.

MS. OAKLEY: Thank you.

DR. THICKE: Okay, I guess we're ready to vote.

MR. CHAPMAN: Do we want to talk about C and E and then just do both votes or is there anything else?

MS. OAKLEY: No.

MR. CHAPMAN: No.

MS. OAKLEY: I think we can just start with this one.

Are there any other questions about C and E? They are used to promote growth and yields and to protect plants from oxidative stress due to salinity but there really wasn't any public comment strongly in favor of its removal.

There was some concern about

potentially deriving these materials from GE organisms but, as stated previously in the spring, affidavits can attest to the fact that GE materials are not used for its production.

MR. CHAPMAN: Okay. And then I have a question for Dr. Brines. And I think I know the date but I don't want to say it wrong.

What is the sunset date that this material is on. Is it 2022?

DR. BRINES: Yes, that's right, March 15, 2022.

MR. CHAPMAN: So just a reminder, as part of our sunset reorganization, this is one of those materials. And so if this does get voted to remove, the recommendation as part of that was for it to get removed on its original time line, which is 2022.

MS. BEHAR: So that would leave plenty of time for reformulation, would it not?

MS. BAIRD: If there really is some uses for it. Also, a time for someone to come forward and let us know.

MR. CHAPMAN: Okay, we'll move to the vote?

DR. THICKE: We're ready for the vote.

MR. CHAPMAN: Okay so the motion is to remove vitamin B1 from 205.601(j) based on the following criteria from the Organic Food Productions Act or 7 CFR 205.600(b), if applicable: incompatible with a system of sustainable agriculture due to its unproven efficacy or need and a lack of essentiality.

The motion was made by Emily and was seconded by Steve.

This is a motion to remove. A yes vote is to remove; a no vote is to retain. And the voting starts with Emily.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MR. CHAPMAN: The chair votes yes.

Fifteen yes, zero no. The motion passes.

DR. THICKE: So are there any other comments or discussion on vitamins C and E?

MR. CHAPMAN: Okay, the motion to remove vitamins C and E from 205.601(j). The motion was made by Emily and seconded by Harriet.

This is a motion to remove. A yes vote is to remove; a no vote is to retain. And the voting starts with Francis.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

MR. CHAPMAN: The chair votes no.

Zero yes, 15 no. The motion fails.

DR. THICKE: So next we have two items from 205.602 that are nonsynthetic substances prohibited for use in organic crop production. And the first one up is lead salts.

Lisa.

DR. BRINES: Okay, thanks, Francis.

Yes, we are moving on to, as you said, Section 205.602 of the National List, nonsynthetic substances prohibited for use in organic crop production and the first listing is

under paragraph (d) lead salts.

Thanks.

DR. THICKE: I'm the lead on this one. There were very few comments on lead salts and its consensus that we should leave it on the list, keep it prohibited for organic crop production. And the committee voted unanimously to keep it on the prohibited list.

Any comments or questions?

Harriet.

MS. BEHAR: In the past, it has been used in my region, I believe on apples. And it has just -- we have a lot of remediation problems because it doesn't really move.

DR. THICKE: Okay. Okay, so no other comments. And we're ready to vote.

MR. CHAPMAN: Can we scroll down?

Okay, this is a prohibited natural. It is a motion to remove lead salts from 205.602. The motion was made by Francis and seconded by Emily.

A yes is to remove the prohibited and

no is to retain it as a prohibited. The voting will start with A-Dae.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MR. CHAPMAN: The chair votes no. Zero yes, 15 no. The motion fails.

DR. THICKE: And the next item, the last item of sunsets is tobacco dust.

Lisa.

DR. BRINES: Thank you. Yes, we are

still under Section 205.602 and the listing is under paragraph (i) Tobacco dust (nicotine sulfate).

Thanks.

DR. THICKE: The lead is Harriet.

MS. BEHAR: So public commenters, both this time and the previous time, were from certifiers and businesses, and public interest organizations and all agreed that the product should remain listed as a prohibited nonsynthetic.

It was noted by two certifiers and OMRI that this is currently allowed as a natural agricultural product to be incorporated into the soil or as compost feedstocks, while tobacco dust, tea, and smoke are prohibited under the USDA Organic Regulations.

So we voted as a subcommittee to keep it retained. However, we might look at, in the future, at the use of it as a soil amendment or a compost feedstock.

In addition, in the Livestock

Subcommittee, I have heard animal health practitioners discuss the use of tobacco dust as a parasiticide, an external parasiticide. I don't know since we have it -- because it is not listed in the livestock prohibited. So maybe it will get on the work agenda; maybe not. We'll talk about it.

There really is no product available on the market but it could still be homemade.

And our vote was eight to not remove from the prohibited nonsynthetic list and one absent.

DR. THICKE: Okay, thank you.

Any questions or comments?

Okay, I guess we're ready to vote, Tom.

MR. CHAPMAN: All right. This is a prohibited synthetic and the motion is to remove tobacco dust from 205.602. The motion was made by Harriet and was seconded by Joelle.

A yes vote is to remove from the prohibited list; a no vote is to retain. The

voting will start with Lisa.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MR. CHAPMAN: The chair votes no.

Zero yes, 15 no. The motion fails.

DR. THICKE: So, Tom, do you want to move on to the next item or do you want to -- when do you want to take a break?

MR. CHAPMAN: You tell me but maybe we go through a couple of petitions and then take a

break.

DR. THICKE: That would be fine.

Okay so the next up is a petition for fatty alcohols. And Jesse has the lead on that.

Are you going to --

DR. BRINES: Yes, I will go ahead and introduce it before turning it over to Jesse. Thank you.

The petition is for fatty alcohols, a mix of octanol and decanol. The petition was submitted to the program on November 12, 2015. There is a petition addendum that was submitted on June 12, 2017. And both the petition and addendum are posted on the NOP website.

The petition was submitted by Green Ag Supply, LLC and it requests the addition of fatty alcohols to Section 205.601 of the National List for sucker control.

In support of the review, the Crops Subcommittee did request the development of a Technical Evaluation Report, which was completed in 2017. And this is the first meeting at which

this material will be discussed. The material has not been previously classified by the Board.

Thanks.

DR. THICKE: Thank you, Lisa.

Jesse.

MR. BUIE: Fatty alcohols, octanol and decanol are monohydric aliphatic alcohols containing eight and ten carbons, respectively, with a single hydroxyl group.

The petitioner proposes to use the fatty alcohol blend for topping and sucker control on organic crops. The Technical Review indicates the specific use of fatty alcohol substance to be to chemically remove flower buds and suckers from tobacco plants.

The EPA has only approved fatty alcohols for the use as a growth regulator on tobacco and the technical review only covered the use of fatty alcohols for use on tobacco.

The Crops Committee does not think the use of a synthetic growth regulator is compatible with a system of sustainable and organic

agriculture.

DR. THICKE: Harriet.

MS. BEHAR: I'd like to make a motion to send it back to the subcommittee.

DR. THICKE: I'll second it.

Emily?

MS. OAKLEY: So Francis and I are going to disagree.

I think that we should go ahead and vote on this material now. I understand the concerns of the petitioner but he first started contacting the NOSB and the NOP mid- to late September and there was a great deal of time to continue to make public comments written. And at the time, the webinar was not at all full. So farmers could have spoken on the webinar if they had chosen to.

And as Steve stressed when we spoke with him, I feel that the lack of written comments on the docket now, other than to request that we send it back, don't provide us with substantial information to justify a change in

the deliberations that we took over the Crops Subcommittee, which were lengthy and over many meetings and were not at all quick or hasty.

I don't think sending it back would change our outcome.

MR. MORTENSEN: I had a similar feeling from the many times we discussed this on the phone together and reread the documents. So, I agree with Emily.

DR. THICKE: Thank you, Dave.

Ashley, did you have your hand up?

MS. SWAFFAR: So I agree with you, Emily, also. You know I think the petitioner did not take advantage of the written public comment. You know to think for the entire audience to know we look at every comment the same whether you give it to us in person or written. A lot of times written comments help us even more so because we can really think it over and do some other research, instead of trying to research on the fly.

So I was really disappointed that of

the seven times fatty acid came up in the regulations.gov, it was a lot of consumer organizations and then the petitioner asking us to take it back.

So I think that they missed the boat on that one. I would be in support of voting on this.

DR. THICKE: Tom and then Harriet.

MR. CHAPMAN: I think Asa was before me.

DR. THICKE: I didn't see you Asa. Go ahead.

MR. BRADMAN: I just I mean for me, in terms of the committee discussions, the fact that it was submitted for all crops but EPA only has it approved for tobacco, to me then it was just a nonissue because the request was for beyond its approved use. So I felt like there was inconsistency there.

I would be willing to reconsider that, if it came back to committee to really focus on whether we are talking all crops or just tobacco.

I understand the TR focus just on tobacco.

DR. THICKE: Tom.

MR. CHAPMAN: I agree with everything I heard here from all the subcommittee members and I, as chair, often listen in on calls, even if I'm not on the subcommittee. And I can attest that there was an in-depth discussion and review of this item. And I agree that I doubt any additional information will change their outcome.

However, I do generally acquiesce to requests for delay, especially if this is not a listed item, the delay will not continue a listing of an item.

So I will vote for this motion but I also agree that I have no confidence that it's probably going to change anything. And I agree with the concerns that there were several opportunities for additional public comment that were not utilized.

DR. THICKE: Harriet and then Emily.

MS. BEHAR: I made the motion to send it back to the subcommittee so that we would have

a public discussion about whether or not we wanted to but I don't think -- but personally, I am not going to vote for my own motion because we reviewed the material as we could. We reviewed it for use on tobacco, which is all we can really do and we did a robust review. And I think we're ready to vote but I thought it was important that we had this discussion.

DR. THICKE: Emily.

MS. OAKLEY: Two comments. One is that I also would just encourage stakeholders to make their comments via the open docket, rather than individually to the NOP or the NOSB because that makes this process clear for all of the stakeholder community and those communications that happened just with us individually, we're not available to everyone else and I have concerns about that.

Secondly, the reason I don't think that we should send this back is that it is a petition material. It is not the action of removing a substance. It does add to our

workload unnecessarily, when we have already done the work on this petition.

DR. THICKE: Okay I just want to make a comment that what Asa brought up, the NOSB has, in the past, restricted some requests that were more broad and then we restricted them down in an annotation. So we have done that in the past. So it is a possibility.

Did you have your hand up, Lisa? Okay, go ahead.

MS. DE LIMA: Since I'm not on the Crops Subcommittee, I wasn't on those calls. Can you talk a little bit about why you don't think the vote would be any different if we sent it back and brought it back?

DR. THICKE: Who wants to do that? Emily? Jesse?

MR. BUIE: Well, I guess the main issue is that the petitioner requested the use of the product on all organic crops, where the TR only discussed its use on tobacco.

MS. DE LIMA: So it's not for like an

environmental reason.

MR. BUIE: No.

DR. THICKE: Emily wants to talk about that I can see.

MS. OAKLEY: Yes, I mean I would just add that I don't think our deliberations were based on whether or not it would be used for all crops or tobacco. It was that we were very firmly in belief that such a material plant growth regulator was not appropriate for use in organic production and that there are viable alternatives, namely, handpicking and removal of the buds, and that we shouldn't a material, a synthetic such as this that is inconsistent with our understanding of the principles of organic agriculture.

I also had some concerns with respect to the TR and the sources of these materials but I won't go into all those details. Those were deliberated on the call. But yes, there were environmental concerns.

DR. THICKE: Steve.

MR. ELA: I would echo what Emily says. It wasn't just based on procedural dynamics. I mean I think that would be -- then you could have a reasonable argument but it was that the material itself would reasonably be rejected, regardless of what the petition said.

DR. THICKE: Harriet.

MS. BEHAR: And we did not look at it that oh, it's tobacco so we don't want to grow organic tobacco either. We weren't prejudiced against the plant itself, either. It was more its use and its place -- its basic mechanism in the environment and on the plant.

DR. THICKE: Scott.

MR. RICE: Yes, we heard from a couple of certifiers that they have gotten requests to use this specifically for tobacco. But I can understand the Crops Subcommittee's deliberations that this may not be essential, or necessary, or parallel, or in line with organic principles.

And on the subject of sending it back, I think I would echo Tom's comments that it will

still be not allowed, whether we vote on it today or not, with all due respect to workload. It might just be putting it back on for additional comment, as we did with marine materials.

DR. THICKE: Yes, I don't disagree with those assessments. It is likely to be the same vote, if we do send it back.

I feel, though, I was in the middle of a miscommunication so I will probably vote to send it back. And I won't be here anyway.

Any other comments?

MR. BRADMAN: I just, the representative from Florida Organic Growers also suggested we hear from other growers and things like that. And we all love Marty and so that made me a little more open to hearing some more about this.

DR. THICKE: Steve.

MR. ELA: Yes, but I come back to there was the webinar and there were written comments. I mean there was nobody shutting down the conversation. It wasn't because there wasn't

adequate time. It was -- there was time.

So I mean we have a process and I think, because of workload, people need to respect that process.

DR. THICKE: Okay. It looks like we're ready for a vote.

MR. CHAPMAN: Okay. This is not a motion about business and, therefore, it follows the Robert's Rules of Order. And as such, it is a simple majority vote. So eight votes are all that are necessary to send this motion back.

The motion is to refer back to subcommittee the petition on fatty alcohols.

The voting will start with Asa. And so in this case, a yes vote is to refer back to the subcommittee; a no vote is to continue deliberation here.

MR. BRADMAN: Yes.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.
DR. SEITZ: No.
MR. RICE: Yes.
MS. BAIRD: Yes.
MS. BEHAR: No.
MS. OAKLEY: No.
DR. THICKE: Yes.
MS. BRIONES: Yes.
MS. DE LIMA: No.
MR. CHAPMAN: The chair votes yes.
Six yes, nine no. The motion fails.
DR. THICKE: Okay, I guess we're ready for the real vote here, unless there are any other comments on the substance of the material.
MR. CHAPMAN: I have a question.
DR. THICKE: Yes.
MR. CHAPMAN: So this is a synthetic. The reasoning from the subcommittee was that it is a synthetic growth regulator. Are there other synthetic growth regulators on the crops list and, if so, how is this different?
DR. THICKE: Okay, there is ethylene,

I believe, for pineapple flowering and that was very controversial. And so it probably isn't different then. It wasn't like shooed through.

Steve.

MR. ELA: I think Francis is right and I don't know the complete list so I can't say there's nothing else. But since there were alternatives in hand labor or other ways, it wasn't that this was the only way the crop could be grown. And so to put a synthetic in when there were organic alternatives seemed antithetical.

I, personally, raised the labor issue that I don't think people love working in tobacco and there are dermal toxicities and such. But it still seems that there are -- this is not -- this may be convenient and very useful, and cheaper to raise the crop but it's not critical to raise the crop. And I think that is the fundamental difference as we evaluate synthetic materials.

DR. THICKE: Tom.

MR. CHAPMAN: So I do remember the

most recent sunset discussion on ethylene in Vermont. And one of the arguments made by the pineapple industry was that it was -- there were human health impacts related to going out into the pineapple fields with the sharp edges of the plant and such during the varied harvest times. So uniform harvesting was important to them.

Is this purely a labor economic issue on the labor side or is there human health implications? How well were they considered? I know you touched on it a little bit there, Steve.

MR. ELA: Well, my response would be I brought that up as a personal knowledge, not that it was brought up in public comment, or via the petition, or in the TR.

So it wasn't a big enough scale issue to hit the radar. I brought it up antithetically from personal knowledge.

DR. THICKE: Emily.

MS. OAKLEY: If there is any toxicity associated with the labor, it's associated with the crop itself. So they are growing a toxic

crop. It's not that -- which is like a unique situation in this case but it's not a scratching in relation to pineapple.

But it has been done for a very long time without this material, with no adverse effects represented in the petition.

MR. MORTENSEN: And we did, on two separate occasions, discuss the physical contact, the hand suckering versus something else.

Personally, I have worked in tobacco in doing research and have been with work crews in the field. It's not comfortable but we concluded from the various discussions we had that it was certainly doable.

MS. SWAFFAR: Yes, so I am not familiar with growing the tobacco crop. And I'm just wondering if this topping that is done by hand is actually really practical. Are these people going out into 40- or 100-acre fields? You know if you are growing corn and things like that, you are not going out and individually silking each ear of corn like a lot of people

used to do.

And then I had a question on the alternatives. Also you said that soybean oil or mineral oil, which actually mineral oil couldn't be applied to organic crops, but soybean oil could be applied to also be an alternative. Is that effective? Do you know anything?

MS. OAKLEY: I'll let Jesse answer that because he is the lead.

DR. THICKE: Jesse?

MR. BUIE: I mean it's effective. I guess the issue is what the petition was requesting.

MS. SWAFFAR: Are they easier?

MR. BUIE: I don't know.

DR. THICKE: Emily.

MS. OAKLEY: I do just want to say that my knowledge is not vast but these farms don't tend to be hundreds and hundreds of acres, as you would see in corn. They are smaller scale operations because they do require a lot of labor. That's historically how they have

operated.

So I did actually have a farmer visiting me from North Carolina, and he is in a very tobacco-heavy growing area, while we were deliberating this. And he said that in many cases, when he started farming organically 40 years ago, he was surrounded by conventional tobacco fields but over the past several decades, and especially more recently, in order to remain viable, they are converting to organic production.

So I think that there are a number of smaller scale organic operations that are happening in that area.

DR. THICKE: Scott.

MR. CHAPMAN: Sorry. Can I do a point of personal privilege?

We have been asked by the transcriptionist to speak up because it's a little hard hearing folks. So, please speak up, folks, into your microphones.

Sorry, Scott.

MR. RICE: Thank you.

I just had a point of clarification for the motion that we have is to add fatty alcohols for use in organic crop production. So is it that potentially it doesn't -- where that motion would not limit us to tobacco if additional label use were added at a later date.

Is that my understanding?

DR. THICKE: That's correct.

MR. RICE: Okay.

DR. THICKE: Harriet.

MS. BEHAR: And I wouldn't vote for it for just tobacco but the fact that it is for other crop production, we did not review a TR for use on tomatoes or any other crops because we couldn't get a TR on something that is not approved by the EPA. So that will be an additional reason why I will not vote to put this on the national list as an approves synthetic.

In my region, we have, in the past, grown quite a bit of tobacco. It's not as high quality as the tobacco grown in the south. It is

used mostly for chewing tobacco. And it is kind of a family crop. You know people would have five, ten acres.

And Ashley, there still is quite a bit of hand detasseling being done in my region.

DR. THICKE: Of corn you are talking about.

MS. BEHAR: Of course, yes, of corn, not of tobacco.

But they are removing -- I actually helped on an organic farm at one point helping remove suckers on tobacco. Hot job.

DR. THICKE: Steve.

MR. ELA: Well and to Ashley's point, I mean I would love to have one of these materials for thinning apples. I mean we personally have 25 acres of apples that get thinned by hand. And you know labor is obviously not a disqualifier and corn is not the only thing that has tremendous hand labor involved in the crop production. So it is a fair playing field.

DR. THICKE: Emily.

MS. OAKLEY: Yes, I echo that sentiment on tomato sucker removal for pruning tomatoes. It is a labor-intensive activity but it is simply part of the job, in my view.

DR. THICKE: Okay. Is that about it for discussion?

Oh, Dave.

MR. MORTENSEN: I guess at a time when growth regulator synthetic, oxyntic growth regulator, herbicides are rapidly increasing in use in conventional agriculture, the thought of us moving ahead with oxyntic growth regulation, applications to plants in organic agriculture seems counter to my sort of thinking about the direction we should be going. So it's just another thought.

2,4-D and Dicamba, for example, in conventional agriculture, I'm not saying they are the same but they are growth regulator compounds that affect plants by altering their growth behavior in a similar way that an alcohol affects the growth of flowers on tobacco.

DR. THICKE: Any other comments?

A-Dae.

MS. BRIONES: So I am just a little confused. So there is no possibility that the petitioner can repetition this substance for -- if they say for only the use in tobacco production?

DR. THICKE: Emily, do you want to answer that?

MS. OAKLEY: I'm going to answer that indirectly, which is that whatever this motion listing is is not irrelevant but it is only EPA approved for tobacco and that would supersede any decision that we would ever make.

So in essence, we are basically voting for it for tobacco because that is its only EPA approved use at the moment.

MR. CHAPMAN: Does Dr. Brines want to say anything?

DR. BRINES: Yes, I guess we are in agreement with that. So if the petition were to be re-petitioned with the only change being

limiting the scope to tobacco, that would not be new information because the program's decision when it moved it forward was that that was the only eligible use. So that is what is before the Board right now.

They could make other changes to the petition that could warrant reconsideration by the Board but any petitioner has that as an option.

DR. THICKE: Thank you for that information.

Are we ready to vote? I think so, Tom.

MR. CHAPMAN: All right. So this motion, the first -- there is two motion that come to us. The first motion is a classification motion. It is just to classify the substance as synthetic or nonsynthetic. The motion is to classify fatty alcohols, octanol and decanol mix as petitioned as synthetic. The motion was made by Jesse and seconded by Emily.

So a yes vote is to vote it as

synthetic. A no vote is to say it is not synthetic. The voting will start with Joelle.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. BRIONES: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MR. CHAPMAN: The chair votes yes. Fifteen yes, zero no. The motion passes.

The next motion is the listing motion. So this is the motion whether or not to add it to the National List. The motion comes to us as a

motion to add fatty alcohols, octanol/decanol mix as petitioned to 205.601(k)(2) for use in organic crop production.

The motion was made by Jesse and seconded by Emily. This is a motion to add. And so a yes vote is to add it. A no vote is to not list it.

The voting will start with Steve.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. CHAPMAN: The chair votes no.

Zero yes, 15 no. The motion fails.

Do you want to do this or should we break?

DR. THICKE: Do you think it is going to take very long, Emily?

MS. OAKLEY: I was going to read a bit about the petition and the proposal because there is a broader issue here that I wanted to address. So it probably would be good to take a break, if you want to take on now.

MR. CHAPMAN: Okay.

MS. OAKLEY: Not that I am going to take like 20 minutes, but it's --

MR. CHAPMAN: Let's push forward.

MS. OAKLEY: Push forward? Okay, all right.

DR. THICKE: So anaerobic digestate.

DR. BRINES: Okay, so I will proceed with introducing the next and final petition that came in from the Crops Subcommittee for this meeting, which is the petition for anaerobic

digestate.

This petition was received by the program on April 5, 2016. It was petitioned by Cenergy USA. The petition requests an amendment to Section 205.203 of the regulations. So it is not a standard petition which would request addition, deletion, or amendment to 205.601.

In support of the review, the Crops Subcommittee requested the evaluation by -- requested the development of a third party Technical Evaluation Report and that report was completed earlier this year.

Both the petition and the Technical Report are available to the public on the NOP website.

Thanks.

MS. OAKLEY: First I just wanted to say that this was a really thorough petition and it was very helpful for our deliberation. And thank you to whoever wrote it.

We also added supplemental questions to this Technical Review and those were answered

for us.

So to begin, the petition requests that anaerobic digestate fiber or digestate produced without synthetic materials be allowed for use in organic production exclusive of days-to-harvest restrictions following application.

This petition, in particular, is for anaerobic digestate derived from plant and animal products in a two stage mixed plug-flow digester.

During the first stage of production, the raw waste is mixed and heated to 101 degrees Fahrenheit. Either reclaimed waste heat or a boiler is used to maintain the digester temperature for the growth of methanogenic bacteria. Waste materials from the first state gravity flow into the second stage of the vessel. Here, the methanogenic bacteria convert volatile fatty acids and acetic acids produced in the first stage of the anaerobic digestate vessel into a biogas. Heat mixes the material in a rotational motion, and it is held at 101 degrees Fahrenheit for 21 days. Next, the waste flows

into an effluent collection pit for additional processing. The liquid and solids are separated and a fiber of 30 to 35 percent solid material is produced. And that's important because it relates to our deliberations as to whether not this meets a compost standard or raw animal manure standard.

However, the petitioner states the digestate is not raw manure or compost. It is virtually pathogen-free and, therefore, should not be restricted. They suggest that the two stage mixed plug-flow anaerobic digestate produces a material that is equivalent to OMRI's classification of processed manure.

While this classification specifies a minimum temperature of 150 degrees Fahrenheit for at least one hour and a maximum moisture content of 12 percent, the petitioner proposes that these temperature, duration, and drying criteria are unnecessary for pathogen kill when using their digestion process.

And then the reason I am taking a

little more time is that this is not just a single petition kind of in a vacuum regarding anaerobic digestate. There is a bit more history to it.

In addition to anaerobic digestate, other manufactures employ heat without drying or a moisture reduction process without heating to treat manure. NOP 5006 requests that the CS also evaluate these treatment processes to determine if they should be allowed without a pre-harvest interval.

Following the adoption of the Food Modernization Safety Act, the FDA undertook a risk assessment of produce grown with manure. The CS is awaiting the outcome of the FDA's assessment and will then determine how to evaluate these other manure treatment methods as a separate work agenda item in the future.

So there was public comment requesting that we look at other materials and that we follow up on this memo. But I just want assert we claim we will be waiting for the FDA before we

determine if and how to proceed with this additional matter of either a liquid anaerobic digestate, other feedstocks, et cetera.

Our primary concern with this material was that the Technical Review is very clear that there are no guarantees of pathogen elimination and, in fact, they can remain. And so when we discussed this and looked at it for compatibility under the category of adverse impacts, I am going to quote from the TR: The principal human health concern from anaerobic digestate is foodborne pathogens. Several peer-reviewed papers document that foodborne pathogens commonly survive the anaerobic digestion process. IN particular, spore-forming pathogens are the most likely to remain viable after the anaerobic digestion process.

Several pathogens are able to survive or at least remain viable after anaerobic digestate that would be unlikely to survive aerobic composting.

Again, from the TR, the petition

claims that the pathogen reduction in plant and animal materials properly processed in a two stage mixed plug-flow anaerobic digester produced an equivalent heating process to aerobic composting, as specified in the NOP regulations at 205.203(c)(2).

Laboratory analyses were included in the petition but the sampling methodology was not described. The results were not peer-reviewed. While anaerobic digestate is not raw manure, it is not aerobically composted. The temperature reported in the petition is 101 degrees Fahrenheit, as I mentioned earlier. This is in the mesophilic range and below the temperature of 131 degrees Fahrenheit specified in the NOP regulations for composting manure.

In the production of anaerobic digestate from sewage sludge, the EPA requires that the material go through aerobic composting under the same conditions stipulated in 205.203(c)(2), a process called further reducing pathogens. Aerobic composting of the digestate

is a process to significantly reduce pathogens, which doesn't occur in anaerobic digestate.

In terms of alternatives and compatibility, organic producers employ a wide range of practices to foster soil, health, and fertility, including cover cropping, incorporating crop residue, crop rotation, and conservation no-tillage techniques. There are numerous alternative materials to digestate fiber.

Anaerobic digestate may currently be used in organic production as an ingredient in compost or as a manure, subject to the required pre-harvest intervals required of raw manures in 205.203.

Because of the potential for negative effects on human health through foodborne pathogens, the unproven safety of anaerobic digestate fiber and the many alternative practices and materials already in use in organic production, this substance, as petitioned, without pre-harvest application intervals was

deemed not compatible with a system of sustainable agriculture.

And I wanted to not turn the spotlight on Joelle, but if you would like to elaborate further as a microbiologist, I would love to hear your thoughts.

MS. MOSSO: Sure. So obviously a lot of deliberation happened in regards to anaerobic digestate within the Crops Subcommittee. I think of import is that in the Technical Review, it was rather apparent, in fact actually labeled, that it would be at a mesophilic range that would not be sufficient to take care of what we know to be human pathogens of concern when it comes to agricultural production.

Additionally, I do think it is of note that it is more of a question of timing. As Emily said, this is not a prohibited material. It is in regards to the application time from when you can apply it to when you can harvest the crop. As such, it can certainly still be used, assuming it meets all other conditions of organic

production.

What I would like to emphasize is that this material is probably the first of many or not even maybe the first, where NOSB is being asked to probably make decisions that are not within our purview or expertise. Being a civilian board, I don't think it would be right for the NOSB to make a judgment call on the food safety impact that a potential material may have.

And as such, future petitions that may be in regards to materials that have sensitive natures like this, should come in complement with the appropriate authority's approval.

In this case, had anaerobic digestate come with an EPA letter or an FDA letter that said it had sufficiently addressed food safety concerns, I think the NOSB would have been able to make a more deliberate decision for organic production instead of the onus being put on the NOSB to make a food safety decision.

MS. OAKLEY: Are there other discussion -- I mean, I guess Francis, do you

want to call on people?

Okay, Dan.

DR. SEITZ: Apart from food safety, I'm just curious to know where is the product obtained from that companies use to make the digestate.

MS. OAKLEY: Because of the large quantities of manure that are required when it's a manure feedstock, that would typically be a confined animal feeding operation. But that is not necessarily a criteria that we can look at because there are composts and raw manure applications that take place using manure from those sources as well.

So concerns about that are legitimate but not necessarily ones we can use in this deliberation.

Harriet?

MS. BEHAR: So in our regulation we do have that if a product is a manure, it needs to go through a composting process, which we have a very detailed process of time and temperature

before it can be applied without the interval of 90 or 120 days.

And so since this has some manure in it, I believe that we do have in our regulation that it doesn't meet because it doesn't have the time and the temperature. So it is not necessarily a pathogen-based but it really doesn't meet our regulation.

But on the other side, I believe there was at least one public comment, that there was an anaerobic digestate that was 100 percent plant based. Will you address that?

MS. OAKLEY: Yes, there was. Stahlbush Island Farms -- I'm not supposed to list the person -- has a food processing anaerobic digestate on their farm. It is a hydraulic digester which was not covered in this TR, which they pointed out in their comments and that they want us to evaluate anaerobic digestate processes and products individually.

Joelle, I don't know if you want to speak to that in terms of the pathogenic concern.

MS. MOSSO: Sure. I mean plant-based or manure-based, you still are dealing with food safety concerns. That's why we see outbreaks associated with non-animal based product.

So certainly listeria, salmonella, Campylobacter, these are all organisms that are known to have presence in plant material. So I don't think that that is a substantiation as to why it should be handled differently. But certainly it is still allowed to be used in organics. It's just still subject to the application intervals.

And again, reiterating is that if it came in complement with letters that said it could be appropriate to be used from a food safety concern, from the EPA, or FDA, or appropriate body, I think that would be a very different discussion.

I would also like to add is that currently FSMA and the FDA are undergoing review of the composting regulation that is in the National Organic Program regulations.

So I think it just reiterates the point that it is not within our purview or expertise as a civilian board to be justifying what is food safe and not food safe for our program.

MS. OAKLEY: I'm going to follow up and then Harriet.

There were a number of public comments who were in support of our proposal for the reasons stated there. As I said earlier there were some public commenters who wanted us to look at these individually but, as Joelle has stated, I think that while that is beyond our purview as to whether or not they petitioned the NOP, we are going to be coming back to the same issues again and again because there is no conclusive evidence to show us that they are in fact safe.

Harriet.

MS. BEHAR: So the NOP also has a guidance document on the use of processed manure, which ties it to temperature and also to testing. So that could be something else that is discussed

or added to where there is a testing on E. coli and salmonella for processed, heated manure. And then that manure can be applied like compost up until day of harvest.

MS. OAKLEY: Joelle.

MS. MOSSO: Just a quick comment on testing. Testing in isolation is a verification method of a process. Associated with a validation, it can be reflective of something being safe.

So again, I am just reiterating is that with a process authority letter or with a FDA letter, that would be appropriate. Testing would be a sufficient way to prove food safety. In absence of that it is simply a verification method, just as it is in producing of food or of agricultural crop.

MS. OAKLEY: Harriet?

MS. BEHAR: I was just trying to find other places where we've tried to deal with this, this kind of issue. So we have some tools in the toolbox for looking at it and precedent for

making sure that the product that is being placed up until day of harvest is not going to contaminate the food with pathogens.

And actually that is a big deal in many places because sometimes organic can be seen negatively in the press. All they can use is manure and they don't have to say well wait a minute, we have a rule for manure. It can't be put on the crop without an interval and that we are looking at that. Whereas, in conventional agriculture, there is no oversight there on the use of manure.

So I think we do have something that we are working with, even if it is not part of the FDA -- you know we are not under FDA.

MS. OAKLEY: Sue -- and I did get the roll the finger look from Tom to hurry up conversation.

MS. BAIRD: Well, I was looking at the rule and it does say the producer must manage plant and animal materials that would not contaminate through any kind of prohibited

substance or residues or pathogenic organisms.

So even though the argument might be that there would be anaerobic digests that would be from plant materials, they would still have to verify there is no pathogenic organisms.

And then of course -- I've lost it. I lost it. Yes, three says un-composted plant materials. So again, even though it could be plant materials, it definitely states that it has to be able to prove to not have pathogenic organisms in the rule itself.

MS. OAKLEY: Tom, do you want us to wrap up the conversation?

DR. THICKE: I just want to thank you all for a good discussion here and Emily for a good, thorough review.

MS. OAKLEY: Thank you to the Technical Review. That was awesome.

Any other conversation, discussion before we vote? Okay, Tom.

MR. CHAPMAN: Okay, so the first motion before us is a classification motion. The

motion is to classify anaerobic digestate produced from nonsynthetic feedstocks as nonsynthetic.

The motion was made by Emily and seconded by Harriet. So this is, again, just to determine whether the material is synthetic or not synthetic. This motion is to determine it as nonsynthetic as listed here. A yes vote is to confirm that. A note vote is to reject that.

The voting starts with Dave.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. CHAPMAN: The chair votes yes.

Fifteen yes, zero no. The motion passes.

The next motion, which disappeared from the sheet because we're on copper sulfate now.

The next motion is to amend Section 205.203(c) Soil fertility and crop nutrient management practice standard, section (1) to add the words or undergo an anaerobic digestion process to the raw materials section; and to add section (4) which reads: Anaerobic digestion products that have been processed to reduce pathogens.

So, in essence, this motion is to allow anaerobic digestate without the withholding period. So a yes vote is to approve that; a no vote is to fail that.

Can someone scroll to the motion? The motion was made by Emily and seconded by Steve.

And the voting will start with Jesse.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. CHAPMAN: The chair votes no.

Zero yes, 15 no. The motion fails.

All right, it is 4:15. We are going to take a ten-minute break. So be back at 4:25 sharply and we will start on our other agenda items.

As you notice, we are running

significantly behind schedule. So we will most likely be delaying the CACS Subcommittee agenda to tomorrow. It will be the first item on the agenda tomorrow and we will start back up after the break with Crops again.

(Whereupon, the above-entitled matter went off the record at 4:15 p.m. and resumed at 4:29 p.m.)

MR. CHAPMAN: All right. If Board members can return to their seats, we will get started. We have a quorum, so we'll come back into order and, Francis, back to you.

DR. THICKE: Okay. We're going to begin with -- Emily has a little loose end to wrap up in the last one.

MS. OAKLEY: Are you guys going to be quiet out there?

MR. CHAPMAN: If members of the public could please take their conversations outside, that would be greatly appreciated. If members of the public could please take their conversations outside, that would be appreciated. Thank you.

Emily?

MS. OAKLEY: Yes. I just wanted to follow up because I meant to answer something with Dan's point regarding the manure feedstock for anaerobic digesting and whether it might come from CAFOs. I also wanted to clarify that, as I said, that can be of a concern and is of a concern to me. And we do have the contaminated inputs as something that we are looking at on the work agenda.

So that's all I wanted to say. Thank you.

DR. THICKE: Thank you, Emily. So next up we have strengthening organic seed guidance, and Harriet is the lead.

MS. BEHAR: Well, first, I want to say thank you to everyone that gave comments. There were numerous certifiers, including the Accredited Certifier Association, ACA. Numerous public interest groups, including NOC, OTA, and the Organic Seed Alliance, and numerous farmers that gave thoughtful and detailed comments; areas

where improvements were requested, including the wording around trialing varieties to determine if they are of equivalent variety, to make sure that the trialing was not mandatory but the documentation of the trialing would be mandatory if it were to be done.

Many did not like the additional recordkeeping to track the search for organic seed for each specific nonorganic seed used on the farm. Many also commented that clarity or examples should be provided for what is an improvement for year-to-year on the use of organic seed. Increased use of seed suppliers, more varieties of organic seed used, more acres planted with organic seed, et cetera, were suggested.

Many also did not feel that reaching full compliance with use of 100 percent organic seed was realistic and felt it could lessen innovation and production on organic farms. The attention of this requirement was not to ignore the allowance for use of nonorganic seed when a

seed of the requested or required quality, quantity, or variety was not available, including regionally adapted seeds, which was also brought up. So perhaps we do need to do some wordsmithing for more clarity.

Some also did not like the increased number of sources used for searching for organic seed from three to five. And for a variety of reasons, although others supported this change, improvements were suggested by numerous commenters. Many comments were also received concerning the extra scrutiny required of what seed is at risk of genetic contamination, would testing be required, who would pay, and perhaps we should wait for the seed purity proposal to be completed before we address this issue in this strengthening seed guidance document.

There was also questions about, would there be an allowed tolerance level for GMO presence. And just so everyone would know, the Crops Subcommittee is now referring to seed purity instead as genetic integrity because we

felt that that was really speaking more to the issue.

And for that reason, we could talk -- but the Crops Subcommittee thought that there were enough substantive comments that we perhaps should take it back to subcommittee and not vote on this document today.

DR. THICKE: Are you making that a motion, to refer it?

MS. OAKLEY: I make the motion to send it back to subcommittee. And this time I mean it.

(Laughter.)

DR. THICKE: I'll second it. Any discussion on that?

MR. CHAPMAN: Is there a second?

DR. THICKE: I did.

MR. CHAPMAN: Sorry. Francis. Okay. Steve?

MR. ELA: I would be in favor of sending it back. I think from what I've read we've got 95 percent of the document, but there

are some -- this is a really important topic, and I would like to see us get it right and consistent with what certifiers and farmers want.

And I think there is more that -- the little changes, while being small, are actually critical and we need to look at them and give a chance for more comment. So I would be in favor of sending it back and tweaking it just a little bit more.

DR. THICKE: Ashley?

MS. SWAFFAR: Yes. I think this is really one of the most critical documents that has come -- well, besides the other big one that -- one of the most critical documents affecting all sides of producers. And, you know, nothing makes me madder than showing up and doing a farm inspection and seeing them try to get by with a halfway-done seed search. And, you know, I think if we can strengthen this, it only makes the whole supply chain stronger. So --

DR. THICKE: Sue?

MS. BAIRD: Yes, I agree with that. I

do a lot of inspections in my 22 years of inspections, and I cringe a lot of times with the lack of -- the appearance of lack of effort to use organic seed, so I applaud the efforts.

As I did during the discussion, I am a little concerned about four-one-three, which points out contamination from non-GMO consideration, that we could use -- non-organic seed can be used if organic seeds cannot be sourced because of GMO contamination.

I think that that portrays a bad impression that our organic seeds would be contaminated and the nonorganic seeds might not be contaminated. I would like to have a little further discussion on that particular phrase within this document.

DR. THICKE: Unfortunately, that may be the case sometimes.

MS. BAIRD: Yes. That's possible, but I just -- it bothers me.

DR. THICKE: Anybody else? I guess we're ready to vote.

MR. CHAPMAN: All right. We'll move to a vote. The motion is to refer this proposal back to subcommittee. This is not a motion to conduct business, and so it follows Robert's Rules of Order, which would be a simple majority, so eight votes.

The motion was made by Harriet and seconded by Francis, and the voting will start with Ashley. A yes vote is to send it back to subcommittee.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MR. CHAPMAN: The Chair votes yes. Fifteen yes, zero no; the motion passes. And I think that's it for the day. Is that right, Francis?

(Laughter.)

DR. THICKE: One little easy one left.

MR. CHAPMAN: Oh, okay. Back to you, then.

DR. THICKE: Okay. Michelle, did you have the PowerPoint for that?

Okay. Next up is the proposal, hydroponics and container growing. And we have in this -- the main part of the proposal is the majority view, and then we also have a minority view. So what we're planning to do is I'm going to summarize the majority view, Joelle will summarize the minority view, and Harriet will summarize comments, and then we're going to have a round robin where everybody can -- we'll go around in a circle.

Everybody can have a few minutes to express their opinion on what we have been talking about, and then after that we can follow it up with further discussion.

So we have our slides here. As I mentioned, we have a minority and a majority, and I think I have that -- yes, here we go. It works.

So I wanted to review a little bit of the history. 2010 NOSB recommendation, people have quoted that extensively. It was called Production Standards for Terrestrial Plants in Containers and Enclosures (Greenhouses). That is what was -- kind of started this process. And based on that, the NOP told us we needed more refinement of that.

So the next step that came up is in the fall of 2016, the Crops Subcommittee put forth a proposal on hydroponics, aquaponics, and bioponics, and after we discussed it at the meeting we have sent it back for further consideration to the committee.

And then in the spring we came forward with a discussion document. It's not often we go from a proposal to a discussion document, but we went kind of backwards there. And now we are bringing forward the proposal based upon all of these discussions. And part of that process, the NOP asked -- put together a Hydroponic and Aquaponic Task Force, which reported in July of 2016.

And it was -- as you heard, it was contentious, and it split up basically into two committees, and a third one on labeling. But the one committee, the quote "pro soils," was -- called themselves the 2010 Recommendations Subcommittee, and the other one called themselves the Hydroponic and Aquaponic Subcommittee. And then, again, there was the Alternative Labeling Subcommittee.

And the NOP told the NOSB, "Take this task force and report the report to make a recommendation to AMS. Based upon your recommendation, AMS will take the necessary steps

to establish clear standards for these production systems. The public will be invited to provide comments during your deliberations as well as when AMS develops guidance or initiates rulemaking on this issue."

So the first committee, then, of that task force had several I'm calling here suggestions. Apparently, they were technically recommendations, but they were de facto recommendations of the subcommittee. And the first one was that systems of crop production that eliminate soil from the system, such as hydroponics, cannot be considered as acceptable farming practices. So their first stance was that all organic farming should be in the soil, without containers. The same as -- that's actually the same wording as came from the 2010 NOSB recommendation.

They said if you cannot -- oh, I guess I got ahead of myself. To limit organic certification to what is grown in the ground, with the exception of transplants, ornamentals,

and herbs.

If containers are allowed, kind of their backup, limitation of no more than 50 percent of the required fertility being added after planting, and no more than 20 percent to be added as a liquid fertilizer after planting. For perennials, these limitations should be on an annual basis.

Okay. And then there was the report of the Hydroponic and Aquaponic Subcommittee of the task force, and they didn't have a summary. I took everything on the first slide from the summary of the other committee. This one here, I pulled out what I could see as their representation of their -- kind of the essence of what they were saying, that organic hydroponic systems, a form of bioponics, contains substantial soil biology, including large numbers of bacteria, fungi, protozoa, and nematodes found in soil.

Secondly, they said farming is by nature site-specific, and the grower must be able

to uniquely adapt to his/her environmental constraints/resources. And then I kind of summarized it in the last bullet that they were advocating for hydroponic systems with adequate biology should be allowed to be certified organic.

So the Crops Subcommittee, with a lot of discussion, came up with -- well, with several iterations, as you saw, proposals and discussion documents. What we came up in this proposal is, first of all, aeroponics defined as a variation of hydroponic plant production in which plant roots are suspended in air and misted with nutrient solution.

And the motion in this proposal is to prohibit aeroponic production systems from organic certification, which we will revisit of course when it is time to vote.

Aquaponics, defined as a recirculating hydroponic plant production system in which plants are grown in nutrients originating from aquatic animal water waste, which may include the

use of bacteria to improve the availability of these nutrients to the plants.

The plants improve the water quality by using the nutrients and the water is then recirculated back to the aquatic animals.

And in the proposal, the majority view, we have a motion. I've got to look here. I can't see it. It's too little. Motion to prohibit aquaponic production systems from organic certification.

And then we get to a little more contentious area, and container production. We kind of defined it in the motion, what we thought was acceptable or what we would recommend. Motion that for container production be certified organic, a limit of 20 percent of the plant's nitrogen requirement can be supplied by liquid feeding, and a limit of 50 percent of the plant's nitrogen requirement can be added to the container after the crop has been planted.

For perennials, the nitrogen feeding limit is calculated on an annual basis.

Transplants, ornamentals, herbs, sprouts, fodder, and aquatic plants are exempted from these requirements. So you can see here, compared to the task force recommendation, we focused on nitrogen. They said basically all nutrients, 20 percent liquid feeding of all nutrients, 50 percent of all nutrients applied before the plants are -- the crops are planted.

The reason we went to just nitrogen is that nitrogen is really an indication I think of the way the system is operating. Nitrogen is normally one of the hardest elements to make -- nutrients to make work in your system. And if you can make nitrogen work, you probably can make all of the other nutrient cycle as well.

Furthermore, it is easier under just one element that you have to monitor, easier for monitoring, easier for inspectors and everything like that.

And, let's see, okay. So how do you calculate that? People have asked. Well, you have this requirement for 20 percent of the

plant's nitrogen requirement being supplied by liquid feeding, and 50 percent nitrogen requirement can be added after the crop is planted. And basically if you search around the internet -- and this is a common reference, the Knott's Handbook for Vegetable Growers -- you can find information, based on research, on what the requirements are of various crops for various nutrients.

For example, this one here has a table on the accumulation of nutrients by vegetable crops for tomatoes. It is based on yield, a yield of 30-ton per acre. The fruit will accumulate 100 pounds per acre of nitrogen. The vines will accumulate 80 pounds, and the total is 180.

So I see this as quite similar to the grazing requirement. As a dairy farmer, I have to prove that I am providing over 30 percent of my forage, my dry matter intake for the cows from pasture. And, of course, I get up to about 80 percent, so it's not a problem for me.

But basically the way you do it is you take some assumptions like, what is the average weight of your cow? And for me it's about 1,000 pounds for a jersey. And the dry matter intake is about three percent, so that's 30 pounds of dry matter a day. And then I subtract out how much grain they would get and how much hay they might eat, and the rest is grass.

And so this is very similar. We have the nutrient requirement, the nitrogen requirement for a crop, and so we can just basically take 20 and 50 percent of that and those are what we use. And there are other sources of this information. Many universities put out data on nitrogen uptake or nutrient uptakes of crops.

So we had a lot of objections, and the reason I'm going to put this up is that we have objections by some hydroponic growers that, well you can't do that. You can't put all of that on at one time, or you're going to have a problem. You're going to -- it's going to be toxic to the

plant or you're going to lose it all to leaching.

And one of the growers that did that -- somebody sent me some slides of it, and it's really an elegant system here. If you look at it, you can see this is what the root ball is, and this is what the substrate is. And so you can see you can't put too many pounds of nitrogen in there in the beginning of the year.

So you can see that this system could not work in that way. And if you look at a system like this that's bigger, larger containers, but they also will tell us that it can't work, and the reason being is that -- what is being used for a substrate, because this is what -- as we heard, is the common substrate, coconut coir.

And you can imagine this very porous material. It makes a great rooting medium, but if you pour in so much nitrogen it is going to be very available and it is going to leach away, and so on.

Now, if you compare that to a soil,

what is the difference? Some are indicating maybe there is no difference. But if you look at a soil and look at it from this perspective. This is a pie graph of what is in a soil, and often we have heard about the biological activity in the soil.

If you look at this pie graph of the total biomass of the organic matter in the soil, just a small portion is the living organisms, the fungi, the bacteria, protozoa, and so on. And then there is a whole range of different kinds of material in there, from very fresh residue that will break down quickly, to material that has been decomposing and some of it is getting more and more recalcitrant or more -- less resistant to breakdown.

And then you have the humus, which is -- it still does break down, but it's more resistant. And so there is the whole range of materials. Some will break down and release nitrogen quickly, some more slowly, some more slowly and more slowly. So that way -- that's

the way soil works, of course, and it can release enough nutrients for a whole season.

And if we take this a step further and look at a pie chart of the whole soil, that whole last pie chart fits in this little sliver here, organic matter, which can be -- five percent is pretty good. One to five or maybe more is a small portion of that whole soil, and the mineral matter comprises quite a big fraction. And the organic matter is intertwined intimately with that soil mineral fraction. And so that's all the habitat for those microorganisms.

And if we -- this is some data from Iowa State University -- is that a good soil will have like 10,000 pounds per acre of nitrogen in the organic pool. That is a pretty -- to think about that, compared to a pot with coir in it, that is a whole different system.

And what happens -- this was -- this slide was put together by some friends at Iowa State for water quality. This is below -- the brown part below -- this is below ground, the

corn plant there. And this shows how much nitrate leaches out of the system, but ignore that.

But the thing that you can look at is that there is constant biological cycling. And the problem here with, of course, corn is that it only has live roots in the soil for about five months of the year. Most of the year there are no live roots, so the nitrate will escape. But if you think of a plant with roots year-round or for the full duration, it cycles back and forth. This organic matter is constantly mineralizing nitrate out of the system to mineral form, and it is putting some back into the organic form. It is going around and around, and the plant is intimately connected with that process.

And so you can see how if you have a soil or a compost that has that ability to deliver nutrients over a long time, it has to be a whole different system than an artificial kind of system like coir.

So I'm going to -- this is the

hydroponic motion. It is very closely related to the motion for containers. The motion is that any container production system that does not meet the standard of a limit of 20 percent of the plant's nitrogen requirement being supplied by liquid feeding, and a limit of 50 percent of the plant's nitrogen requirement being added to the container after the crop has been planted, is defined as hydroponic and should not be allowed to be certified organic.

For perennials, the nitrogen feeding limit is calculated on an annual basis. Transplants, ornamentals, herbs, sprouts, fodder, and aquatic plants are exempted from these requirements.

I think I'm going to stop right there. I don't know if anybody has any burning questions. Otherwise, we can go on to the minority report.

MS. MOSSO: Just waiting for the slides. Okay. Since I don't have a clicker, I'll just -- oh, perfect.

Okay. So, first, I'd like to thank everybody for the opportunity to present the minority view to the public as well as to the board. I also wanted to call out on behalf of all of the people who contributed to the minority report that we had a very respectful discussion amongst the board, and I think we would appreciate it and hope to have that same sort of discussion in our community.

The organic community is one community and it is with our inclusiveness over these last many years that we have led to compromise and have generated the robust market that we see today.

I would also like to say both Francis' and my summary of the minority view and the majority view are over kind of top level, so please do take the time to read them in their entirety.

The minority view is a reflection of the diversity of the NOSB board and a subset of the board that has put forth the minority view.

It is also a reflection of the organic community and the different opinions that we see with our own community or diversity within our own community.

This has been evident from the NOP comments regarding the allowance of hydroponic that we have seen in discussion since as early as 2002, 2004, 2009, 2014, and 2016. In addition, as we have seen today in this meeting and prior meetings, we have obviously seen a distribution of public comments and support, as well as NOSB discussion of support, so with some members being for and some being against.

In addition, pro-hydroponic proponents within the hydroponic task force, obviously, that report, as has been discussed previously, is a bifurcated report that has support on both sides. Hydroponic and container systems are members that are already in our community. I think that's important to emphasize, is that we are not asking for the inclusion of those who have been excluded but the exclusion of those who have been

included.

This has brought more organic consumers to the organic table and has helped us grow the market to where it stands today. And amongst those organic producers, just as we see in in-soil or in any other producers, there is a continuum of methods and, importantly, consumers buy organic for numerous reasons.

Organic is equally important to all of them who buy organic products, and the impetus as to why they buy them is also important. Not to say one is more important than the other. Coexistence of soil and non-soil-based systems is possible, and the minority view would like to emphasize that supporting non-soil-based systems is not a mutually exclusive decision.

As such, we would hope and respect that the community would also hope and respect in that kind of regard. These are not to kick out one or the other, although sometimes it may feel like that way.

Just as we see a spectrum of soil-

based systems, we also see a spectrum of alternative methods. And we will go to the next slide.

As Francis noted, the NOP recently asked for further clarification on the 2010 NOSB recommendation entitled Production Standards for Terrestrial Plants in Containers and Enclosures to be able to implement the regulation in regards to hydroponic and container systems.

This minority view is a redlined, further clarified version of the 2010 NOSB recommendation. In order to produce this, the minority view group, based upon these recommendations or minority opinions that enforce responsible stewardship practices, address sustainability and conservation of resources, allow for innovation and production systems, which will ultimately increase access to organic food, be regulated and defined by a verifiable standard addressing the biological/ecological cycles in site-specific regions.

This is building upon the foundation

left by prior NOSB members and is an attempt to further elucidate the needs of the NOP and the organic community to reflect not just current producers but current and future consumers that will propagate our market even more in the future. It is with this consideration that the minority view has crafted additional language.

Non-soil-based systems -- in discussion, the minority view agreed upon that they can address unique and growing agronomic challenges that we have seen in public comment as well as just evident in day-to-day operations, some of which being drought. Coming from California, that is something we struggle with significantly.

Input minimization, fertilizers, pesticides, and herbicides, further reducing the reliance on inputs that are needed to travel far distances in some cases to production sites; food safety concerns, which may or may not be unique, or eliminated in some cases in these unique systems; and, importantly, the ability to address

arable land accessibility with special callouts to urban areas and areas of non-arable soil, further allowing for access to organic foods for more in our community.

In the 2010 recommendation that allowed compost to be utilized in place of soil because it was deemed equivalent to soil. The foundation of this equivalency was stated as follows. The foundational principle of organic farming is the practice of maintaining and nurturing soil health, so as to foster the proliferation of proper soil biology with their accompanying ecologies. Since all soil-dwelling organisms, such as earthworms, protozoa, fungi, bacteria, actinomyocetes can thrive in a properly composted -- properly designed, compost-based growing media producing the beneficial symbiotic ecological relationships found in soil. Such growing media should be rightfully considered soil.

However, obviously, as NOP asked upon the NOSB, further clarification was needed on how

to address ecology in these non-soil-based systems. The minority view has introduced a new concept in which we have asked the public at this meeting for comment, of which little was received.

But trophic levels as an introduction in attempts to find a compliant, organic, systems-based level that can give something that is physically verified and address an equal playing ground across all organic systems, focusing not just on microbial activity but on microbial ecology.

The trophic levels definition that has been introduced in this minority view is a hierarchical level of organisms within an ecosystem, each level consisting of organisms that share the same function and food source in the food chain of a defined ecosystem.

Examples of this would be Level 1 would be photosynthesizers, including plants, lichen, moss, and some bacteria and algae. Bacteria and fungi in Level 2, which would be

photosynthesizer predators. Level 3, shredders, which would include, but not just only including, millipedes, sow bugs, some mites, grazers of bacteria and fungi. Level 4, higher level predators, predatory and omnivore nematodes and earthworms would be examples of Level 4. Level 5, vertebrates, frogs, snakes, birds, and fish.

For those of you who are more inclined to see pictures, I stole this from the NRCS here to help us describe this. It is simply a graphic representation of the levels that were just described with the first filing through the fourth.

Now for the fun stuff -- actual regulations I have introduced. As we -- as I introduced prior, this is a further defined and redlined version of the NOSB's 2010 recommendation. So I will go through briefly trying to call out some of the significant changes.

Hydroponics. The definition largely

stayed the same. The production of normally terrestrial, vascular plants in nutrient-rich solutions or an inert, porous, solid matrix bathed in nutrient-rich solutions. The addition has been in regards to sprouts and fodder and are considered a processed material and not considered hydroponics.

Container production has been introduced with a definition. The production of normally terrestrial, vascular plants in containers. It can be certified organic if production requirements of Section 205.209 are met. And as I just described, trophic levels on the previous couple of slides.

Within this section, 205.105, you see the addition of aeroponics and hydroponics, which would be prohibited without organic being produced without the handle and use of aeroponics and hydroponics. The addition of 205.209, terrestrial plants in containers and enclosures, would further stipulate how our containers could be addressed within organic production.

Container and enclosure operations must meet all applicable requirements of Subpart B, 205.105. We'll go through this quickly knowing the time.

Producer operating a container and enclosure, operation with crops growing in containers using a growing media that does not include soil from the production site, is exempt from 205.202(b). And for those of you keeping track, that is the three-year timeframe from transition.

Second, which is a new amendment to this minority proposal, the producer operating with crops grown in containers shall comply with the applicable section of 205.203(a), which is that has been managed in accordance to the soil infertility in crop standard, which is Sections 205.203 to 206.

Further, that container-based producer is exempt from crop rotation and cover cropping requirements. In lieu of this, however, they would have to focus on practices that achieved

the functions and goals of crop rotation and cover cropping, and there are some additional examples that we could do for that.

And maintain or improve soil organic matter content. Examples are including, but not limited to, recycling and reuse of growing media, additional of composts and other compostable materials, earthworm replenishment, and microbial reinoculation. Provide for pest management in crops, soil-borne damping off controls for various low temperature heating methods, soil inoculation, using disease-suppressant bacteria and fungi.

Manage deficient or excessive plant nutrients. Examples are limited -- include, but are not limited to, recycling of the excess plant nutrients contained in drain water and media containers, avoiding so-called drain-to-waste systems, recycled nutrients to be reused in a greenhouse, or, alternately, growing a crop outside the facility and to address erosion control, again, were the examples given.

Four, the container organic system must address the requirements to conserve biodiversity and maintain or improve natural resources on the site-specific operations. The organic system plan should include the entire production site, containers and non-containers as applicable, as well as surrounding environment, growing media requirements.

Relatively few changes to the 2010; however, there is, as you can see, the introduction of the supporting of the four trophic levels, and the addition of growing media shall be a minimum of 50 percent carbon-based material.

And, finally, the addition that producers must recycle or reuse containers at the end of life.

These changes have been made to further clarify for the NOP how a standard may be met as well as providing the flexibility for innovative systems and organic production to continue to evolve.

In addition, some of the stipulations that have been added in the 2010 recommendation are specifically driving at recyclability, sustainability, and biodiversity, in the attempt that we can create a system that would be compatible and acceptable to address the concerns of many in the organic community and find compliant systems.

I will end there and open it up for discussion or public comment for Harriet.

MS. BEHAR: Can I ask a question?

DR. THICKE: Sure.

MS. BEHAR: So a hydroponic operation that would be in a warehouse, could that have the four trophic levels?

MS. MOSSO: As this is written, as long as it could meet the stipulations put here, it could be a compliance system.

MS. BEHAR: So they would have to bring snakes in or something or -- I'm trying to think about that fifth trophic level with the frogs. And, I mean, we're talking about an

indoor -- completely indoor space. I'm just trying to understand how they would be --

MS. MOSSO: It would have to be reflective of four trophic levels, yes.

MS. BEHAR: Okay.

MS. MOSSO: As written here.

MS. BEHAR: I have snakes in my greenhouse.

MR. CHAPMAN: I mean, as I understand it, they would need to meet the four trophic levels or they could not get certified organic. I mean, just like every other rule there is.

DR. THICKE: I have some questions about that, too, but I think we should do our round robin first, and then we can --

MS. BEHAR: Public comment.

DR. THICKE: A clarifying question?

MS. BEHAR: Public comment.

DR. THICKE: Public comment. Wait. Harriet.

MS. BEHAR: Okay. So I wanted to say, I don't know, I must have been naughty and they

gave me the job of summarizing these, but I really did appreciate all of the comments. It can be slightly overwhelming to have a controversial issue that we have to deal with, but it is also really part of our community to be passionate and want to be involved. And I find that, you know, kind of another hallmark of the organic community.

So both -- so I am going to kind of summarize each of the sites and then where they all converged. Current organic hydroponic and aquaponics operations want to retain their organic certification and passionately described how they meet organic rules and should be allowed to use the USDA organic seal.

Many comments were made of the food safety benefits of different types of ponic production, access to farming for beginning farmers of all types and ages, ability to grow anywhere, including urban areas, and providing healthy food with very low transport miles. Use of only organically approved inputs, mostly

fertility products, is the basis of their organic approval as well as the sustainability of their system.

There was discussion that there is less use of pesticides in these controlled environments compared to open-air, field-grown crops. Higher yields and year-round growing can be accomplished using this unique technology, and they felt that we should embrace this and not stifle innovation.

Some discussion was done on perhaps a label could better distinguish hydroponic from soil-grown in the marketplace. And, lastly, commenters made the argument that there is a need for more organic produce in the market, not less.

On the other side, the soil people stated that soil is the foundation of organic agriculture and that it is mandated in law and regulations in numerous places and numerous ways. Soil-based operations are also sustainable and offer greater ecosystem benefits. Hydroponics should promote their unique technologies with

their own label and not ride on the coattails of the organic label.

Foundational principles of organic production are tied to feed the soil and not the plant, as well as building continuous improvement with less and less reliance on outside purchased inputs. Numerous commenters commented on this reliance and a variety of reasons that that is not sustainable.

They did not have a difference -- no problem with having a different production system, but many felt very strongly it was not organic according to the Organic Food Production Act and the current regulations.

There is not just maintenance but improvement of natural resources in field and soil operations, and that is mandated in the organic rule. All commenters talked about what consumers want -- safe food, pesticide-free, local food, protection of the environment, long-term sustainability, and plants being fed through a biologically active system.

Some hydroponic container operators said they could change their system to meet the Crops Subcommittee recommendation, but most said they could or would not. Some soil-based farmers stated they could live with the Crops Subcommittee compromise, but some said they wanted crops growing in soil in the ground and not in containers.

They only gave me five minutes, so --

DR. THICKE: Thank you, Harriet. I warned Emily that she could be first, so why don't we go around and each take a few minutes to tell us what you think.

MS. OAKLEY: I feel so lucky to get to be first. No, I don't. I just did want to say that I feel like I have poured my heart out on this issue over the course of several meetings and on CS calls and hydroponic webinar. So there is not a whole lot more I can say that people haven't already heard. And just like others have said, this issue is so controversial because we are all debating our collective vision of organic

agriculture here. But I did again prepare comments that were written down, so that I would say exactly what I meant to say.

Yeah. This debate is about so much more than scale or geography, how big you grow or where you grow. And we have seen farmers growing large acreages and small acreages in the west and in the east and even in the middle, expressing their opposition to hydroponics.

But I feel as a smaller scale farmer myself I am here to really represent that voice on the board. And to that point, I often wonder like what is the breakdown of the number of USDA certified farms that fall within a range of acres grown.

So I asked the National Agricultural Statistics Service if they could give me that data. So from the 2016 organic survey, this is the first important statistic. 73 percent of all certified farms were under 180 acres. That is a big number. And if you want that broken down, that's 14,185 certified farms altogether. 22

percent grew under 10 acres; 23 percent grew between 10 and 49; 28 grew between 50 and 179. So taken together, again, that's 73 percent of all farms in 2016 growing under 180 acres.

Why is that important? It's just those numbers, because 73 percent is a significant number. It is a huge percentage of all certified organic farms in the United States. These smaller scale operations are not just a side note to the movement. They are the foundation of the certified organic label.

Meanwhile, in that same year, the NOP provided us with survey data that they collected, 2016, that only less than .4 percent of all worldwide certified organic operations were hydroponic, aquaponic, or container-based combined. And that was 121 operations in total of the worldwide operations.

Small-scale organic farming is a labor of love, not one done for profits. But there are far easier ways to earn a living that family-scale farmers do that is out of a passionate

belief system and the value of organic farming, which you have heard from in the past couple of days.

I have yet to hear from a single small-scale farmer in support of hydroponics or containers. In fact, an organic vegetable farmer in my region who also has a small aquaponics operation told me that he did not believe his aquaponic system should or could be certified organic.

I know some are legitimately concerned about taking away certification from those who have already been certified, those aquaponics and hydroponic and container systems. But in my view, a far greater concern is that 73 percent of smaller scale farmers -- and I don't want them to begin to feel sufficiently disenfranchised from the label as to leave it, which I think is a very legitimate concern.

And that is not a concern as much just to the small-scale farmers. That is concern to the entire label, and the larger scale operations

because we are all operating under the integrity and understanding of this label.

Soil-based farmers have expressed their strong preference for organics in the soil, in the ground. And to be clear, that is my own preference and the one I feel obligated to represent as a stakeholder. So please be fully aware that my support of the CS motion on container growing is a monumental compromise for me, one which my stakeholder community will not support.

I ask my fellow board members to meet me in the middle and realize that that, too, will mean for them not fully representing everything that their stakeholders want. And I feel that this compromise position is our highest and best effort and closest chance we will ever get to that.

DR. THICKE: For the record, I should say Harriet is next. Somebody has got to transcribe all of this.

MS. BEHAR: Okay. So I have been an

organic inspector for a few decades. I have taught organic farming I can't tell you to how many, probably thousands of people over many workshops and field days and answering questions on the telephone.

And I feel I really have a connection with people who are organic farmers, who want to be organic farmers, but I really have a connection with the rule. I mean, when someone says, "Harriet, will you go teach the organic regulation" at this conference or at a field day, it's like Harriet can do this in her sleep. Literally. Sometimes I wonder, what did I just do? But I know I gave the organic regulation.

And so looking at hydroponic, I am seeing it through the Organic Food Production Act and through the organic regulation. And, really, the word "soil" is woven in there in so many places. And it's not just as a substrate; it's as the system that is feeding the plant and feeding the planet.

So I wanted to just show when you're

soil-based agriculture -- you really are integrated with a greater ecosystem, and I went through an organic system plan, and I put in, hopefully -- it's the upper -- hello.

So the things that have to be done by a soil-based farmer in the organic system plan. Well, they have to do crop rotation. They have to use cover crops. They have to manage use of animal manures protecting water quality and food safety from pathogens. They have to put in pollinator and beneficial insect habitat. This is all from an organic system plan where people have -- wildlife habitat, providing food and habitat for wildlife. And although many farmers don't like to think of their crops as food for wildlife, it is.

Hello. I'm hitting it. There we go. No. Maybe, Michelle, you want to hit it. Okay.

Approved organic pesticides. Next? Maybe you just hit them for me, so we don't -- approved organic fertilizers and micronutrients. Next?

Food safety planning. That's not necessarily required, but it is done. Next?

Wildlife -- oh, I guess I had that twice. Okay. Next?

That it's soil-based because that is part of the rule. Next?

Compost is used. Next?

Diverse and robust biological life. Next?

Monitoring of crop health. Next?

Protection of ecosystem water quality. Next?

Minimize soil erosion. Next?

Water conservation. Next?

Protection of stream banks and wetlands. Next?

Use of organic and untreated seeds. Next?

Removal of plastics at the end of the season. Next?

Bat houses and birdhouses and frog ponds, which I have all of those on my farm.

Next?

Less sprays along the roadways and under utility lines, and that just kind of shows even the greater ecosystem. And I know in my neighborhood the utility company, every few years they come and they have me resign my no-spray agreement with them, and they complain to me because I made the whole neighborhood a no-spray area.

Mitigation against pesticide spray drift and GMO drift. Next?

Integrate cultural, biological, and mechanical practices. Next?

Recycling of plant residues and on-farm-generated nutrients. Next?

Conserve and improve biodiversity. Next?

Okay. So water-based agriculture can very easily be removed from the greater ecosystem. I don't know what's going on. You can do next.

And so there are things that are being

done that are on the organic system plan. Hit the button.

So approved organic pesticides. I agree, that's what they are -- so I just -- similar to the soil-based. Next?

Approved organic fertilizers and micronutrients. Yeah, that's there. Food safety planning. Yep, that's done. Some biological life. Yeah, I would say that there is some there. I would say it's not as great as in the soil. Yes, they monitor crop health. Next?

There is water conservation. Yes. Next?

Use of organic and untreated seeds. Yep. Okay. Next?

Mitigation against pesticide spray drift and GMO drift. Yeah, that happens. So let's compare. So here is the two different systems, and so the activities that are being done on a field-grown, soil-based system just has so much more activity going on. It has so much more benefits, not just even on that farm but in

the greater area. And I know that on my farm I see that, you know, the fact that they're not spraying the roadsides literally for a few miles because I got all my neighbors to say, "Don't spray under the roads, lay it along the roads."

So I just -- I'm looking at this from the regulation, how much the soil-based farmers have to do under an organic system plan versus what is capable of a water-based system and what they are asked to do. I think there is just -- the soil-based people deserve that organic label because they're working really hard.

And then the last slide is, while I was here, I got this over my email, that there is a lot of discussion about hydroponic being much safer for food, you know, has a better food safety. But I think we are basically equal there, that there can be outbreaks in a hydroponic operation.

This is in Illinois. It's an operation that produces over a million clamshells a year of greens, and they had a recall of E.

coli on October 27th.

So food safety planning, if you noticed, it was in both. So I don't say that one is better than the other. Both have to work at that.

So just in summary, I just -- I really feel that the organic regulation and the Organic Food Production Act fully support soil-based agriculture and does not support the label being put on operations that rely on outside inputs for all of their nutrition, liquid feeding.

DR. THICKE: Thank you, Harriet. Sue?

MS. BAIRD: I feel very -- I don't have all these pretty slides, so I'm just going to talk to you from my heart. I'm here to represent a public interest. I could almost duplicate Harriet's long history by a few years.

She actually was my mentor to become an organic inspector. I have inspected organic farms from all over the United States. I have taught organic inspection and organic certification in 18 states, in Mexico, in

Guatemala, in Peru, and in Egypt, and in England.

So I think that I know the regulation. I have many dear friends in the soil world, and I'm in the soil world. There's nothing I like better than to take my shoes off when it gets warm enough, and sometimes when it's not quite warm enough, and walk in my garden barefoot in the soil. I think there is something magical about being in the soil.

But, and here is where you guys are going to crucify me, I was in state government for quite a long time, and I was taught when you write a law or a regulation to implement the law -- and I'm going to read this to you. It is an 1807 communication from Thomas Jefferson to William H. Cabell concerning statutory interpretation. And Thomas Jefferson stated, and this is used through all kinds of laws and regulations and what must be followed.

"In the construction of a law, even in judiciary cases of" -- Richard, I don't know that word -- M-E-U-M, E-T, T-U-U-M, Latin I did not

learn -- "where the opposite parties have a right and counter right, in the very words of the law, the judge considers the intention of the lawgiver as the true guide and gives to all the parts an expression of the law that meaning which will effect instead of defeating its intention." And it goes on and on. And that is what is used to interpret laws even to this day.

And so going back into the intent of the law, we find -- and I think Tom brought several of this up. But even in the 1995 NOSB recommendation standards for greenhouses it contained this statement. "Hydroponic production and soilless medium to be labeled organically produced shall be allowed if all provisions of OCPA have been met."

And, of course, it was pointed out by Sam Welch and others that of course OCPA had soil written into it many times, and I am cognizant of that.

In March of 2000, a revised proposed rule stated they revised the initial proposed

rule. In their supplemental information they stated, "We have amended the term system of organic farming and handling to system of organic production and handling, and retained the original definition of the proposal."

The original definition was crafted to be consistent with the requirements of the Act. We have changed "farming" to "production" to provide a more encompassing term which may come to include such diverse activities as hydroponics, greenhouse production, and harvesting of aquatic animals.

The purpose of the original definition was to describe practices and substances consistent with systems of organic farming and organic handling as required by the Act, and to provide an explicit reference point for determining which practices and substances are most consistent with these systems.

In other words, there was an intent from the very beginning that at some point we would address and encompass hydroponics systems,

and I can't go back on that. More than that, I am a mother and I am a grandmother and I am a concerned citizen.

I am a product of -- at least from 1600 we traced our roots back to farming. I am a product of farmers. I am a farmer more than anything in the world. My members of MOA are farmers, and many of them will disagree with how, the position I am taking today. Some of them will agree.

So I'm here just to -- because, well, you can't please everybody. So I'm here to follow my heart, and my heart says land is disappearing. My people that have settled in northwest Arkansas in 1852, those people can no longer buy farms because -- I'm not going to use that D word that we use for the Yankees who have come down and bought all of our farms. Cannot farm -- buy farmland. They want to farm. They were raised for generations to be farmers. They can't find land. They want to raise food for their neighbors.

Last year we had a horrible incident in Missouri. Was it two years ago? I think it's still last year. Ferguson. Do you all remember Ferguson? Made national news. Urban young people are so disenfranchised. They don't have fresh food available. You can say, "Oh, well, you know, you can go to the grocery store," but many of these people don't have opportunities to go to the grocery store, and they need fresh food.

And there is no land. It's concrete. How do we supply those foods for the next generations? How do we do that? Well, yeah, we can establish community gardens, and we do that. But we have young people who have lost their hope. They can't afford tractors. They can't afford cultivators, and I don't know how that guy does 38,000 acres of certified organic vegetables because I sure couldn't do it. He must use a whole lot of help.

But I'm telling you, that little -- can I say those minority people on those concrete

don't have that opportunity, and they need opportunity to farm food. So reading this and seeing that the intent was that someday we would allow hydroponics and aquaponics, and all the new stuff that happens to be labeled as organic, I am not inclined to limit organic labeling to just soil.

And I'm sorry to the pioneers who have done such wonderful, wonderful work, in the soil. I'll always be there with you. I'll always put my feet in the dirt first thing in the spring. But I have to say no.

DR. THICKE: Thank you. I think that we kind of agreed to three minutes sort of, but -- so that's okay. We'll just give everybody a chance. Thank you. Scott?

MR. RICE: Thanks. Like all of my fellow board members, I have given this quite a bit of thought and listened to, of course, a number of comments and read as many. You know, I have been somewhat frustrated with the either/or and the with or against, and that always kind of

saddens me a bit to see that split, because I don't see this as an either/or, for or against soil.

I have had a long, great relationship with soil. I've farmed beautiful soil, I have farmed not-so-beautiful soil, and I have seen the reward of building that over a number of years and seen that -- seen the impact of that and have gained from that.

And, you know, we've heard about people having a preference for one of the other. I think, you know, part of me will always have a preference to that soil. But I also like to keep an open mind to innovation and see that as really one of the greatest skills that growers bring to farming.

And, you know, when I first got into this, into organic production and getting my hands dirty, I didn't really understand the attraction of hydroponics or soilless growing or container growing. But, you know, as I have learned more about these production systems and

seen them in action and visited them, I have seen some pretty amazing examples of it, including a recent visit to an operation that expressed quite a number of the benefits that Harriet shared with us and, you know, seeing them as being emphatic about building their -- building and feeding their soil and that media that they felt -- and their care of it with soil and the plants in it, with a significant focus on sourcing organic seed and moving in the direction of solely organic seed and moving those who supply them with seed to encourage organic seed trials.

They are looking at seasonal production where they are not using any artificial light. They start early in the season and late, and then get beds ready for the next year. There is a cycling of nutrients, a rotation of crops, and reuse of that soil media, and recycling of water, capturing CO2 from their heating systems and bringing that back to the plants.

And, you know, that was a pretty

impressive operation, and, you know, are they all like that? Of course not. I think in all of the production systems that we see, whether they are a traditional, so to speak, farm in the soil, or some of these alternative methods, that's one of the spirit -- one of the things that is the spirit of organic, of that continuous improvement.

That's something that we see in production. That's something that we in our certification works always recognize and seek to improve.

You know, when I asked operations like this and this -- this one I mentioned in particular, if they could comply with these parameters we have talked about, and they said, "Well, maybe, and, you know, we could certainly try." But, really, they are committed to the organic production that they have really been working with and toward for the last 12 years.

And it just sort of after continuously designing and adjusting a system and really

incorporating those organic principles, you know, it just kind of struck me as unreasonable and wasteful to ask them to completely start over to meet -- to meet something that it feels like they are already -- they are meeting.

You know, as a certifier, I'm sitting in the seat, you know, looking for as definitive a line as possible, so that, you know, our reviewers and inspectors can make consistent decisions about what -- or what is or isn't compliant. You know, these are theoretically dispassionate determinations that are made on issues, sometimes pretty frayed with a great amount of passion.

You know, as certifiers, we are certainly not agreed on this. Some of us have chosen not to certify. Others of course see a place for this production. The certifier that I work for, we have one operation. It's a pretty small operation that is one of those that I have seen as a so-called next generation grower who wanted to try the system but wanted to do it

using his commitment to organic -- to the principles and to the regulation.

You know, I kind of share, as one commenter noted, looking at this as more of an outcome-based system than an input-based --

DR. THICKE: I'm going to have to play Tom's role here pretty soon. Tom is giving me the swinging finger.

MR. RICE: All right. I think CCOF provides a good example of a way forward on this, and options included with labeling. And I don't necessarily see a negative impact of having a label of differentiation. I see that as perhaps another part of a compromise that we can move forward on. I'll leave it at that.

DR. THICKE: Thank you, Scott. Dan?

DR. SEITZ: So as a consumer member, and also as someone who has only been on the board for two years, this is a particularly difficult issue because I have been on a very steep learning curve. I haven't yet earned my Ph.D. in biochemistry, so there is a good deal

that -- of technical information that is pretty tough to assimilate.

But in having thought about this carefully, I will say that I am in support of the majority compromise position put forward by the Crops Subcommittee, and I will offer a few of the reasons that -- upon which I base that.

First, as a number of people have pointed out, the issue is not whether hydroponics, et cetera, should be allowed. Of course they should be allowed, but simply whether they should be allowed to have access to the organic certification. So I think that to me is key.

I want to say that I'm pleased that many hydroponic operations are interested in following the practices contained in the organic standard, such as avoiding GMOs, avoiding the use of conventional pesticides and such. I think that's incredibly positive.

So this sector, in my mind, has -- not only has its place but offers a lot of benefits.

Sue just mentioned urban employment, in some cases shorter distances between farms and consumers, and a number of other reasons.

However, I don't think that the lack of organic certification will impede innovation in hydroponics and in farming or the hydroponic industry in general.

A number of testifiers have referred to lawyers throughout the course of the couple days of testimony. I don't know if they were complimentary references or not. I am a lawyer. So I just want to say that the clear language and intent of the statute and regulations, as I read them, truly do limit the organic standard to soil-based systems.

So in OCPA, there are seven references to soil, none to hydroponics or container growing. In fact, the only references to containers are containers referred to in the context of handling.

And it is right up there very strongly. It says, "Soil fertility" -- under a

section called Soil Fertility, "An organic plant shall contain provisions designed to foster soil fertility, primarily through the management of the organic content of the soil through proper tillage, crop rotation, and manuring."

And, similarly, the organic regulations, there are 53 references to soil, often with the words fertility and improvement attached. Again, no references to hydroponics or container growing. And in the regulations, there is an entire section pertaining to soil fertility.

So those are indications that that was certainly not only the intent but very much -- it's not only intent that you have to read in the language, but it's there clearly presented.

The very good point was made that laws over the course of time may need to be interpreted differently, especially as circumstances evolve. But I would say in this case the continued interpretation of the law as requiring soil-based makes as much sense and as -

- is as relevant today as it was in the -- when the law and regulations were written.

And I think that's because we're seeing the dramatic effects of things -- of climate change, and that's not only on the environment but also on the infrastructure, with the example of the electrical infrastructure of Puerto Rico being destroyed in the recent hurricane.

And from what I've read, organic agriculture can play an important and perhaps even essential role in carbon sequestration. So I'd be hesitant to make a decision that may start to divert the conversion of conventional farmland -- or divert people from converting conventional farmland to organic to other approaches to agriculture.

We have also -- I heard one piece of testimony about the $800 million experiment of a large organic grower in trying to do a large-scale hydroponic operation, and only found that through that experience some of the plants were

more prone to insect and disease problems.

And one of the things that has come through again in things I've heard and in testimony I've heard is the resiliency of soil-based agriculture. So in the face of climate change, in the face of potential infrastructure disruption, it seems to me absolutely essential that we have a resilient system.

Just a couple of other points. A lot has been said about consumer expectations, but I would say that the European Union's direction in terms of its regulation of hydroponics was based on their view that consumers see soil-based as very much identified with organics, and that has been my experience in talking to people and visiting many stores and seeing all of the photographs of the farmers on walls and so forth.

DR. THICKE: Dan, you're at about six minutes.

DR. SEITZ: Wow, that goes fast. Okay. So anyway, in conclusion, I would like to say that based on my reading of the statute,

consumer expectations, and also the importance of learning from working with nature that I would support the compromise that was put forward.

DR. THICKE: Thank you, Dan. Tom? I'm going to be timing you, too.

MR. CHAPMAN: Yes. We had agreed to three minutes, just so folks know, and we definitely don't seem to be able to abide by the same requirements we put on the public.

(Laughter.)

MR. CHAPMAN: And I didn't time mine, so who knows, but let me get started right now. I only have six points to make, and I'll make them brief. I generally support the 2010 opinion -- the 2010 opinion that allowed for growing media composed of compostable plant material and compost that was stated by the NOSB to be rightfully considered soil.

I disagree with this proposal because it focuses -- the focus of this proposal is purely on inputs. Organic is so much more than inputs, and the compliance of organic production

systems should not be reduced to the source of nitrogen.

I find the carved-out exemptions fairly arbitrary and lacking in sound logic, and I find when you take a long and detailed review of the history of organic hydroponics debate that it's relevant, and that this issue has been here since the beginning, and that all previous boards have failed to sufficiently clarify to move forward with rulemaking on this subject to either set standards or to prohibit.

And, unfortunately, I fear we are about to follow in their same footsteps. Most criticisms on these systems have been related to sustainability and compatibility with organic certification systems, and principles are also applicable to in-ground operations as well.

Criticisms of off-farm inputs are relevant to in-ground operations as well as in media growers alike who utilize off-farm inputs. Concerns around the energy used for heating and lighting, carbon sequestration, mulches,

et cetera, are all applicable to in-ground greenhouses as well.

I have also yet to see an end-to-end comparison of carbon inputs to justify the claims around the carbon net positive and net negative, and it seems like these criticisms could be shaped in any direction at this time.

And my last point was not fully withstanding my first point of supporting the 2010 recommendation, I am intrigued by the proposal put forward by CCOF and would be happy to consider this further if it seems possible that the board could come to a decisive majority.

However, it doesn't seem like that is possible. The board is divided today, like it has been -- like it has been over the years, and it reflects the division in the organic community.

Additionally, I don't know if the CCOF proposal would be considered a compromise proposal by most of the in-soil growers we have heard here. And I similarly find it difficult to

call the current majority proposal a compromise when it's not supported by any of the leaders of the community that grows in media that are certified organic.

In summary, because this is inconsistent with the 2010 opinion, because it reduces organic production to input measurements, because this proposal ignores the history and diversity of views that bring people to the organic table, I just can't support this proposal on aquaponics, hydroponics, and containers as it is currently written.

It says 2:59 and 28 by the way.

DR. THICKE: That was very good. Thank you.

(Laughter.)

DR. THICKE: Ashley?

MS. SWAFFAR: So I first want to say that healthy soils are important, and I do farm in the soil and see the benefits of healthy soil and also the challenges of building healthy soils.

But I do not feel that organic production should only be granted to those who grow in the outer crust of the earth. We have heard from both sides about what their consumers say about organic and if it should be soil-based or if hydroponics should be allowed.

I feel like the key factor we are missing is partially where the customer lives. Someone buying lettuce or tomatoes in a state like Vermont probably has different priorities than the average consumer picking up a box of organic tomatoes in a big box retailer in the Midwest or the south.

The organic consumer has different reasons for purchasing organic products, and I truly feel the vast majority of those consumers who purchase organic products do so because they do not want GMOs or harmful chemicals in their foods. If we vote to ban hydroponics in container production, we would remove a large portion of fresh organic produce from the marketplace.

Another point is we haven't received any data that states that produce coming from hydroponics or containers is more harmful than produce grown in the soil. When looking to prohibit a practice, something I would expect is that we would need some type of justification that the practice would make the product more harmful, and we have not.

I would have hoped that we have -- that we could have came up with a compromise, but we did not. I would be open to looking at adding a label requirement for containers and hydroponics as CCOF had suggested, but I would say that for me that label would need to include the USDA organic seal.

That's it. Thank you.

DR. THICKE: Thank you, Ashley. Jesse?

MR. BUIE: You know, I kind of want to take a different approach to this issue. When I was honored to be appointed to this board, the first thing -- you know, I feel the same way I

did about protecting that organic seal as I did when I was a soldier protecting the American flag.

We live in a competitive -- we live in a capitalistic society where competition is good. The market will determine the continued success of hydro, aero, and aquaponics, and certified organic, if the consumer has full disclosure as to how these different operations work.

And I want to say it again. Notice I mention each one of them separate, and certified organic, and not attaching organic to a different method for survival reasons, which is what I constantly hear.

I believe that soil is the foundation of organic, and this subcommittee has really worked tirelessly to come up with a compromise. Good or bad, I have seen much work done in trying to get some consensus. And as everybody has mentioned, we don't have it yet.

But fellow board members, I kind of want to ask you something, and correct me if need

be. The elephant in this room is the fact that we are trying to solve a problem that kind of was created above us -- above the chain of command, and I hope I don't get in trouble. And I'm honest about that because I do want to serve on the board.

(Laughter.)

MR. BUIE: But the ultimate solution to the problem that we are talking about, the ultimate solution is for the NOP to enforce the regulations. It's just that simple. But that hasn't happened.

So I want to say now that what the Crops Subcommittee is presenting today to vote on is a very good attempt to come up with a compromise. I support the position of the subcommittee -- that the subcommittee has taken. But, again, I want to say the ultimate solution is that the NOP enforce the regulation.

(Applause.)

DR. THICKE: Thank you, Jesse. Dave?

MR. MORTENSEN: Thank you, Francis.

I'd like to first thank the farmers in the room, the farmers that took the time to call in for the conversations, and farmers that I have had the good fortune to work with in their fields in Mississippi, North Carolina, Virginia, Iowa, Nebraska, Pennsylvania, New York, and in The Netherlands. Greatly informed my perspective on what is a sustainable agricultural system, and certainly what I would expect of our organic labeled cropping system.

From my point of view, I have three concerns that I will flag, and I should just come out and say, and it won't surprise anyone I don't think that has heard me chiming in on things, that I support the majority view.

There are three things I will highlight, although I agree with everything else that has been said before me. But the three things I am going to highlight is input substitution, a climate-friendly sustainable production system, and then I noticed several people had an issue with my using the word

"natural," so I changed "unnatural" to "agriculture that defies coevolution." And I will explain what that means in about a minute's time.

So, in my view, there is no -- there is no lack of clarity on the issue about sustainability and about the carbon footprint of agriculture here. There isn't. At least if you look at the published literature and the farms that I visited, organic farms are -- this is a paper in Nature recently published, meta-analysis across many farms around the world, is storing 12 to 26 percent more carbon in the soil than any other form of agriculture. Period.

That's great. Thank you, organic farmers. Thank you.

On the other -- on the flip side of it, to produce a crop, if we -- and we tried to put these numbers into a number that we can wrap -- I could, and we could wrap our heads around, a tomato. A pound of tomato. An organic farmer in the soil produces a pound of tomato while

releasing .2 to .7 pounds of carbon dioxide, a greenhouse gas that we know is increasing in the atmosphere.

When I was young, like many of you, I was studying this at Duke University, 310 parts per million carbon dioxide. We passed the 410 million -- parts per million carbon dioxide concentration in April of this year. That was our experimental target we were thinking we would reach 50 years out when I was 30 years old.

So .2 to .7 pounds CO2 release per pound of tomato in hydroponic systems -- now this is a meta-analysis here, so we could argue the data. So I tried to present ranges so as not to bias. 2.22 to 10 pounds of carbon dioxide are released for each pound of tomato. That's an order of magnitude greater footprint carbon dioxide release for the production of vegetables in a hydroponic system.

In my view, that's not sustainable. Climate change is a huge deal for us, make no mistake. We've got three Nobel Prize winners

where I teach, and this is a huge issue. I grew up in New York City. I taught in Spanish Harlem. I have worked with kids in the inner city, and I have seen the subway systems flooded in New York from Hurricane Sandy where my kids live.

Lettuce production in the desert of Arizona and New Mexico, 82 times the energy required to grow lettuce in the ground, in the soil. 82 times. Unsustainable. That's where I'm coming from when I say the inputs are unsustainable and I don't see much of an argument against that, frankly.

Unnatural. Taking a plant that has evolved in the soil and changing the production system, so that we will now grow the plant in water and bathe it with nutrients, I say is unnatural, I say defies coevolution in important ways, and we know this. It's published. Roots produce whole suites of cells at the tips of their roots that talk to the microbial community in the soil, a diverse microbial community in the soil. They are called border cells.

They are washed away in a nutrient-bathed growing environment. Those very cells are sending signals back to the root cells and to the shoots that are mediating the phytochemical reaction of the shoots up-regulating the production of valuable secondary metabolites that affect human health in a very positive way.

We are running long on time. The argument about diversity in the soil is, to me, silly. I could spend an hour on that. And I don't mean to be condescending, but it's silly. We are taking bacteria and fungi and comparing that to soil where we've got 10 or so trophic levels, 20 functional groups compared to two. To me, we need to just talk about the data as opposed to imagined realities about biodiversity.

I'll stop there.

DR. THICKE: Steve?

MR. ELA: Well, this is hard. When I was a grad student, my office at the University of Minnesota in St. Paul was in the basement of Borlaug Hall. Norman Borlaug, father of the

green revolution, savior of the planet, in that he was going to with hybrid seeds and fertilizers -- we were going to increase food production and help the whole world feed itself.

And I came out of the conventional agricultural system and, you know, but when I was in school I looked at that a lot. And basically those kinds of systems were guaranteed to increase access, increase production. They were better and they were innovative.

I've heard that about GMOs. I've heard that about NPK fertilizers. And so I come today from the heart of the precautionary principal and of human hubris, and all of those systems have come back to bite us in the butt because they don't take into account the whole ecosystem.

As humans, we want to believe that we can recreate very complex systems and that we mimic them very well. And as we go down the road, whether it's with DDT or many of these other things, we find later that there are

unintended consequences.

So as a grower, and I've been farming my whole life, but full-time since 1990, for 27 years, starting conventionally, transitioning to organic, now as a full organic grower, I realize that we're farming very complex systems, and we don't know what is happening in our soils, yet we do know there is cycling, we know there is tie-up and release, we know there is carbon sequestration and release. We know there are multiple layers, including high-end predators and low-end plants.

We know it's a system that can create its own nutrition through nitrogen fixation and legumes, and one that includes multiple plant species. I'm a perennial plant grower. And if you come out, our crop rotation is all the time under the trees, multiple species, multiple levels, nitrogen fixation, and my goal as a grower is to grow all my own fertility. I'm not there yet, but that is my goal.

I don't believe that we can engineer

or redesign a replica of this complex system, and a complex system that we have yet to understand. All the soil science -- my background is in soil science. That was my master's degree. We only understand the tip of that iceberg, and so I do not believe we can redesign that system because we don't even know what that system is.

I don't believe that the -- and I'm a scientist, but I don't believe that the science exists to make a complete choice. With any new material added, we want to dive ahead and figure that it's okay, but so often we find that that new material isn't okay.

And for me, I have great respect for the hydroponic, aquaponics growers. They are very, very intriguing systems, and I believe in the integrity of those people and in their best intentions. And I believe that we don't know, and so I'm going that very cautionary. And at this point, until we have a better understanding of soils, I want to know -- I'm going to stay with the soil.

We have talked about water, and that has come up in a lot of the public comments. Here is a picture of one row of my farm. It's some plums. You can see two very different cover crops. The only difference in that row is water, and it's not the amount of water.

Those two sides were planted to the cover crop exactly the same way. They are both under drip systems that are exactly the same, providing the exact same amount of water. One of them has a drip line that is buried, and one of them has above ground. It is striking, and the only difference is how the water is applied, and it changes that whole ecosystem. Explain that to me.

It's not simply about nutrients being carried in water and plants taking them up. It's about a complex system right there that is night and day that I have no clue about. The other thing I believe is in this system that is resilient, it can respond to changes.

And to wind it up, I can say that in

part of my orchard, part of my ecosystem, the more I farm, the more I value letting the ecosystem function and regulate itself, and growing wonderful food with less, not more, management. The longer I farm, the less I know.

And I really became an organic farmer not because of what I know but because of what I don't know.

DR. THICKE: Thank you, Steve. Joelle? No. Michelle volunteered to turn that on, so let's -- it's probably not fair.

MS. MOSSO: I'm timing myself, so you're all right. I'm actually going to take a different approach, and I definitely support and can hear the conversation from all the growers in the room and the growers who have over time given comment. However, I also would like to emphasize that is not the entirety of our organic community, and there are a lot of people who participate, whether it just be in the purchase power of their dollar, or in a more involved way within their own maybe micro-organic community.

The beauty of our label is that we have been allowing inclusive methods that have allowed for innovative development, and allowing not just for development but for the purchase spectrum of organic consumers. And to deny some of the consumers what they associate as organic simply because one fraction of the community feels that it is such, I don't know that that is an appropriate thing to do at this point.

And so I would be more in support of a label that would give transparency and allow for free capitalism in this market, to allow the market to grow in an organic way, driven by the consumers as well as the producers. And I do think the absence of that consumer voice has been noted in this conversation. I think that is pretty evident in the last couple days, but it is certainly a voice which has gotten us to the platform and the foundation of our market, which we sit at today and have the luxury of debating a $50 billion industry.

They are certainly within our own

ecosystem of the organic community. And I think as we celebrate biodiversity, both in our production methods, we also need to recognize the import of everyone's opinion that has been participating in this organic community since the genesis of the program. And I will leave it at that.

DR. THICKE: Thank you, Joelle. I think you were the fastest there. Asa?

MR. BRADMAN: So this is the hardest decision I'll ever make, and it's kind of emotional in a way. A lot of what Sue said resonates for me, and I kind of want to just repeat everything that she said, and, plus, the opportunity for those different communities to have access to the organic label.

I am pro-soil. I mean, I don't think anyone here is anti-soil. And as Sue said, you know, my yard looks like the pictures that Harriet put up on the screen, and that is kind of where a lot of my soil is. At the same time, I feel like there is a lot of division in this

community, and I try to be a peacemaker. I like to see compromise, and I understand that this container production is seen as a compromise, but I don't think it reflects the full breadth of the existing community, including, you know, generational and founders of organic farming and their children.

There is division across this board. There is division in the community. There is division on the board of trustees of the organic center, which I participate on. There is division between certifiers, and there is division within certifiers. So I feel like there is a potential opportunity for compromise. I see that in the labeling front.

And, you know, last spring I said very clearly that I wanted to vote for something, not against something. And what I would like to vote for is a deeper compromise that allows for some labeling, allows for transparency, and also can set standards. I think there is a lot of great points about the kind of ick factor when we see

highly mechanized, controlled environment agriculture. And I think there is an opportunity to develop standards that address that in terms of organic.

And I don't know. I mean, some of the suggestions are that, you know, hydroponic have its own label, sustainable safe or something like that. But the reality is I think there is an intent in those systems to really adhere to the principles of OCPA and the principles of an environmentally productive agriculture, and I think that has to be validated.

Soil is not going to go away. And in terms of energy consumption, things like that, I think those are important issues and should be evaluated for every product. You know, if we had an organic strawberry in Maine in the winter, it comes from California. And it may have been grown in the soil, but is that really, you know, accounted for environmentally in terms of its carbon footprint?

You know, I grew up, you know, reading

Rodale magazines and, you know, in a way contributing to the community is my dream. I didn't want to work on this issue. I didn't even know it existed, you know, my expertise in things like inerts and sanitizers and stuff like that. But I feel, again, inclusion is better than exclusion.

You know, I see in the Salinas Valley and other -- dump truck loads of manure being trucked into farms that are growing, you know, organic in the soil. This manure may, in fact, come from CAFO-type organizations.

In meeting with, you know, an owner of a very large operation, there -- you know, from his point of view there is not enough, you know, the way he put it, S-H-I-T, to grow organic. And part of the problem was that the land is leased, and there is not the resources to have the kind of I think cycling that we might want to promote. But either way, that place was fully certified and fully organic.

And just to understand that there is

kind of extremes in all of these arenas, and I feel like, again, an opportunity for compromise could -- label compromise could solve some of these issues and provide transparency, and then we can also direct evolution in any system towards a more sustainable and environmentally sound system.

DR. THICKE: Thank you, Asa. Lisa?

MS. DE LIMA: Well, I'm not sure I can say it any better than Asa just said it. I definitely echo and agree with a lot of what you said, especially about I wish we had had an opportunity to work more on a standard to encourage the types of alternative production systems that do reflect organics, and that I think would resonate with consumers, the same as operations in the ground.

Hydroponic operations, like Scott mentioned, they don't all look the same. And I would really like to find a way that we can encourage the ones that are on the end of the spectrum that we are comfortable with.

I heard somebody yesterday in public comment equate folks who aren't solely pro-soil with people that deny climate change, and I took huge offense to that. I'm not denying that organic soil production isn't great for a lot of reasons. I'm definitely an environmentalist first. I got into organics because I was an environmentalist, and I saw organics benefit to help with a lot of different environmental issues. Obviously, climate change is the biggest one, but there is a lot of other ones as well.

So I don't think that just because a reduction system doesn't directly nourish the soil in the upper crust of the earth that that inherently makes it a harmful growing approach. I just think we need all the help we can get in addressing ag's impact on the environment and not just climate change. And I'm at this point not really willing to rule out alternative approaches.

Asa touched on labeling. When we first started this conversation, or I got

involved in the conversation two years ago, I was pretty opposed to a label. You know, I talk to and interact with consumers on a daily basis. You know, I don't have as many consumers as Alan from Natural Grocers was talking about. Maybe a quarter of that, a quarter-million consumers come through our doors.

And I initially thought you put another label out there or a version of the USDA organic label and we're just going to create more confusion. And I still think that. I don't -- it's not my first choice to put a label out there. To me, that's my compromise position is to put a label out there and let consumers make their choice.

I can't really speak for all retailers. We're not a close, tight-knit group. We don't have a lot of interaction with one another. I only saw comments from, you know, two retailers, and neither of them were pro-hydroponic, so we're not on the same page there. But they both did say that at a minimum

they would like to see labeling transparency, so the consumer can make the choice. And I would echo that sentiment as well.

DR. THICKE: Thank you, Lisa. A-Dae?

MS. BRIONES: So today is Schkopapani (phonetic) in my village, and it's a day my village celebrates our ancestral connections by going outside and digging holes in the dirt as a community, all 800 of us.

Indigenous people have advocated and argued for the protection of our lands, which is a member and I dare say a relative of our tribal community since creation, even if those lands are no longer in our ownership. Being indigenous, being Cochiti, is to advocate for a way of life that connects us to our environment, to our natural and human community, and to our food.

But what we can learn from this collective experience, which is in its 520th year, is that when we make an argument that solely relies on protection of the earth it is consistently defeated one way or another by

whatever fleeting economic interest exists of the time, or even solicits military assault like we saw in Standing Rock, but I digress.

Mr. Feldman said that the NOSB must not avoid fires. If I rely solely on my emotional attachment to arguments about protecting the earth, I would be essentially forging a fragile position within the organic community against those outside this community.

Perhaps this is a time where we find opportunities to create beneficial partnerships between indigenous people and the organic community. In order to do that, we need to find spaces for these communities to come together.

Before us is an argument to limit that space to those who only have soil. Law and regulation is meant to protect groups of people and discourage undesirable behaviors in our community, and I wonder who we are protecting when I see so few tribal communities, tribal people, black farmers, Hispanic farmers, arguing for only -- soil-only operations.

Quite frankly, the legal authority on this issue is conflicting. Unlike what Dan said, I don't think the law is clear. While OCPA limits -- clearly limits hydroponic operations, the NOP has clearly stated it is allowed. So any legal argument one way or another is going to be on shaky ground.

So with that, I echo CCOF's position that we should be a community that is inclusive. And if we take a lesson from nature, biodiversity makes any community stronger, and that includes our organic community. So I support a hydroponic label that will be regulated and standardized under the organic label.

DR. THICKE: Thank you, A-Dae. So you can get your tomatoes out. In three minutes, you can hit me with them. Okay.

I was milking cows the other day and I saw a frog. Once in a while, I've got to pick up a frog and take it out. And I realized that I have frogs in there; I have bacteria and fungi. This is a concrete and steel building here. I

have algae. I have millipedes. I have earthworms coming out of the cracks. I have birds that come in and build nests. And my inspector doesn't like it, but I let them do it sometimes anyway.

I pass my inspections really well, but I have all these trophic levels in my concrete and steel building that we are talking about for hydroponics. So I think that this trophic level thing is really a diversion. It's really a bogus -- it doesn't mean anything.

Like Asa has told us repeatedly, biology is everywhere. On our skin -- we know there are thousands of bacteria species that have been found on skin, a hundred different kinds of algae. Biology is everywhere. To say my milking parlor is soiled because it has all these trophic levels is nonsense, the same way to say that these hydroponic operations that have these things here are soil is nonsense, and I think that we shouldn't get caught into that.

And I looked at the CCOF proposal. It

means nothing. It means business as usual. If you're hanging your hat on that, that is no compromise. I think -- I am in favor of soil. I think we've got to compromise in the middle, and I think that others are looking for status quo, and I think that's not good.

One more quick thing I wanted to do is Tom has talked about the 1995 recommendation. And I found the letter from Michael Sligh, and he was there when that happened. He said that they were required to make recommendations on a whole range of things. And they just went through them real quickly, and some of them weren't going to vote for it. But they said as long as they put in a thing that said if -- how was that? If it can meet the standards, then they were okay to vote for it. But they are not in favor -- the rest of the guys were not in favor of it.

There was one person they said that was in favor of that thing, of allowing hydroponics if the rules allowed. So I think that really doesn't set any precedent, frankly.

So how am I doing for time? I'm done. Thank you.

One more thing that I can say is I don't like to --

(Laughter.)

DR. THICKE: All these arguments about water and so on, I call that environmentalist reductionism. I think we have to look at the whole system. Soil is a system, and we're not going to argue about all these things here. We can argue on both sides of them, and I think we just have to look at what organic farming is.

I'm one of these old guys, I started farming in 1975 organically. And so I guess that's why I'm on that side.

Thank you.

So here we are. What do we do next? Dan, what do you say?

DR. SEITZ: Well, one thing that I did hear that was in common among the two different positions that were put forth was the idea of labeling. Not everyone was necessarily

comfortable with labeling, but it did jump out as something of a compromise, and it certainly reflects the idea of transparency, consumer choice, and so forth.

So even though I think the paradigms that are reflected in the two views are pretty opposite, that is one area where I felt there was some commonality.

DR. THICKE: Okay. Thank you. Emily? I think we have to decide what we're going to do here, if we're going to vote. Have you got a suggestion?

MS. OAKLEY: Yeah. I was just going to mention the time factor of 6:20. So we could discuss more amongst ourselves. I'm not sure how far that will get us. Just in -- I know there was some hope that maybe we could discuss a possibility of a label compromise.

I think that that is maybe a little far-fetched. I wish that we could, but I don't think that there is enough consensus on that. That's just my personal view.

I do want to see us vote, as you all know, on this proposal today. So, yeah.

DR. THICKE: Harriet?

MS. BEHAR: So a good compromise is typically something nobody likes. Everyone has given up something, and they had to give -- they are not happy. So I have brought this up before. I know my fellow soil people maybe won't like it, but I'm going to bring up a labeling compromise. And probably nobody will like it, but I really think it is a compromise. And that would be -- and I don't even know if the NOP can do this, but I'm looking again to the regulation.

And we have a made with label for processed foods. It does not get the USDA organic seal, but it is a certified organic product. So there could be a hydroponic label produced with organic inputs, and it would be hydroponic with half -- then the label underneath produced with organic or organically approved inputs, or whatever, half the size of the word hydroponic, similar to the made with label.

And it has been a place that many processors have had an organic product. I know it doesn't -- it doesn't necessarily make me happy, but I want to protect that organic seal. I know that the hydroponic people want that seal, too, but I think that that's a pretty strong compromise for both sides. No seal, but you get the word "organic" there, similar to the made with.

And I think it's a recognition that hydroponic also does not meet all of the requirements as I had in my presentation that a soil-based operation meets.

DR. THICKE: So, Harriet, I think that if we were to talk about that, we'd have four hours ahead of us. So I am okay with voting now. Anybody have a problem with that?

MR. BRADMAN: Well, I mean, it looks like if we vote, it's not going to pass. So --

DR. THICKE: Are we going to bring a sword out here for you, Asa?

MR. BRADMAN: What was that?

DR. THICKE: Are we going to get the sword -- the sword for you?

MR. BRADMAN: I would like a sword right now.

(Laughter.)

MR. BRADMAN: Maybe I would throw myself on it.

(Laughter.)

MR. BRADMAN: Metaphorically. I'm probably doing that anyway.

But if -- I mean, Harriet, what you say I think is intriguing. If it's not going to pass, maybe we should send it back to committee. I know that everyone would groan, and then, you know, maybe an idea like Harriet just proposed can be considered.

I know that's probably not popular, but it's still at least something I think that should be said out loud.

DR. THICKE: Emily? And then who was next? Dan.

MS. OAKLEY: Well, I'm definitely not

in favor of a labeling compromise, which I guess you guys already know. But I don't think that voting on this proposal precludes further conversation on that, not that I want to have to be involved in it, but I think it's important to vote on this proposal for the public stakeholders or the community at large to see where the NOSB falls on this issue.

And, in fact, if there really isn't an ability to have a compromise on containers, it actually makes me not want to vote for that motion either, because that's a huge compromise for me, and I don't even want to see that. So it will have to -- it will give me something to think about.

DR. THICKE: Dan was next, and then Sue.

DR. SEITZ: Well, I don't think it's that hard to count the votes, given the different feedback that people -- I mean, just counting the votes, I can say pretty certainly that any of these motions are likely to fail.

And what I have heard from a number of people is the possibility that there may be some compromises here. I have heard the idea of labeling. I don't know if it would be along the lines that Harriet proposed. I have heard the idea of if we are going to allow hydroponics that it should be still a fairly strict standard, along a continuum of potential practices out there.

So I don't agree that every compromise is necessarily a lose-lose situation. Sometimes groups can work through very difficult issues and reach a higher-order decision sometimes. I'm not sure if this one is possible, but it can happen. So it seems to me in the face of the probable rejection of the motions that, why not send it back especially since there are some areas that may be --

DR. THICKE: Sue had a comment.

MS. BAIRD: First of all, and this is question for NOP, is there -- do we have a legal right to create a new label under the law?

DR. TUCKER: That's a good question. I think -- so, first, before I dive into answering that question, first, I'd just like to thank both everyone who gave public comment on this issue, but also just the thoughtfulness and passion that went into all of the board's comments. So thank you for that. There is a lot of soul and thought there. So I just want to say that.

I think there are some really, really interesting ideas and alternatives that have been raised through public comment and through this discussion. So I think what the next -- for us the next step would be -- in that kind of idea would be to sort of regroup after the meeting and talk about what the next steps might be here in terms of the subcommittee work. What does that look like moving forward? Because I think a lot of interesting ideas have been raised that are worth continued discussion.

DR. THICKE: Tom, you had your hand up.

MS. BAIRD: But I wanted --

DR. THICKE: And then I want to say something after. Oh, did you -- you didn't -- oh, you didn't do it. I'm sorry. Sue had her hand up.

MS. BAIRD: No. Well, I wanted to state that I think the public deserves us to make a vote. And I --

(Applause.)

MS. BAIRD: I was the one who stated I hate more than anything this me versus thee, but I think we've drug this on forever. We need to take a public vote.

DR. THICKE: I would agree. Tom?

MR. CHAPMAN: If there's a possibility for a compromise that would get the votes, I am supportive. But if there is not, and it is going to continue this on as another agenda item to bring up in discord in another six months, then I think we should vote now.

DR. THICKE: Okay. Did you have your hand up, Harriet?

MR. MORTENSEN: Yeah. I also am of the opinion -- I am of the opinion we should vote. I think we have multiple motions, so it's not clear where people are on the multiple motions. And I also feel like, man, how long are we going to drag this out? Let's just go for it and see where we are. Let's go for it.

DR. THICKE: Harriet, do you have something short to say?

MS. BEHAR: So if we do vote and it fails, you never know, does -- we do have containers still as a discussion document where at least in a container system, which hydroponics are, we could still work on it in some way or fashion, at least some aspects of hydroponic, in building some sort of -- but, I mean, there's no saying how that might work out.

We might not even be able to decide on artificial light or recycling or any of those things that were just in that discussion document. But hydroponic is a lot more than that, those systems. There is, you know, the

whole energy thing and whatever we want to discuss.

But in any case, I think it still would be somewhat on the work agenda through that discussion document. Am I correct? I see Paul kind of going like this. I don't know for sure.

DR. THICKE: Okay. Ashley has got something, and then I want to follow you. Go ahead.

MS. SWAFFAR: Okay. Yeah. I think it is important to take a vote on this because I think it will show the community how divided our board is. But I would encourage us, after this, if we think there is some type of consensus that we can reach on a label, I would like for us to explore that, because, honestly, if this -- it's a stalemate, basically.

If anybody can count the votes, it's a stalemate. Nothing will change. So it's going to be the same fight forever. So if we can figure out something reasonable, I would really like to see us work on that in the future.

DR. THICKE: So I am going to make a motion on aeroponics right now. I make the motion to prohibit aeroponic production systems from organic certification.

MR. CHAPMAN: The motion is there. You would either call the question if you want to end debate on it. The motion is already there.

DR. THICKE: That's right. Okay.

MR. CHAPMAN: Yeah.

DR. THICKE: I will call the question.

MR. CHAPMAN: So the question has been called. There isn't a second. Is there a second for it?

DR. THICKE: There is one on record, I believe.

MR. CHAPMAN: So calling the question is a motion to end debate, basically, and proceed --

PARTICIPANT: I'll second it.

MR. CHAPMAN: -- to the vote. So there's a second there. Is there an objection to the motion? If there is no objection, then we'll

just proceed to the vote. If there is an objection, then we will take a vote. It takes a two-thirds vote to end discussion and move to the vote.

There is no objection to the call the question, so we will just go to the question, which, sorry, I wasn't ready for it. So it's going to take me a second to pull it up.

So the first motion before us is on aeroponics. So the motion reads --

(Simultaneous speaking.)

MR. CHAPMAN: Yeah. I would prefer to go off -- if you have the written proposals, to go to that. Can you pull up the actual written proposal? I'd rather pull off that.

All right. I'm going to read it and then it will come up. Aeroponics. Discussion of aeroponic systems do not require -- the definitions come later. I guess the definitions are just in the document. So the proposal is, as defined in this document, motion to prohibit aeroponic production systems from organic

certification.

The motion was made by Emily and seconded by Harriet. It comes as a seconded motion from the subcommittee, and the voting will start with Dan. He's in the hot seat.

A yes vote on this means you are voting to prohibit aeroponics as defined here, and a no vote is you are rejecting this proposal, this specific proposal. And just so we're clear, the glossary here, aeroponics is defined as a variation of hydroponic plant production, which plant roots are suspended in air and misted with a nutrient solution.

Dan.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Abstain.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

MR. CHAPMAN: The Chair votes yes. The tally is 14 yes, zero no, one abstention. The motion passes.

The second motion -- can you continue scrolling? Is on aquaponics. Yeah. I'm going to first read the definition of aquaponics that is put forward in the majority position.

Aquaponics. The recirculating hydroponic plant production system in which plants are grown in nutrients originating from aquatic animals, wastewater, which may include the use of bacteria to improve the availabilities of these nutrients to plants. The plant improve water quality by use of nutrients, and water is then recirculated back to the aquatic animals.

The motion, which comes seconded from

the subcommittee, is a motion to prohibit aquaponic production systems from organic certification. The motion was made by Harriet and seconded by Jesse.

A yes vote would be to accept this proposal to prohibit aquaponics. A no vote would be to reject this proposal. The voting will start with Scott. Sorry. Is there a question?

MS. OAKLEY: Can we have further discussion?

MR. CHAPMAN: We've technically called the question, which would have been all four votes, but I'm fine with -- I mean, yeah, let's have a discussion if it's necessary.

MS. OAKLEY: Okay. Just a quick one. I just am confused if there are people that are able to vote to prohibit aeroponics, you know, is that going to fall across the rest of their voting as well? I'm not sure what the differentiation would be. Does that not make sense?

MR. CHAPMAN: No.

MS. OAKLEY: Okay. If you can vote to prohibit aeroponics, what is the parsing of the difference between some of the other systems that we have been discussing?

MR. CHAPMAN: I stand by the 2010 standard. That is the basis of my voting right now, and I have found that system to be disapproved by the 2010 system -- the 2010 recommendation.

MR. RICE: I would echo that as well.

MR. CHAPMAN: Francis, you are still technically running the meeting now. Do we want to proceed to a vote or --

DR. THICKE: I'm sorry?

MR. CHAPMAN: You're still technically running the meeting right now. Do you want to proceed to a vote or continue --

DR. THICKE: I'm not real sure what you're talking about, to tell you the truth.

(Laughter.)

MS. OAKLEY: Just that we voted to prohibit aeroponics.

DR. THICKE: Yes.

MS. OAKLEY: Which is a system within the hydroponics family and -- in my view, and I'm wondering what the differentiation might be for someone who can vote to prohibit aeroponics but then might subsequently vote to allow hydroponics. I was just wondering what -- they could help me understand their thinking.

DR. THICKE: Okay. Does anybody want to respond?

MS. OAKLEY: I mean, I think they have already answered that. If they feel that they have answered it with the 2010 recommendation, if that's their answer, then that's what they are telling me.

DR. THICKE: Okay. So are we going to have any more discussion, or do we want to -- any further discussion? Okay. Then I guess we can proceed to the next vote.

MR. CHAPMAN: Okay. So I'm not going to read the definition of aquaponic production again. I'm just going to read the motion. The

motion is to prohibit aquaponic production systems from organic certification. Motion by Harriet; seconded by Jesse.

A yes vote is to prohibit. A no vote is to reject -- is to accept the proposal to prohibit. A no vote is to reject the proposal. The voting will start with Scott.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: No.

DR. SEITZ: Yes.

MR. CHAPMAN: The Chair votes no.

Seven yes, eight no. The motion fails.

DR. THICKE: So we are ready for the next motion.

MR. CHAPMAN: Do we want further discussion on the next motion, or should we just proceed to the vote?

DR. THICKE: Does anybody want further discussion? I guess we can --

MR. CHAPMAN: Okay. Can we scroll to that? I don't believe I need to read the definition here. So I guess a container is defined as any vessel or associated equipment used to house growing media, and the complete root structure of terrestrial plants to prevent roots from contacting soil or the surface beneath the vessel such as, but not limited to, pots, troves, plastic bags, floors, mats, et cetera.

The motion from the subcommittee on container production reads as a motion that container production, to be certified organic, a limit of 20 percent of the plant's nitrogen requirements can be supplied by liquid feeding

and a limit of 50 percent of the plant's nitrogen requirements can be added to the container after the crop has been planted.

For perennials, the nitrogen feeding limit is calculated on an annual basis. Transplants, ornamentals, herbs, spouts, fodder, and aquatic plants are exempted from these requirements. The motion was made by Francis and seconded by Steve.

A yes vote on this is to pass this proposal and define container production as such. A no vote is to reject the proposal.

The voting will start with Sue.

MS. BAIRD: No.

MS. BEHAR: Yes.

MS. OAKLEY: Yes, only because I worked on this compromise.

DR. THICKE: Yes.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: No.

DR. SEITZ: Yes.

MR. RICE: No.

MR. CHAPMAN: The Chair votes no. Seven yes, eight no. The motion fails.

DR. THICKE: So next we have the motion on hydroponics. Proceed to the vote.

MR. CHAPMAN: Okay. Go ahead.

MS. BEHAR: So this is roots in water, correct?

MR. CHAPMAN: The --

MS. BEHAR: Not necessarily.

MR. CHAPMAN: The definition in this proposal, hydroponics, for the purposes of this proposal, any container production system that does not meet the standard of limit of 20 percent of the plant's nitrogen requirement being supplied by liquid feeding, and a limit of 50 percent of the plant's nitrogen requirement being

added to the container after the crop has been planted.

MS. BEHAR: Okay.

MR. CHAPMAN: Okay. So the motion is -- motion that any container production system that does not meet the standard of a limit of 20 percent of the plant's nitrogen requirement being supplied by liquid feeding, and a limit of 50 percent of the plant's nitrogen requirement being added to the container after the crop has been planted is defined as hydroponic and should not be allowed as certified organic.

For perennials, the nitrogen feeding limit is calculated on an annual basis. Transplants, ornamentals, herbs, sprouts, fodder, aquatic plants are exempt from these requirements. The motion was made by Jesse and seconded by Dave.

A yes vote on this motion is accept this proposal. A no vote is to reject it.

The voting will start with Harriet.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: No.

DR. SEITZ: Yes.

MR. RICE: No.

MS. BAIRD: No.

MR. CHAPMAN: The Chair votes no. Seven yes, eight no. The motion fails.

DR. THICKE: Tom, do you want to go on today, or do you want to wait?

MR. CHAPMAN: I would propose that we table this last item and we take it up first thing in the morning. Harriet and Francis, are you okay with that? Okay.

With that, we will recess until

tomorrow. Tomorrow our day starts at 8:30, and we will be starting with the Crops Subcommittee, continuing with CACS, and then proceeding with the agenda as listed.

We are now in recess.

(Whereupon, the above-entitled matter went off the record at 6:43 p.m.)

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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Fall 2017 Meeting

Before: USDA/NOSB

Date: 11-01-17

Place: Jacksonville, FL

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate record of the proceedings.

Neal R. Gross

Court Reporter

UNITED STATES DEPARTMENT OF AGRICULTURE

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NATIONAL ORGANIC STANDARDS BOARD

+ + + + +

FALL 2017 MEETING

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THURSDAY,
NOVEMBER 2, 2017

The Board met in Florida Ballrooms A, B & C of the Omni Jacksonville Hotel, 245 Water Street, Jacksonville, Florida at 8:30 a.m., Tom Chapman, Chair, presiding.

PRESENT
TOM CHAPMAN, Chair
ASHLEY SWAFFAR, Vice Chair
JESSE BUIE, Secretary
SUE BAIRD
HARRIET BEHAR
ASA BRADMAN
A-DAE BRIONES
LISA DE LIMA
STEVE ELA
DAVE MORTENSEN
JOELLE MOSSO
EMILY OAKLEY
SCOTT RICE
DAN SEITZ
FRANCIS THICKE

STAFF PRESENT

MICHELLE ARSENAULT, NOSB Advisory Board Specialist, National Organic Program

DR. LISA BRINES, Ph.D., National List Manager, National Organic Program

DR. PAUL LEWIS, Ph.D., Director, Standards Division, National Organic Program

DEVON PATTILLO, Materials Specialist, National Organic Program

DR. JENNIFER TUCKER, Ph.D., Associate Deputy Administrator, National Organic Program; Designated Federal Official

C-O-N-T-E-N-T-S

P-R-O-C-E-E-D-I-N-G-S

8:33 a.m.

CHAIRMAN CHAPMAN: Good morning, everyone. We're going to come to order.

So we'll begin this morning in a moment, back with the Crops Committee onto the CACS Committee, and then we'll continue on with what's already listed on the Thursday portion of the agenda.

Before we get started, we had a fairly important vote last night, and I just wanted to take a moment and ask the program if they could give some guidance on what they see as the next steps?

DR. TUCKER: First, good morning, everybody. Good to see everyone.

So, first, the Agricultural Marketing Service, the National Organic Program thanks the Board for your really, really, very thoughtful discussion on hydroponics, aquaponics, and aeroponics.

I really, truly appreciate your work

on the topic.

So just as a quick review, last night, the Board passed a proposal to prohibit aeroponics in organic production.

The Board did not come to agreement on the certification of hydroponics or aquaponic production systems.

So certification of all three types of operations remains allowed while USDA considers the Board's work on this topic.

In terms of next steps, we'll share the discussion that happened here back with our leadership team, and then we'll come back to the NOSB with their thoughts.

CHAIRMAN CHAPMAN: Thank you. With that, I'll hand it over to Francis to continue on with the Crops Subcommittee.

DR. THICKE: Thank you, Tom. We have just two, I think relatively brief, items to do.

The first is a discussion document on field and greenhouse container production, and Harriet is going to lead that discussion.

MS. BEHAR: Good morning.

So there was this discussion document to deal with specific areas where field and greenhouse production is done in containers.

We, unfortunately, did not get a lot of public comment on this.

However, we do have -- there was some comment on the artificial light, but not a lot of detail on why, more or less, or why different spectrums.

But we do have an open docket, so I really do encourage people to take a look at that discussion document again.

We are going to move forward with dealing with this issue, and perhaps, there might be some more items that will come forward for containers.

Because we knew this was just a start, depending on how the hydroponic vote went.

So, now that we are living with more containers, we'll be looking at container production in a little bit more detail.

So I encourage you to look at those questions again, and really do help us with these specific issues, and if you have other issues that you think we should address in container production, to bring it to our attention.

DR. THICKE: Thank you, Harriet. And the last item for the Crops Subcommittee is --

CHAIRMAN CHAPMAN: I had some questions.

DR. THICKE: Oh, I'm sorry. Go ahead.

CHAIRMAN CHAPMAN: So, when I was reading the public comment, it looked like there was a discussion on artificial -- I mean I'm struggling with this issue myself, to come to terms with what direction to go on.

Because some commenters mentioned about using specific spectrums of light to conserve energy, and other commenters talked about using full spectrums to mimic sunlight as closely as possible.

I was just curious, of those who have an opinion on the Board on this matter, if anyone

has kind of a thought of, you know, it's being pulled in two different directions?

MS. BEHAR: Well, yes, I guess I would be interested in hearing from the rest of the -- but I felt that there was not, to me, enough kind of background to help us weigh those different -- it was more I need this.

But not how does it fit into a system. That's what I'm kind of looking at more, because we're looking at standards, perhaps, for a system of production.

CHAIRMAN CHAPMAN: Dave has a comment.

MR. MORTENSEN: Harriet, now that this is going to become more important, we will need to spend a lot more time on lighting.

And we will need to spend a lot more time on thinking about the carbon footprint, since it's very clear that we're moving in a direction here, at least with these systems, where we're looking at a very energy-intensive production system.

The lighting will matter a lot, the

quality of lighting matters a lot, in terms of the energy consumption.

We just had a very interesting speaker at Penn State this week, who's very excited about growing food on Mars.

He's been studying light quality and energy efficiency because he's concerned that we're going to run out of capacity to grow food on Earth, because of our behavior.

So I've got a ton of information about light quality and light energy efficiency and use, that will help inform this.

I've spent a good bit of time reviewing it over the last couple weeks.

DR. THICKE: Lisa has a comment?

MS. DE LIMA: I agree with Tom.

But also, taking a step further back from that perspective and just asking about light in general, not just what type of light, full spectrum light, red or green -- blue, sorry -- but is lighting going to be allowed?

To what degree?

We saw a lot of different slides and pictures over the last few meetings, and I'm definitely not comfortable with the warehouses that only have artificial light and the plants stacked.

And we saw other speakers with sunlight-lit hydroponic systems; I am comfortable with those, so taking a step back and looking at it from that perspective as well.

DR. THICKE: Any other comments from the Board? Emily?

MS. OAKLEY: Yes, I would echo Lisa's comments that we should be discussing not necessarily what kinds, but if any should be allowed.

So, I definitely have reservations about any artificial light at all, probably not a big surprise there.

But we do have some information that Zea left us with before she left the Board that could be a good jumping-off point first.

DR. THICKE: And I'd like to add that

I think that we could look at the other countries, like the European Union.

What they're looking at, some countries are suggesting that, light could be used to maybe mimic natural daylight, only natural daylight cycles.

Joelle?

MS. MOSSO: I just want to echo, basically, what Lisa and all of you have said, as well as request that the public send what is being used currently.

I think that would be at least helpful for us all to know what is being used. But I definitely echo that it's a question of if, and then if, what kind?

DR. THICKE: Tom?

CHAIRMAN CHAPMAN: And then on the other one, the synthetic mulches, one of the comments that I found most relevant was, you know, how if these standards would be set for in-ground, not in an enclosure as well.

So, that's I guess the other one to

keep in mind and think about.

I think most people on the disposal are actually, from the comments I read, was fairly uniform in agreement on how to approach that one.

MS. BEHAR: It's called field and greenhouse container production.

So that's the other -- of course, artificial light out in the field, you're not going to find that too much.

But the question of specifically should the use of artificial light be limited to a specific number of hours per day, and there were people who said zero.

So there was the option there for no artificial light, all up to whatever.

CHAIRMAN CHAPMAN: So when you say field production, you mean full in the field and in the ground, not in the container?

MS. BEHAR: No, I mean this is for containers that are sitting on top of landscape --

CHAIRMAN CHAPMAN: Some of the comments said that the synthetic mulch requirements, whatever they are when they get rolled out for container production, should be the same for in-the-ground production as well.

MS. BEHAR: Yes, so it might be that we might eventually do a rule change or have something different because, currently, it says synthetic mulches must be removed at the end of the growing or harvest season.

And so if someone's growing blueberries and the mulch is under that, and they don't remove those blueberries in the containers for ten years, that mulch stays there for -- it's not the end of the growing.

It's the harvest season, right, that's ten years.

CHAIRMAN CHAPMAN: Yes, I understand that's also a practice in field crops right now as well, and orchards.

MS. BEHAR: Yes, I agree. It should be consistent.

DR. THICKE: Steve has a comment.

MR. ELA: Yes, that's been a dicey one, lavender, perennial crops.

I mean, we've gone around with certifiers of whether you have to pull it back, if you're using a more permanent, like a woven shape cloth, and there were non-compliance notices issued.

The USDA got to deal with that.

For the most part, I think they've been resolved in favor of if it's a perennial crop, you get to leave it on until the crop is done, but for a fruit tree, it could be 20 years.

And honestly, that fabric is not in good shape after that many years. So, there does need to be a little more clarification on that.

And just like they said, if you're in a container, what is the end of production?

Is it the end of when that container, finally, is not used, or the crop in that container is done?

So there's some nuances that

definitely need to be resolved in that.

DR. SEITZ: I just wanted to add the classic sort of answer that we have on this is it depends.

And when we go out and see different sites, whether it's blueberries or lavender or what have you, the inspector's looking at that cloth, and they're seeing if it's degrading or getting there.

And that's a conversation with the operation, but it is something considered.

So again, important to consider for all types of production.

MS. BEHAR: And I believe in the discussion document, there are some mitigation measures for preventing quick breakdown, like putting down wood chips or other mulches.

Because there's more than just the covering of the land.

There could be runoff issues and heating, and whatever.

So there's a lot to look at in

especially those longer, not the thin films, but the woven cloths which can withstand multiple years.

DR. THICKE: Steve?

MR. ELA: I have one other concern, it's sort of related to that, but especially in the container production, where we've heard prunings being incorporated in the soil.

I just have to say I'd like more input, because if you're incorporating things in the soil but your plant's not in the soil -- I mean you're on a container, but you're incorporating things in the soil -- you've got kind of two different systems there that aren't linked.

And so if you're incorporating these things in the soil, where is it going? And it almost becomes then a nutrient sink that's not being utilized.

And so I see a disconnect, or if you're going to cover crops in those oils in the alleyways between containers, but that's not --

you have a disconnect there.

And I'd like to wrestle with that a little more, because it doesn't totally make sense to me.

DR. THICKE: Any other comments? Okay, thank you.

So we'll move on onto the next item, which is an update on newspaper.

We had looked at the possibility of an annotation change, and Harriet's going to lead that too.

MS. BEHAR: I don't know if there's anyone still on the Board from when -- were you on the Board? Yes, okay.

So, 2014 or 2015, the Board was reviewing newspaper at sunset, and there was discussion about the annotation, which had no glossy or colored inks allowed, but then some of those inks -- and there was new technologies that maybe the annotation could be changed.

So, we did get a Technical Review, and we reviewed it, and it's true that some are more

plant-based and are not as problematic, but they're not as widely used as some of the others.

There's still a lot of carbon black and other issues, but really, one of the main issues is the stream, and that the newspaper is all lumped together.

And so it's really hard to change the annotation when all of it is going to be -- you're not separating out the good players from the bad players, or the good inks and the better-quality glossy.

So when it does come up for sunset, we probably will not change the annotation, but we really do appreciate getting the update through the TR so we can keep monitoring that issue.

DR. THICKE: I wanted to add that another complication we talked about in our Subcommittee is that nowadays, a lot of newspapers are using colored ink on their regular newspapers, even little hick town newspapers like mine, the front page always has a colored picture on it.

And so that complicates things.

Emily?

MS. OAKLEY: Yes, to that point, I think it actually raises the question of whether the annotation is strict enough.

So I don't think we would have any regression in the annotation.

I think the question is whether or not we can adhere to the principles with the current annotation.

And if folks haven't read the TR, it's definitely one that's worth looking at.

MR. ELA: I would echo that.

If anything, the discussion made me think we should go the opposite way, if not allowing more but allowing less, because of that area.

I mean, there's color inserts, there's color -- you know, and you recycle the paper.

You don't go to the recycling center and recycle, oh, this add and that add, it's all commingled.

I mean, it's pretty clear to me it's actually probably a bigger issue than it used to be.

Even though industrially, we've moved to more soy-based inks and things, there's enough -- it's commingled now that it's an issue.

DR. THICKE: Any other comments on this issue? Harriet?

MS. BEHAR: So, when we do come up for sunset, well, I guess we could just still discuss if we wanted to change the annotation and make it stricter.

But if people can find newsprint, and I go to my recycling center, and I really appreciate the people who get the Wall Street Journal, because there's no color in that.

I'm always looking for that neighbor's bundle of papers. I've actually even thought about just asking them to give it to me directly.

DR. THICKE: You mean you don't get the Wall Street Journal?

MS. BEHAR: I don't get the Wall

Street Journal, no.

And actually, the organization I used to work for, MOSES, when we went to color, we did get quite a few farmers who wrote in and said, now I can't mulch with your paper anymore.

And we thought, well, that's true. They gained knowledge, it was for their brain, and then afterwards, it was for their gardens.

CHAIRMAN CHAPMAN: Okay, thank you. Unless there are any other comments, I think we're finished. You can take it, thank you.

Thank you, Francis, and the Crop Subcommittee. You guys had definitely a big slate of work this last semester.

Up next is the Compliance, Accreditation, and Certification Subcommittee, with Scott Rice as Chair.

Scott, I will hand the Meeting over to you.

MR. RICE: Thanks, Tom.

The first topic we have on our agenda here is a proposal for eliminating the incentive

to convert native ecosystems to organic crop production.

Harriet Behar was the lead on that, and I will pass it off to Harriet.

MS. BEHAR: Okay, so there was quite a few really good comments.

There has been, in the past, a discussion about where we could really find a place to put this. Where does the Organic Food Production Act deal with this?

If we were looking to do an extended period of time, how do we justify that?

We kind of used the section of the Organic Food Production Act that says -- and whatever else we find might be useful for us to have in our regulation.

But I think the robust public comment on this issue -- and really, the vast majority of it, I think I only saw one negative comment on this -- was yes, we should do this, that this is part of organic agriculture, that we are protecting the very important ecosystems that

give us so many services, not just in farming but as humans on this planet.

Caring about wildlife, caring about just a diversity of plant life as well, and to protect endangered and threatened species.

So with that, I have to thank Jo Ann Baumgartner and the Wild Farm Alliance.

She really reached out to many people in the community, and probably got even more comments than we would have had, had she not done her work on the ground.

And so she does have very detailed comments, and the vast majority of the commenters referred back to her comments on changing the definition and -- no, changing our wording in the rule and adding a definition of what a native ecosystem is.

So I'm not sure if we want to discuss some of her comments now, because I am going to recommend that we send it back to Subcommittee. I'll make that motion.

MS. OAKLEY: I'll second.

MS. BEHAR: So we can review more in detail and work with the program, which we had done before, to make sure that whatever we are recommending, there is a possibility of eventually having rulemaking.

MR. RICE: Thanks, Harriet. Some discussion, Emily?

MS. OAKLEY: I think that the public comments revealed some weaknesses in our motion wording that I don't think we intended.

I think that there are definitely loopholes that I didn't foresee, and I thought we were trying to address them.

Clearly we did not do that well, but our intention was not for those loopholes to exist, so I appreciate the work of others in thinking that through better.

And thank you, Jo Ann, for that work, and also NatureServe.

And I agree we probably do need to define native ecosystem. We did discuss that briefly in the Subcommittee.

We thought that the motion helped define it, but I think it's clear that there's enough confusion.

I know there has also been some concern over that step down from a native ecosystem in areas that are recovering in the period of time.

So there's a little more controversy in that area, so we need to address that as well. But I think that concerns over how to enforce this were actually generally pretty mild.

And I think that people have expressed an understanding that those concerns can be overcome.

So I hope we can take this back and give it a little bit more work and incorporate some of the public comments, or a lot of the public comments that we have received.

MR. RICE: Tom?

CHAIRMAN CHAPMAN: Yes, I still have some concern around defining a native ecosystem, and I remember, the strategy of the way we wrote

our proposal was to avoid having to write something in detail around it.

It was somewhat being defined by the practices that would have occurred on that land before.

I agree that with the public comment that we received, we should send this back and take it under further review.

And also, some commenters pointed to the IFOAM way of regulating it, and that seemed like a fairly elegant way that we had struggled with, to try to almost do a similar but different definition too.

But one of the biggest concerns I had was the request for inspectors to be able to go out and identify these native ecosystems while they're doing these inspections.

And it seems like we ask a lot of our inspectors, and that just, to me, seems a step too far, from back in my certification days, to expect them to be able to do that across the wide range of ecosystems they may encounter.

And I know we have some folks on the Board who do inspections, sorry to put you on the spot, but I'm curious to hear your thoughts on it, or people who also still work in the certification range.

And I'm interested to hear your thoughts on it as well.

MR. RICE: I'm happy to give some thoughts.

I kind of share that same concern. While I think there was good support of this from the certification community, that was probably the primary concern with this, was that verification step.

And we've seen really great inroads on adding biodiversity and natural resources to that slate of things that inspectors are taking a look at in the field.

And we've seen some really good tools via NRCS, and certainly, again, Wild Farm Alliance.

We had some good partnerships with

certifiers on that, but we see a continual addition of things for our inspectors to add to their reports, what they're observing, and I think that adds to the time and ultimately expense.

And it's certainly valuable in looking at these things, but we may reach a point where some ideas have been expressed to have perhaps an inspection that focuses more specifically on the biodiversity and natural resources, and in turn, maybe these native ecosystems.

And definitely looking at those more specifically, but I think just looking for where that technical assistance and training can come from to help bolster that too.

MS. BEHAR: I actually don't think there's going to be that much on-site review, because it's going to probably be more in the application of the Organic System Plan, how long it's been since it was tilled.

And if they say, well, the land's never been tilled, then it would put up a red

flag.

But let's say it had been tilled three years ago for the first time, or something like that, we won't really have a chance to look at it. But we'll have to figure out had it been a native ecosystem before it had been tilled?

I don't think that the inspector -- I mean, typically, the first inspection is during the crop year of what you're going to certify. So at that point, it would have already been destroyed.

So unless you have fringe or something like that that you're looking at to try to judge what might have been there, I don't think it's going to be so much on site.

But there are a lot of tools, both internationally and domestically, for researching what Regions have threatened species, what Regions have intact native ecosystems and that sort of thing.

So, I think it's going to be somewhat of choosing the right questions in an Organic

System Plan, to then figure out which -- I think 99 percent of the applications, you're just going to breeze through the Organic System Plan.

And then there's going to be a one percent that may take a little bit more review, mostly online to see what could have been there before.

MR. RICE: Thanks. We have Ashley, then Emily, then Sue.

MS. SWAFFAR: So I think organic inspectors are very bright people, but I do have a little bit of worry about some different Regions going into looking at the farms that I inspect, going into Montana.

What is that native ecosystem?

It's a very different landscape than Arkansas and the Midwest, and I think there will need to be quite a bit of inspector training on making those judgment calls on what that is.

And so certifiers will have to work with inspectors, definitely, on that.

MR. RICE: Emily?

MS. OAKLEY: I agree with Harriet, I don't think this is probably going to be something that all or that many inspectors encounter on a very frequent basis.

So I think there could be some cost-benefit within certifying agencies in terms of training, a few maybe more in depth in terms of some of the native ecosystems around them, or that they're expected to encounter.

And I also think that a lot of this will take place prior to the inspection, as Harriet mentioned.

So I think a lot of the ground truthing would take place with the Organic System Plan, and then afterwards.

I also think it probably isn't, as I said and has been documented before, a huge percentage of operations.

So I think while it may increase cost in a few instances, I don't think it will be widespread.

I also just want to point out the NOP

guidance on biodiversity, and there is an expectation that certifiers and inspectors have a knowledge of biodiversity that may not necessarily equate into native ecosystem knowledge.

But I think there's a clear dovetail there.

MR. RICE: Sue?

MS. BAIRD: I remember one of my first inspections when I went to Montana. And what I said to them was how many cows per acre do you run?

And they laughed, of course, because in Montana it was how many tens of acres do you run per one cow.

So I do think there will be a learning curve for the inspectors if they go to other areas.

But on the other hand, I've inspected for probably 23 years now, and I like new challenges. I think that it will be, as Harriet said, a lot of it will be how you design your

System Plan?

And how that review is done up front, because we've been reminded many times, the inspector is the eyes.

It's the certifier who designs that System Plan. We only verify to that System Plan. That's our job as inspectors.

So with training, I don't think that it will be a problem. I think we're going to make some mistakes, we may ask how many cows per acre that first time, but we'll be educated.

MR. RICE: Yes, I would just add that responsibility will be on the certifier.

And that, in turn, leads to having consistent tools that we can be turning to, to make these determinations in a consistent way.

So definitely further need for training all around on that. Harriet?

MS. BEHAR: And so I am thinking that in the next proposal, there might be some suggestions for what could be asked in the Organic System Plan to kind of help the

certifiers and the operators up front.

Because this is a little bit kind of new ground for us, and it's a native ecosystem that we don't want to destroy.

So I think giving some options; it may not be, this is what you should do, but something like this, will take a little bit of the fear, both for the certifiers and the operators.

And I'm always thinking about the operator; when they read the Organic System Plan, can they complete it? Is it practical? Does it make sense to them?

So I'm looking at it from that angle too.

MR. RICE: Dave?

MR. MORTENSEN: Yes, I was struck by Bob Noonan's comments yesterday, the farmer from New Hampshire.

And one of the things that has been quite an eye-opener for me is the extent to which regional variation exists across the country. I knew that already.

But so the Northeast was all under ag 100 years ago, most of it, and a state like New Hampshire, a lot of it is no longer in cultivation.

And they have an initiative underway in the state to actually grow their own food in a local regional context so that there's an interest in exploring how that land is made available to provide their own fruit and vegetables.

So I think as we go forward with the proposal, I'm totally on board with the ecosystem services and protecting the environment, but I think it's entrusting to be sure that we keep in mind the regional variation across the country, and how land use plays out.

MR. RICE: Sue, and then, I think, Harriet, we're going to have to wrap this up pretty quick here.

MS. BAIRD: I totally agree with Dave. We do need to be cognizant of regional differences, and it brings to mind some of the

native prairie grasses in Kansas and Nebraska that have never been tilled or plowed.

And yet they hay them and they use it.

And because they do those kind of cultural practices, they probably fall within this criteria.

And yet some people are protecting the environment by using cultural practices.

MS. BEHAR: So on my own farm, I recently went through kind of an environmental assessment, because I'm in an NRCS program.

And I was supposed to put in some frog ponds, because I love amphibians.

And there are a lot of online resources for determining -- I mean, they were able to figure out -- gave them a map, gave them the coordinates of where it was.

And they could say, is this an area where there's an ecosystem?

Because they would not have allowed me to come in and do those shallow scrapes, if there would have been an issue.

So I think there's a lot of tools out there to help us with that determination.

MR. RICE: Okay, one more from Emily. Oh, no? Okay.

All right, we have a motion on the table. Are we ready for a vote?

CHAIRMAN CHAPMAN: Yes, I'll take it from here, or maybe not because I don't have my voting sheet open.

All right, who are we starting with?

MS. BEHAR: We're starting with Emily.

CHAIRMAN CHAPMAN: All right. So, the motion is to refer this proposal back to the Subcommittee.

The motion was made by Harriet and seconded by Emily.

A yes vote would refer this back to the Subcommittee, a no vote would continue discussion here.

Voting will start with Emily. Sorry, it's early in the morning for me still. Emily?

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

CHAIRMAN CHAPMAN: Chair votes yes. 15, yes; 0, no. The motion passes. Scott?

MR. RICE: Thanks, Tom. Next up on our agenda is a proposal regarding excluded operations in the supply chain. I'll bring that one up here.

We started this discussion with the intent to suggest a regulatory change to remove exclusions; however, we received some

encouragement from the program to look at this using existing authority given there's not a real friendly climate to additional regulation.

However, at that time, we kind of changed tack and explored ways to address those excluded operations via strengthening of guidance.

About that same time, we saw this fraudulent grain issue emerge.

And as we finalized this proposal, NOSB received, of course, a request from the program to add the issue of oversight of imports to our work plan.

We considered the idea of tackling all of that in one document; however, we pulled back on that, and decided to continue as planned and address the NOP's request as a separate issue, which we'll be taking up very soon.

And we then focused in this on the definition of an exempt operation and the requirements that must be met for an operation to, indeed, be considered exempt.

And focusing on the aspect of labeling, that to be exempt, that product must be labeled as organic, include a certified organic by-statement, and an ingredient list as applicable.

We found labeling a product or containers to be required based on the text of 205.101(b)(1).

Also, 303 requires packaged product labels for organic to identify each ingredient with organic, below an identifying statement, and a certified organic by-statement to identify the certifying agents, and certified handler of the finished product.

Operations involved in the sale and distribution of retail-labeled products would be exempt if such products were already packed and remained in the same packaging, and not further processed or packaged.

These non-retail containers must comply with the requirements of 307 and retail-labeled product must comply with 303.

In parts of this, we recognize an interpretation of the regulation that's a little different than what was held by the NOP and how NOP has trained on this with certifiers.

And in the developing this, we also receive feedback, however, from the program that the regulation supports this interpretation.

As we saw noted during public comment yesterday, we understand NOP will be training on this in February with certifiers, and look forward to clarification and confirmation that that's, indeed, the interpretation.

We had a lot of really good public input on this.

And I also wanted to stress, in a lot of that public comment, what we received was this is excellent, we have some tweaks to language here and there. But really, what we do want to see is a regulatory change.

And as we've also heard, this is just one of a number of issues in this area. The Accredited Certifiers Association is working on

this issue.

The IOIA, the International Organic Inspectors Association, is offering a webinar to address this, and OTA has touched on this to a great deal with the Global Integrity Taskforce.

And further, there's the proposed Organic Farming and Consumer Protection Act, as part of the Farm Bill, mandating NOP to close regulatory loopholes by mandating that uncertified entities, including ports, brokers, importers, online auctions, become certified.

So a lot of work in this, and again, we've heard a lot of public comment supporting the work.

And we feel that we still want to move forward on this document and have it for a vote today because we feel it is important to put this forward as the first step.

Briefly, in terms of comments, there was some suggestion to adjust the language to consider portions of operations, as is used in the regulation, and that NOSB should work with

NOP to see that the full implementation of suggestions from the OIG report be addressed.

And we did hear from several commenters that exempt and excluded, which bedevils a lot of us, was interchanged in the document.

And we feel that's something that could be cleaned up as we move forward on this, and that's something the NOP could address as a minor adjustment.

In terms of impacts, we heard that generally, negative impact would be minimal, and that those uncertified handlers and brokers out there that come into certification would only strengthen the supply chain.

In terms of economic impact, that might come as a cost of certification, and then pass through the price of goods.

But again, leading to the greater advantage that we are strengthening integrity.

And I think I will leave it at that. That is a quick summary on that, but I wanted to

open it up to discussion or offer to Tom, if you had anything to add?

As Tom was a huge asset on this and put a lot of work into it, so much appreciated on that front.

CHAIRMAN CHAPMAN: I think that was a fairly good summary. I'll wait to see if there's other questions.

The one thing I just want to raise to folks is I am planning to make an amendment that's not significant -- that's not the right term -- that's not significant, though, to correct the exempt-excluded kind of confusion of terms that we use in here, to just correct that so when we do forward this onto the program, we don't have that mixup.

I'll do that after the discussion, if there is any. Emily?

MS. OAKLEY: I was just going to suggest that you go ahead and make that motion now; that might help the discussion.

CHAIRMAN CHAPMAN: Okay. So all

right, now I've got to think of how I'm going to word this.

I move to amend the proposal to correct the word exempt where used incorrectly, and replace it with excluded.

MR. RICE: We have a motion on the table.

MS. OAKLEY: I'll second.

MR. RICE: Second from Emily. Discussion?

CHAIRMAN CHAPMAN: So, Ashley whispered in my ear over here that we should point it out it's used throughout the document in I would say over a dozen places incorrectly.

So, I don't want to go through every page and point it out. It's quite clear where it's used incorrectly. This was only about excluded operations.

So, we used exempt only in times when we're talking about exempt operations not being a part of what we were talking about.

So, it's quite clear where we used it

incorrectly, and so it was just to correct those spots.

All right, if there's no further discussion, we'll move -- yes, Harriet?

MS. BEHAR: I support this.

CHAIRMAN CHAPMAN: So, we're going to have two votes, although, we can have one vote and more discussion if we want to.

But the first vote is just on the amendment to fix the wording.

The motion was made by Tom and was seconded by Emily. Voting will start with Francis.

A yes-vote is to accept the amendment, and a no-vote is to reject it. Francis?

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

CHAIRMAN CHAPMAN: Chair votes yes. 15, yes; 0, no. The motion passes.

MR. RICE: I'd ask for any further discussion on this before we move to vote-- Harriet?

MS. BEHAR: I think this is a really important first step.

I think there's still more things that we can do, but I'm sure the organic inspectors in the room, and buyers and everyone, can speak to the fact that there's been a very large loophole for a long time, as far as in the audit trail.

And it drove many of us who were trying to follow an audit trail a little crazy that there were these gaps. So, I'm hoping this

will be a good first step to closing some of those gaps.

CHAIRMAN CHAPMAN: Yes, and I just want to say as we worked on this, it became quite clear that we worked on it, as Scott said, in the mind of imports originally.

And then we got the bigger import issue, which is definitely more than just this. And then as we were digging into this, this became more than just imports and this.

Especially from the comments from Organic Produce Wholesalers Group, there's clearly concerns on the produce side as well that aren't being addressed, in addition to other concerns that were raised up.

So, additional work is needed on excluded operations, I agree with that.

I'm also aware of proposed legislative changes that may impact OFPA, which would then also direct the program to further restrict this section of the regulations, although, you know, it's just proposed legislation at this point, and

it's not rule.

So, I struggle with how quickly we go after next steps.

Imports are on our agenda, and this is still somewhat related to imports, so in that regard, we're still going to be talking about it.

But do we want to pick up work, do we want to request to continue to work on excluded operations right away?

Or do we kind of want to wait to see what the legislative fix is, since that may empower us in the Department to move forward with regulatory changes in a non-regulatory change environment?

And I see the program raising their hand, but Scott's in charge.

DR. TUCKER: Hi, good morning. The program would encourage the Board to continue to work on this topic.

The Secretary has indicated a lot of interest in enforcement, in strengthening enforcement with imports.

This is part of that puzzle, and so we would encourage the Board to continue to work on it.

CHAIRMAN CHAPMAN: So, some of the comments that I was mentioning were related to the produce industry.

We're definitely still working on imports. That's a separate Work Agenda Item that we have yet to dive into in detail.

But a lot of the produce industry comments, while also relevant in an international import situation, are also relevant within a domestic supply chain situation as well.

And so we're still encouraged to work on that activity.

DR. TUCKER: So, the Department's interest in enforcement is not just about imports. It's also about the entire supply chain domestically and internationally.

So, we think this is an important topic and despite anything else that has happening, your perspective on this is very, very

valuable.

CHAIRMAN CHAPMAN: Excellent, that's good to hear. I know the program cares about enforcement, and that's kind of a silly thing that has to be said.

But it's quite clear what you guys do, and it's good to see that we're all very aligned in the direction on this.

DR. TUCKER: And thank you for the work you've done on this so far.

MR. RICE: Francis?

DR. THICKE: I thank you too for the work you've done, and I wanted to urge you to keep working on it, and NOP also too.

And I wanted to add a personal anecdote, because this is really hurting organic crop farmers.

In the Midwest, we really see it, and I'll give you a personal anecdote.

About two years ago, I bought a couple hundred acres of land that set me back $1.2 million, with a $90,000 a year payment, projected

on the prices of organic crops at that time, and crops took a big steep fall.

In the first year, I lost $50,000 on that crop compared to what I had anticipated, which makes a big problem for me trying to keep that debt serviced.

And then to buy the equipment, I needed to make it work.

So, this is something that's really affecting crop farmers out there, so we need to move as fast as we can to shutter this hole.

MR. MORTENSEN: The other way that it's affecting it, Francis, is that it's having a profound effect, at least I know in our Region, on farmers transitioning to organic.

There's a huge demand for corn grain and other grains for the poultry industry, for example, and if we're going to meet that demand by taking grain from overseas, then the farmers perceive that the scrutiny on the grain is not high.

And it's killing interest in meeting

the demand locally, and so I really support what you're saying.

MR. RICE: Sue?

MS. BAIRD: I came, in another life, from a Managing and Feeding seed program through the Department of Ag., and when I first came into the organic circle, which was in 2000 -- and so they did the training and we did all that.

And Bob Pooler then was in charge, and I went up to him and I said, are you telling me that grain brokers are exempted? And he said yes.

And I said, I can't believe that, that's where this hole's always at.

This has been a hole forever and I am thrilled that we are finally trying to address it. So, yes, let's move forward.

MR. RICE: Are we ready to -- or did we get the motion up? I lost track now.

CHAIRMAN CHAPMAN: Yes, unless there's further discussion we can move to the vote.

MR. RICE: Okay.

CHAIRMAN CHAPMAN: All right, so the motion is to approve the proposal as amended on excluded operations in the supply chain.

The motion was made by Tom and was seconded by Harriet. Voting will start with A-Dae. A yes-vote is to accept the proposal, a no-vote is to reject.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

CHAIRMAN CHAPMAN: Chair votes yes.

15, yes; 0, no. The proposal passes.

MR. RICE: We have on the agenda preliminary discussion on imports.

I would say that I would put a check mark next to that in the interest of maybe getting us back on time.

So, unless there are further thoughts on that at this time --

CHAIRMAN CHAPMAN: I'm not so worried about time, so if people had some thoughts on this, I'd love to get just -- you know, we had the folks here from the Federal Agency.

This is going to go back to the CACS. CACS is somewhat a smaller Committee.

So, I mean, it would be great if there were some other initial thoughts from other Board Members to get that out there now so we could direct our work appropriately.

MR. RICE: Okay, Dan, then Dave, and Harriet.

DR. SEITZ: This is just a question. I'm curious to know what role, if any, testing

can play when there's a suspect shipment of grain or some other product?

So, this is a clarifying question. Is there authority to do that?

And are there tests that can be useful in addition to tracking the documentation from person to person, or company to company?

MR. RICE: I can answer that too. Yes, the simple answer is testing can be used. And it's not the only tool that we have, but it's certainly one that we can draw on.

And that's something that, in the certification world, is done on a risk basis, on random, and in reaction to, in response to, known issues.

And in terms of tracking, we heard from the Panel and from other commenters a number of technologies that are out there.

They're not going to be here tomorrow, but it's certainly working towards something that -- technology is a constraint at this point.

Tom, did you have a response to that?

CHAIRMAN CHAPMAN: Yes, I think there's situations where testing is very useful in detecting fraud, and there's other situations where it's not going to tell you anything at all.

I was just talking to someone last night about an imported sweetener product that was so highly processed, it wouldn't show anything.

But they were testing it for pesticides, which, you know, is good due diligence. I'm not trying to discourage that from happening, but it's not going to reveal what you're looking for in that situation.

So, it doesn't work in every situation.

MR. RICE: Thanks. Okay, we've got Dave and Harriet?

MR. MORTENSEN: Yes, so I guess I had a couple of thoughts.

One is that over the last year, when the issue of the grain imports would come up, I didn't feel as though we were having enough open

discussion and frank communication between NOP and the NOSB on what was going on.

We raised this a number of times on the phone during our conversations, and I don't think we're having enough dialog, enough throughput of open communication.

So, I guess I would like to just have a discussion, or at least just have it be known that I think we could do better there. That's one point.

The second thing that I came away from the morning presentation with was that, and I have this funny way of expressing myself, and pardon me when I ask silly things like have we run a mental sensitivity analysis on this?

What I mean by that is have we been able to figure out if something is accounting for 99 percent of the problem, let's not focus on the other 93 things that account for 1 percent of the problem.

Because we have limited time and resources, that's all.

And so I'm not convinced that a system alone -- that to me looks like 70 percent of the problem, or maybe it's 60 percent of the problem.

The other problem is that U.S. exports of organic goods have been flat over the last four years, about $500 million give or take, $100 million.

At the same time, in the same interval, imports of organic goods have tripled from about equal five years ago, export-import about equal, to now $1.65 billion imports, three times what it was four or five years ago.

I asked our speakers in the break period, because they answered we'll have a better tracking system, problem solved. They didn't really say problem solved. So, I have a tendency to overstate.

They said we'll have a better tracking system, implying that would solve the problem. I'm not convinced.

I think, and I asked one speaker in particular, I said what happens when you have a

three-fold increase in magnitude of stuff coming in?

Because I know what the problem is on the pest side, because I've worked with APHIS at the port of entry on pest entry. And they said it's huge.

You're dealing with a different gorilla when you have that much stuff coming in.

You've got to have a lot more people on the ground, you have to have a much more rigorous system at the port of entry, you have to have people on the ground on the end where it's being produced. You have to have people here. And so I don't feel like we're really getting at the problem.

And so as a Board, I guess I just ask, it seems to me that we are setting the rules but we're not having a sense for whether we're in the ballpark of following them, in this case. That's my concern.

MR. RICE: Harriet?

MS. BEHAR: So, I think this issue,

especially of fraudulent imported grain but it's also in other areas too, where the regulations have not been followed, that trust is really all we have.

Integrity is all we have. And that imported fraudulent, quote, unquote, organic grain affects not just the grain-growers.

The consumers will wonder, well, are my organic eggs really produced by chickens that were fed organic feed?

Is my organic milk really organic? Is my organic coffee, my organic bananas? I mean, it affects everything, all the way down the chain.

So, it's not just the grain-growers, really, that I'm concerned about.

They're the first in line, the canaries and the coal mine, but it's the entire organic label and it's everyone. It's the retailers, it's the distributors, it's everyone who could be affected.

And in the end, it's the consumers

because we're trying to give them organic food. And so I think this is just a very important area that we really do pay attention to.

And I think, too, it was really valuable for me to have that Panel, so I have a better understanding of what happens at port of entry.

But there's even things that happen here that we should be having more input on, like fumigation and then tracking what loads might have been fumigated.

And that's something that too could have been an actual organic product coming in, but then lost its organic status on our soil.

So, a very important area and I intend to remain engaged.

MR. RICE: Tom, and then Lisa?

CHAIRMAN CHAPMAN: I thought Emily had her hand up. I wanted to say something building on what Harriet said, and I want to say something to build and respond to what she said.

And then since the conversations we

had as a Board and on the Executive and some other places, I also attended a session at Expo East, where Betsy and Miles, before he retired, were both there.

And it was around enforcement and there's clearly -- we feel we have a special relationship with the program given how we advise them, but everything given to us is also still a public document.

And during enforcement procedures -- and maybe I'm going to pause here briefly and hand it over to the program to talk a little bit about enforcement.

But in order to build that case, they need to maintain some level of confidentiality while that case is being built and brought.

And I think that's where we have this constant unease of is enforcement activity occurring?

And then I gave these complaints or am aware of these complaints, where are they at in the process, in the programs, going through their

procedures and what they need to do.

If you do go -- and related to a lot of these grain issues that we're speaking about, there is some public information now available on the Web because of either appeals or enforcement actions that were carried out.

And the program can maybe speak a little bit to that.

But I'd really like to hand it over to you guys really briefly just to talk about that, enforcement, what you can share, when you can share, why you can't share more.

DR. TUCKER: Okay, so the investigations are ongoing and this is a key priority for us.

As you've noted, and I shared the link yesterday, the NOP update slides, if you go to the AMS website and you search on NOP enforcement, you're going to get to a page, and you can see when the program and the Agency issues a final suspension or revocation.

They are now posted on that site. And

that's new. So, final revocations, final suspensions are posted on that site.

If there is an appeal of a proposed notice, then a decision or a settlement is reached on that, those are also posted.

Now, even when an administrator's decision is posted denying an appeal, the appellant does have a chance to request a Hearing.

We do post the administrator's decision but we also do note that a Hearing has been requested.

So, we have issued Directives to certifiers that are operating in the Region of concern to do increased testing, to do increased reporting.

I think as I mentioned yesterday, the organic industry has been growing very, very quickly. And that requires everybody in the system to make adjustments.

So, I think certifiers are coming to terms with what does this mean in terms of how

they oversee operations in that area.

They are looking at, well, how are we doing traceback and mass balance audits?

We are emphasizing that with certifiers; that's why we had training this summer on those topics. We'll continue to have training, particularly our face-to-face training, over the winter.

We are increasing our certifier audits in that area, but I think, again, the entire system is adjusting to this new reality that is a response to very rapid growth in the industry.

So, we can't share the details of specific investigations as they're going on, but you can keep an eye on that website for those final actions.

The other link on that page that we've added is you can, with one click, get a list of every single suspended and revoked operation.

And if you do a filter, you can do that by country, you can do that by certifier. So, we don't post all the final suspensions and

revocations that certifiers issue, but they are issuing them.

And so if you do do a search by country, by certifier, you can see what they're doing as well. So, that's the level of reporting that right now is happening on the site. Again, I can't emphasize enough how important this is to us.

I think the OIG audit is incredibly important in framing a roadmap for next steps. I totally agree that it's not just the documentation, it's not just the systems, it is the boots on the ground.

It is the certifiers out there, it's NOP with the certifiers, all incredibly important activities.

Did that help?

CHAIRMAN CHAPMAN: Yes, I think -- do you want to add something? Because I have something else after this but it's unrelated.

MR. MORTENSEN: Part of this is that for me it's helpful that we have a dialog, so I'm

not trying to be a bugger about it.

But Jenny, one of the things that I think is important in a process is that we all take action when we're responsible.

And actions are laudable. Thank you. But we also need to see the impact of the action as a Board.

We need to know that this action or this suite of actions improved the outcome. And I think for me, that's a place where I just don't feel like I have a sense for what the outcomes are.

And honestly, linking to one specific action that's been taken, and this is just a process point, is not going to inform my understanding of how the system is behaving.

It will tell me this one action was resolved in Court by X, Y, Z, but it doesn't bolster my confidence or my insight as a Board Member in understanding whether we're doing better or not, when I know that I'm the scientist.

I'm also a person tightly connected with organic farmers in my Region and I'm hearing them tell me that they can't get into what they want to do because of this problem.

And I can't really say anything intelligent to help them understand that we're doing better or not right now.

That's my concern.

So, it's outcomes, impact and outcomes.

If we could figure out how we do a better job of communicating those so that the Board can sort of get a sense for whether we're moving up or flat, we're going backwards.

DR. TUCKER: Can I respond to that?

MR. MORTENSEN: I'm finished.

DR. TUCKER: Okay, so I totally agree that both process and outcome is important.

There will be system-level actions like we learned about yesterday, and so there are system levels that raise the capability across the entire system at all levels, so at NOP,

certifiers, certified handlers, knowing what to look at.

So, there will be actions at all of those levels, and those are still being defined and are underway.

And I would say that the system does also improve one action at a time, that there are operations that are no longer certified, that we have actors that are no longer in the system.

And compliance is our number one goal, and so if we can get actors -- one revocation matters and one suspension matters because it is getting an actor out of the system, that should not be there.

Again, as I mentioned yesterday, these are very sophisticated actors. Many of them have actually worked in the industry, they know how it works.

They know how the paperwork flows, they know how to mark up documents, they know how things move between countries in a very complex system.

And we are working with some very, very sophisticated players out there.

And so we're going to continue to learn how they are working, and then try and get ahead of them with system-wide improvements.

But it will take time and it will take everyone. I can't emphasize that enough.

MR. RICE: Okay, Tom and then Lisa's been waiting too.

CHAIRMAN CHAPMAN: Yes, I had more before we got into that back and forth. So, the response is something that David asked about.

Is there one item that can account for 90 percent?

As far as I've spent time on this, unfortunately, I don't think there is one item that can carve out 90 percent of it.

There's going to be a lot of actions needed in a lot of different ways.

Supply chains are very diverse and they offer a lot of opportunities for fraud, and this is an issue that is acute in the organic

industry but also extends far beyond it.

Something that comes to mind was a honey-laundering case, where they were shipping honey that was from illegal imports that resulted in FBI actions and a lot of arrests internationally.

But this happens in every commodity in a lot of different ways. Or we see a lot of allergens that get disclosed in spices because they've been adulterated.

So, fraud and food is an issue that's acute to organic, but it's also quite larger than that, and unfortunately, there's just dozens of ways to approach it.

So, I think we're going to have to take a good look at the supply chains and try to re-look at how it is and determine best ways to further mitigate that down.

Some of those might account for big portions of it, some of them might account for small portions of it.

We did get a lot of good comment from

OFARM, from Organic Gross Working Group, from OTA, and then OTA has a Working Group out there, and ACA has a Working Group on this.

We're getting a lot of good ideas and we need to start putting them together in a comprehensive plan to start addressing this.

The last point I want to make, which is really probably going to just be a preview to a request from the Subcommittee, but as we're digging into this, and as I was thinking about excluded operations before, really, we're looking at imports, but it's really supply chain integrity.

It was given to us as imports but this, while it might be acute and acknowledge that it's an international problem, there's no reason why it couldn't be a domestic problem as well.

Domestic, we have probably the easier enforcement authority, but it's still an issue present there.

So, it might make sense for us to

revise the work, still focusing on imports but maybe call it import and supply chain integrity, and then continue the work on that.

That's all I had to say. That's all.

MR. RICE: I got Lisa and then Harriet.

MS. DE LIMA: So, I appreciate what Harriet brought up as far as how this impacts the consumer and the questions this raises in their minds.

And I want to give you guys a perspective on how this impacts the retailer.

So, just to give you one example, we got an email from a customer last week, and she was demanding to know what we, as MOM's Organic Market and Retailer, were doing to ensure that the organic product that we're selling is organic.

I mean, so, take a minute to think about that, and that's crazy because we're not doing anything to ensure that organic is an organic.

We have a lot of standards in place and a lot of affidavits in place that we use for product that isn't certified organic.

So, an example would be we sell a fair amount of local pastured meat, and we go and visit the sites and put them through a lengthy affidavit process, asking them about feed and animal welfare and the whole bit.

But that's because the product isn't certified organic.

When it's certified organic, we're going on that trust as well as a retailer, but when we start to have customers asking questions like that, to me, that's a real big problem.

And there might be things that organic doesn't address, like porches for eggs, and that's something we do address, but that's when the organic standard isn't addressing something.

We will go in and set our own standard and ask the question, but just a general question, like what are you doing to ensure that your organic bread is organic because of the

grain?

It's a whole different ball game.

MR. RICE: Harriet?

MS. BEHAR: This is directed to the NOP. We've passed this proposal and so I know that economic impact is always something you have to address.

And so I would like to highly encourage you to consider the negative economic impact if it does not get put in place, that the integrity of the organic label is of paramount importance.

And so closing the loopholes in the supply chain audit trail is super important.

So, when you ENO and you are presenting to whoever looks at the ENO, understand all the layers you have to go through, but to please point out that -- usually, it's when you put something in the negative effect that it could have.

Well, let's talk about the positive effect and that if it doesn't get put into

guidance, how that could have a negative economic impact.

DR. TUCKER: Yes, great point. When the Department engages in any kind of rulemaking, I'll be sort of abstract about this, it looks at both quantitative benefits and quantitative costs.

And so I think, certainly, market growth is a quantitative indicator.

But I think if there are other types of quantitative indicators that can help both assess cost and benefit, benefits are always sort of hard to quantify for the Government.

And so if there are ways of thinking about benefits in addition to cost in quantitative ways, that always helps strengthen the argument.

And that's just a general generic comment about the rulemaking in general, not this in this particular.

Again, the administration is very interested in this issue and is supportive of

initiatives that will move that work forward.

MR. RICE: Emily?

MS. OAKLEY: I wanted to echo what Lisa and Harriet have said because trust is such a big factor in organics, both within what the farmers are doing and the consumer's trust of us.

And there's a wide range of consumers as we all know, but there's the emerging organic consumer, the person who buys a couple of things or every once in a while and is looking for reasons to believe further in the label.

And these are the types of issues that undercut their trust in the label and then become a reason to not become full-fledged organic consumers.

MR. RICE: I just wanted to add, also on the theme of communication of what's going on and how we can keep that line of communication going, there's been much greater communication amongst certifiers and certainly with the program.

But we've got the ability for us, as

certifiers, to share information or communicate with each other on various issues, and that has greatly improved in the time that I've been involved in this.

So, that's further adding some strength to this.

And further comments? Tom?

CHAIRMAN CHAPMAN: Yes, I've got one last one.

I do remember questions during the import panel about the responsibility of buying operations, and I work for a probably small in the size of CPG company, consumer product goods companies, but large in the realm of organic consumer product good companies.

And in my role at Cliff Bar, I am in charge of the ingredient sourcing Department, and we take integrity very important. It's top of mind, it's top of sourcing.

We pay a premium for organic ingredients and we expect that our supply chain is complying with the applicable requirements of

what we're paying for.

If there's fraud in our supply chain, then I'm outraged by any plan to take appropriate action.

And I think we've seen that also in comments from people like the Organic Produce Wholesalers Group and what they go through when they try to determine compliance of an operation and lost sales, potentially, from doing the right steps.

I think there's a lot of really good actors out there in the handling community that are doing the right things.

Unfortunately, fraudulent actors are fraudulent actors and they're not going to be here at the table.

They're not the ones here, so we're going to have to find ways to bring them in even if they're not here.

We need to bring the pain to the people who aren't coming to the table to help us solve this problem.

And I'm not saying that we don't have more actions in that, we definitely do, and we have a role in bringing the pain to those people to get the enforcement and integrity back where it's at.

Unfortunately, a lot of the imports that I saw coming in from the enforcement actions looked like feed grade, and so that spreads out probably a lot of small farmers unfortunately.

And it gets eaten by cows, and if you're buying the dairy products, it's going to be really hard to track something like that, even though it might be in someone's supply chain.

And that's just an example of how difficult this can be at different stages of the supply chain of how the fraud can get into a system.

But it doesn't at all take away from how important this is and how we need to tackle it right away.

DR. TUCKER: If I can just add one other thing that does -- your statement right

there.

When I say all levels, we're talking about processers, we're talking about certifiers, we're talking about USDA, all levels have a role here.

So, thank you for making that comment.

MR. RICE: Thanks everyone, I'm glad we did have the time to have this conversation and good to really get the input and feedback from the program.

It's much appreciated. That wraps up the business of the CACS Subcommittee and we'll turn it back to Tom.

CHAIRMAN CHAPMAN: Thank you, Scott. My agenda says it's time for a recess and free beer with Marty.

(Laughter.)

It's 10:00 a.m. It's the livestock, can we get started on the livestock or should we take a recess? Want to take a break?

Let's get started with the livestock first. Maybe we'll get through the sunset and

we'll see how long it takes.

That was a joke because of the agenda. Sorry, my jokes aren't that funny. That was the end Wednesday right there.

So, it's now Thursday morning, 8:30 a.m., and we're going to move onto the Livestock Subcommittee. And I'm going to hand it over to Ashley Swaffar, the Chair.

MS. SWAFFAR: Okay, we're going to try to make some time up in livestock. So, let's start off and jump right into Sunset 2017.

Dr. Brines?

DR. BRINES: All right, thank you.

As we start the livestock sunset materials, we're at section 205603 of the National List, synthetic substances allowed for use in organic livestock production.

The first substance on the agenda is chlorhexidine or chlorhexidine.

It appears under paragraph as disinfectants, sanitizer, and medical treatments as applicable.

And the listing is chlorhexidine allowed for surgical procedures conducted by a veterinarian, allowed for uses of teat dip when alternative germicidal agents and or physical barriers have lost their effectiveness.

And the most recent technical report was completed in 2015. Thanks.

MS. SWAFFAR: Thank you, Dr. Brines. Harriet?

MS. BEHAR: So, numerous certification agencies noted that this is an important material for organic livestock production.

There was a checklist that went around and there were a lot of individual farmers who also checked wanting this product to be relisted.

It's very useful as the active disinfected in a teat dip, especially in cold temperatures, and coming from Wisconsin and doing inspections in Minnesota, I can say that many farmers really prefer this, especially in the cold months, to iodine as a teat dip.

The use of it in surgical procedures

is absolutely essential. And even though one public interest group did note that there were less toxic alternatives such as vinegar or lavender oil, or others, this is readily available and is approved for use in livestock production.

So, the Subcommittee voted to relist this material for the specific functions in the annotation and the vote was 7-2, no, to not relist. And zero to take it off the list.

Did I say that right? I had many negatives in there.

MS. SWAFFAR: Thank you, Harriet. Is there any discussion? I see none. We're ready to vote.

CHAIRMAN CHAPMAN: I'm getting there. All right, so it's a motion to remove chlorhexidine from 205603A.

The motion was made by Harriet and seconded by Ashley. This is a motion to remove, so a yes-vote is to remove, a no-vote is to retain the listing.

Voting will start with Lisa.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

CHAIRMAN CHAPMAN: Chair votes no. 0, yes; 15, no. The motion fails.

MS. SWAFFAR: Okay, moving right along to chlorine, Dr. Brines?

DR. BRINES: Thank you, we'll take up all the chlorine materials as a single introduction.

So, we're continuing under Section 205603 paragraph A, and the listing is chlorine materials, disinfecting and sanitizing facilities and equipment.

Residual chlorine levels in the water shall not exceed the maximum residual disinfectant limit under the Safe Drinking Water Act.

And we have calcium hypochlorite, chlorine dioxide, and sodium hypochloride.

MS. SWAFFAR: Thanks. Thank you, Dr. Brines, this is my material. I feel like I talk about chlorine every single meeting, so I'm going to kind of keep it pretty brief.

Chlorine is used as a sanitizer and disinfectant in a lot of areas in livestock production from sanitizing surfaces, pails, water lines, things like that.

Some of the comments were there are very few alternatives and there are farmers who use chlorine as there preferred cleaner and sanitizer and if it was removed, it would have a

profound effect on the dairy industry.

A lot of folks said it was routinely used it kill pathogens, and we did get some comments, again, that it has a risk to human health and we should look at a comprehensive review of sanitizers, which fingers crossed, we might be looking at that.

So, we talked about this a lot so I'm going to end it there.

Any discussion? Great, ready to vote.

CHAIRMAN CHAPMAN: Okay, these materials all came bundled together.

So, it's again a motion to remove chlorine materials from 205603A, that's all three of the materials.

The motion was made by Ashley and seconded by Sue.

It's a motion to remove so a yes-vote is to remove, a no-vote is to retain, and the voting will start with Asa.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

CHAIRMAN CHAPMAN: Chair votes no. 0, yes; 15, no. The motion fails.

MS. SWAFFAR: Okay, moving right along, glucose. Dr. Brines?

DR. BRINES: Thank you. We're still under Section 205603, Paragraph A, and the listing is glucose. Thanks.

MS. SWAFFAR: Thank you, Dr. Brines. Harriet, keep it brief?

MS. BEHAR: Okay, so this is also

another material universally used. Many producers as well as certifiers support it.

It's used in ketosis as well as is an ingredient in calcium gluconate, which is used for milk fever.

So, a very useful and welcome item on the National List by our organic livestock partners.

The vote by the Subcommittee was 7 to retain it and 0 to remove.

MS. SWAFFAR: Thank you, Harriet. Is there any further discussion? Seeing none, we're ready to vote.

CHAIRMAN CHAPMAN: Okay, this is a motion to remove glucose from 205603A. The motion was made by Harriet and seconded by Sue.

This is a motion to remove; a yes-vote is to remove, a no-vote is to retain. And the voting will start with Joelle.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No. Did I skip?

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

CHAIRMAN CHAPMAN: Chair votes no. 0, yes; 15, no. The motion fails.

MS. SWAFFAR: All right, moving onto oxytocin. Dr. Brines?

DR. BRINES: Thank you, we're still under Section 205603, Paragraph A, and the listing is oxytocin use in post parturition therapeutic applications.

The most recent technical report was completed in 2005. Thanks.

MS. SWAFFAR: Harriet, once again?

MS. BEHAR: Okay, oxytocin. So, this has been voted by the Subcommittee to remove.

It is a hormone that has an annotation for post-parturition use therapeutic application only.

Many commenters in both the first review and the second review did mention that it seemed to be an unclear annotation, that there are chances for abuse.

However, and there were many checklists where farmers just checked that they wanted to keep it.

But in further detail with certifiers and during our public comment here, it was mentioned that they liked to have it in their toolbox but they don't use it.

And that I think when it was first put on, I went back to the first tack and it's been on the list for a long time.

It has not really had a very robust discussion over time, it just kind of kept getting renewed.

But over time, the dairy has set work with organic dairy producers, farmers have really developed both management protocols so they don't have post-birthing problems, as well as how to treat it, either manually or with homeopathics or with herbs.

There's just a variety of different ways of dealing with the issues, that they really are not using it.

The two largest milk buyers in the United States are Crop Cooperative Organic Valley and WhiteWave Danone. I hope I've got that right.

They did not support renewal of this material, nor did the Organic Trade Association.

Numerous commenters really felt that because it's a hormone it should be removed, and so I'm going to just read the Northeast Organic Dairy Producers Association, the recommendation what they say about it.

Because they do represent many organic dairy farmers in the country. They support the

Subcommittee's recommendation to remove oxytocin from the National List.

Oxytocin is a protein hormone, not a body- building steroid hormone. It occurs in all mammals, both male and female.

The word hormone is misunderstood by consumers, and as such, leaves organic dairy producers open to the valid claim that hormones are allowed for use.

Oxytocin is not an essential material for organic production.

If an organic dairy operation suffers from repeated occurrences of prolapsed uterus, underlying issues such as hypocalcemia need to be addressed.

Prolapsed uterus should be a rare occurrence on organic farms and if oxytocin is indeed needed to treat this rare occurrence, then the animal would need to be removed from the herd as with treatment with any other prohibited substance.

And so that is what a group of organic

dairy farmers have said about this material.

Oh, and the vote was 7 to remove, 0 no, and 0 abstentions.

So, it was a unanimous vote by the Subcommittee to remove this from the National List.

MS. SWAFFAR: Thank you, Harriet. We'll open that up for discussion starting with Francis.

DR. THICKE: I also was impressed that Organic Valley, Horizon, Straus Dairy, and a lot of organizations, supported removing it, including NODPA, basically, most of the organizations that represent most of the organic milk.

And the idea that it's a synthetic hormone is something that I think they see as not good to further label.

And I definitely support removing this product from the National List. I think it's time.

MS. SWAFFAR: Anybody else? Harriet?

MS. BEHAR: So, if you have an opinion, instant facts. I agree there, I don't think it's needed.

And in discussion with people in Europe about our prohibition on antibiotics and all the tools that we have learned over time that we don't need them in organic livestock production. Whereas, they do allow them.

I think this is another place where removing it from the toolbox will just encourage our organic dairy producers to look to those natural systems instead and actually find success with those tools, instead of having this synthetic there.

Which really most people just said keep it in the toolbox but I probably won't use it.

I think we just take it out of the toolbox.

MS. SWAFFAR: So I just want to comment, I understand that it's really important to give our producers a lot of tools in their

toolbox, and generally, I always feel like we should give them what they need. But hearing from so many large-theory organizations that there are alternatives that have been working, and that two of the largest organic dairy folks in the U.S. don't even allow this as an input -- that kind of hit that one home to me.

So that's how I will be voting. Any other discussion? Great, we're ready to vote; Tom?

CHAIRMAN CHAPMAN: This is a motion to remove Oxytocin from 205.603(a), based on the following criteria in the Organic Foods Production Act, Section 2118, National List (b)(1)(A)(ii) and (iii), Section 2119, and/or 7 CFR 205.600(b)(1): essentiality.

The motion was made by Harriet and seconded by Ashley. A yes vote is to remove, a no vote is to retain, and the voting will start with Steve.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

CHAIRMAN CHAPMAN: Chair votes yes. Fifteen yes, zero no; the motion passes.

MS. SWAFFAR: All right; copper sulphate; Dr. Brines? Or, no, no; I'm sorry. Tolazoline, Dr. Brines.

DR. BRINES: Yes, all right. So we're continuing on under 205.603(a); this listing is tolazoline, CAS No. 59-98-3. Federal law restricts this drug first to use by or on the lawful written or oral order, or the licensed

veterinarian, in full compliance with the AMDUCA, and 21 CFR part 530 of the Food and Drug Administration regulations.

Secondly, for use under 7 CFR Part 205, the NOP requires one use by or on the lawful written order of a licensed veterinarian to use only to reverse the effects of sedation and analgesia cause by Xylazine.

Thirdly, a meat-withdrawal period of at least eight days after administering to livestock intended for slaughter, and a milk discard period of at least four days after administering dairy animals.

The most recent technical report was completed in 2002. Thanks.

MS. SWAFFAR: Thank you; Dan?

DR. SEITZ: So as Dr. Brines just pointed out, this substance has a very narrow use, and it's just to reverse the effects of the veterinary medicine Xylazine.

This was just reviewed in 2015, so we're reviewing it again because of the speeded-

up process to spread out the sunset materials. There were only a few comments on this, four comments. They all supported relisting.

There was a concern raised by two commenters regarding off-label use, but as you can see, we have very specific annotation. So any off-label use would really be an issue with a certifier.

So in general, very little comment, but the comment that was received said that this should be kept on as a necessary veterinary medicine.

We did have a subcommittee vote on this, and five people voted no, meaning that it should stay on the list; there were two absent, and there were no votes to remove this.

MS. SWAFFAR: Thank you, Dan. Is there any discussion? Yes, Francis.

DR. THICKE: I would just point out, it's unfortunate that this was not paired with Xylazine for the review process, because we can't really work with one without the other, so it's

going to be awkward from here on, that we're always going to refer to the other drug, so we can't take action; not that I wanted to take action on it. I'm in favor of keeping it on the list.

DR. SEITZ: Let me just say that if we do take action on the other material, then we could remove this material. But it wouldn't make sense to remove this first.

MS. SWAFFAR: Any other discussion? All right, we're ready to vote. Tom?

CHAIRMAN CHAPMAN: Okay; this is a motion to remove tolazoline from 205.603(a). The motion was made by Dan and seconded by Jesse. It's a motion to remove, so a yes vote is to remove, a no vote is to retain. The voting will start with Dave.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. SWAFFAR: Thanks. One thing before we move on; on the oxytocin, where we voted to remove; the sunset date for that is March 15th of 2022, I believe, Dr. Brines. So that is one that we did early, so it's not immediately sunsetting. Is that right, 2022?

Okay, moving on to copper sulfate; Dr. Brines?

DR. BRINES: Thank you; we're under a new paragraph of Section 205.603; it's paragraph (b), as topical treatment, external parasiticide

or local anesthetic as applicable. And the listing is copper sulfate. The most recent technical report was completed in 2015. Thank you.

MS. SWAFFAR: Thank you, Dr. Brines. Jesse?

MR. BUIE: Copper sulfate is used in livestock management, specifically as a walk-through foot bath to help control and prevent foot-related diseases in dairy cattle and sheep.

According to the February 15th technical evaluation report commissioned by the livestock committee, there are no natural non-synthetic products available that can be used as a management strategy to treat hoof-related diseases and lameness in dairy cattle and sheep operations.

The Livestock Subcommittee feels that copper sulfate, when used with appropriate management practices and disposed of properly, provides a valuable tool to livestock producers and recommends this material to stay on the

national list.

There were a few comments received, but most were for relisting. Several were for more research and recommendations for alternatives. There were seven no votes.

MS. SWAFFAR: Thank you, Jesse; I'll open the floor up. Lisa?

MS. DE LIMA: I just have a question for you guys; there were a couple of commenters who wanted an annotation similar to crops, and I just wanted to know, from the livestock committee's perspective, is that just less of an issue when it comes to livestock, because it's not being used directly in the soil?

MS. SWAFFAR: So I'm not 100 percent sure; I think the annotation was around disposal, maybe.

MS. DE LIMA: Used and disposed of in a manner that minimizes accumulation in the soil.

MS. SWAFFAR: Yes; what they're concerned about there is folks having a foot bath, and then just dumping it out on the ground.

So that's why we said that if it's used appropriately and disposed of appropriately.

So we can take that back to committee and talk about that on -- no, it was brought up by a commenter, so usually we talk about that.

MR. BUIE: And the research shows that there haven't been any issues.

MS. SWAFFAR: Harriet?

MR. MORTENSEN: Yes, I was just curious for the folks who reviewed it, or maybe Francis; what is proper disposal of a bath like that?

DR. THICKE: I think -- I don't use these baths. I'm thinking that it probably gets dumped in the manure pit, and then it gets put on the land. I hope they don't just dump it on the land somewhere and concentrate it more.

But there are alternatives. I mean, most grazing dairy farmers will not use a foot bath. And if you have an isolated foot problem, you just treat it topically; clean it up and treat it topically. The foot baths are more for

the capel dairies.

MS. SWAFFAR: Harriet?

MS. BEHAR: There can also be just regional differences too, or seasonal; if it's very muddy or whatever, you might need a foot bath.

But we have also approved zinc sulfate, and there is a petition before us, so we will be looking at in the spring for thymol. This could even be a research priority, natural alternatives.

I don't know if there have been any studies on things like tea tree oil or other things that might be useful, just to lessen copper use in organic systems overall. But I will vote for this material now, because we don't have all those alternatives.

MS. SWAFFAR: Sue, did you have your hand up?

MS. BAIRD: I think I have to disagree with my friend, Francis. I do a lot of inspections, especially smaller, Amish

Mennonites, and many of them are using the foot bath.

MS. SWAFFAR: Any other discussion? Okay, I think we're ready to vote.

CHAIRMAN CHAPMAN: Okay, so this is a motion to remove copper sulfate from 205.603(b) as a topical treatment, external parasiticide or local anesthetic. The motion came from Jesse, and was seconded by Harriet. It's a motion to remove, so a yes vote is to remove, a no vote is to retain. And the voting will start with Jesse.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

CHAIRMAN CHAPMAN: The chair votes no. Zero yes, 15 no, the motion fails.

MS. SWAFFAR: All right, moving on to lidocaine; Dr. Brines?

DR. BRINES: Thank you; we're still under paragraph (b), and the listing is lidocaine as a local anesthetic. Use requires a withdrawal period of 90 days after administering to livestock intended for slaughter, and seven days after administering to dairy animals. Thanks.

MS. SWAFFAR: All right, Dan.

DR. SEITZ: So a little more background on the substance; lidocaine is a local anesthesia which has a rapid onset of action, and is short-term in duration. It numbs only the area to be worked on.

For example, lidocaine is used to humanely debud horns on calves and for minor surgery on mature animals. It was last reviewed

in 2015, so again this is part of this speeded-up process.

Subsequently, the withdrawal period was changed through an annotation, but that's not something we're looking at. It was shortened; that happened in 2016.

There were seven comments in favor that supported the relisting the material; there was no opposition. And generally, this is seen as being something that's very useful for livestock veterinary treatment.

So the subcommittee voted zero yes, five no, zero abstentions, two absent; so basically voted to keep it on the list.

MS. SWAFFAR: Thank you. Is there any discussion? Harriet?

MS. BEHAR: This is important material for animal welfare.

MS. SWAFFAR: And I just wanted to clarify that what Dan talked about, the withholding period; that was a proposal from the board, and the program has not officially put

that into rulemaking yet. So we're still at the 90. Yes, Francis.

DR. THICKE: I would agree that it's important to keep it on the list.

MS. SWAFFAR: Further discussion?

MR. MORTENSEN: I was wondering if someone, just for clarification -- the slaughter interval is 90 days, and the milking interval is eight days. I'm surprised by such a large difference, that there wouldn't be residues in the milk. Anybody know anything about that?

MS. SWAFFAR: Francis?

DR. THICKE: When we reviewed those withholding times, Jean Richardson took the lead, and we looked at AMDUCA and the requirements from the FDA, and we doubled them, if my memory is right. And so it doubled what the requirement was from the FDA, if I remember right.

MR. MORTENSEN: Okay.

MS. SWAFFAR: That's right. Emily?

MS. OAKLEY: What are we going to do when we don't have Francis?

MS. SWAFFAR: I am not happy. I think he's going to stay another five years. I need my dairy person. Any other discussion? Okay, we're ready to vote.

CHAIRMAN CHAPMAN: The motion is to remove lidocaine from 206.603(b). The motion was made by Dan, seconded by Francis. This is a motion to remove, so a yes vote is to remove, a no vote is to retain. The voting will start with Ashley.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. SWAFFAR: All right, and on to procaine. Dr. Brines?

DR. BRINES: Yes, thank you. We're still under paragraph (b), and the listing is procaine as a local anesthetic. Use requires a withdrawal period of 90 days after administering to livestock intended for slaughter, and seven days after administering to dairy animals. Thanks.

MS. SWAFFAR: Thank you. Dan?

DR. SEITZ: So like lidocaine, procaine is a local anesthetic which has a rapid onset of action, and is of short-term duration. It numbs only the area to be worked on, and can be used to humanely debud horns on calves and for minor surgery.

This also was last reviewed in 2015, and similar to lidocaine, subsequently there was

a proposal for an annotation change, to lower the withdrawal period.

Unlike lidocaine, there were a number of questions raised about procaine. There were seven comments altogether that were received this time around. One comment stated that it is currently being used; one comment explicitly recommended continued listing.

However, several commenters noted that procaine may be commonly combined with antibiotics. If you Google procaine, you'll find that many products come up that are listed as combining it with an antibiotic.

Apparently -- and this was from a couple commenters -- this is not commercially available in an organic-compliant form, and the FDA has also withdrawn a number of procaine products from its approval.

So I would say that a majority of the commenters felt either that there were issues around whether it is always combined with antibiotics, whether it's available, and whether

it's really a useful thing to have in their toolbox, when you consider lidocaine tends to be a more effective and widely-used substance.

So we had a split vote on the subcommittee level, with three members voting yes, suggesting that it be delisted. Two voted no, saying that it should be relisted, and two were absent.

MS. SWAFFAR: Thank you, Dan. We'll open the floor for discussion. Harriet?

MS. BEHAR: Because there's nothing commercially available in an organically-acceptable form, and we do have lidocaine present to perform the same task, I will be voting to remove this material.

MS. SWAFFAR: Okay, any other discussion? Dave?

MR. MORTENSEN: I think Harriet answered most of my question, but I was curious about a couple of the other hinge issues that led people to vote for and against this. Dan, could you give us insight into that?

DR. SEITZ: I think the yes votes reflected Harriet's thinking. A no vote was that it was just another tool that may be helpful. It wasn't absolutely certain that it couldn't be found in a form that was without an antibiotic attached to it. So probably just the idea of no harm done in leaving it.

MS. SWAFFAR: So I'd like to follow up to that. I think it was more of, Let's see if we can get more public comment out this, to see if there truly wasn't a form that didn't contain antibiotics. So that's kind of where that split vote came out. Francis?

DR. THICKE: Yes, I'm also in favor of removing it. Lidocaine seems to be as effective or more effective, and commonly in use.

The biggest issue for me is that, in many areas of the country, there aren't really veterinarians who are familiar with organics. And when they say they'll bring procaine, then they'll just grab procaine. That's what they do; they treat animals with drugs.

So they'll grab procaine and use antibiotics with it. So there could be this confusion, and unintentionally get antibiotics into an animal.

MS. SWAFFAR: Any other discussion?

MR. RICE: I just have a question in terms of -- I saw that CROPP Organic Valley was in support of letting this go. But then VOF, Vermont Organic, said their producers use it as a general.

Is it explicitly used with an antibiotic, or can it be used without? I was a little confused about that.

MS. SWAFFAR: Francis?

DR. THICKE: I've not seen any reference that it's actually available without antibiotic; we've been looking for that. And also, it's used in the outpatient as a local anesthetic like lidocaine, so it's really the same usage as lidocaine.

MS. SWAFFAR: Harriet?

MS. BEHAR: And not just the thought

of an antibiotic in the milk supply, but an unsuspecting producer who's working with a veterinarian who doesn't understand the organic regulation could lose a valuable animal in their herd.

And for livestock people, it's not just about production; it's about genetics, so we want to make sure the genetics that they're trying to retain and build upon in their herds are not going to be accidentally treated with something that could take it out of production.

MS. SWAFFAR: Thank you. Tom?

CHAIRMAN CHAPMAN: I just wanted to make sure I didn't miss something in the public comment. Did anyone comment specifically, saying they could get it without the antibiotic? Did we get anything directly?

DR. SEITZ: I did not see that comment anywhere.

CHAIRMAN CHAPMAN: I didn't see it either; I'm just trying to check.

MS. SWAFFAR: A-dae?

MS. BRIONES: I don't know if anybody can answer this question, but if a producer uses procaine -- why would a producer use procaine instead of lidocaine? Is there --

MS. SWAFFAR: Harriet?

MS. BEHAR: Well, the concern is that if there's a veterinarian on the farm, and they see a list that just says, procaine, then they would just pull that out of their tool if there's a minor surgery that they're performing.

They wouldn't necessarily think to look at the ingredients of the procaine, to make sure there were no antibiotics, especially if they were not familiar with organic regulations. They wouldn't know that the antibiotic could then make that animal no longer suitable for organic production.

MS. SWAFFAR: So I'm going to call on myself; as best I can tell, the two are interchangeable, lidocaine and procaine, as far as their use. Tom?

CHAIRMAN CHAPMAN: Is there

availability difference between the two? Was that a reason, originally?

MS. SWAFFAR: Francis?

DR. THICKE: I'm not certain. I know lidocaine is widely available and widely used.

MS. SWAFFAR: Emily?

MS. OAKLEY: If we should vote to remove this substance, would the cover letter for its removal state that there were no known products available that did not include the antibiotics? I think that might help explain the situation, especially the smaller-scale producers who might not understand that.

MS. SWAFFAR: That's a great point to throw on there, and I'll make a note of that, for sure. Any other -- Sue?

MS. BAIRD: I was one that voted yes on it, and I did it simply because I was hoping that we would get further clarification, whether it was available without the antibiotics. I really hate taking tools away, but if it's not available, then I'm absolutely going to vote

against that now. I'm going to vote no.

MS. SWAFFAR: You mean yes? Yes is to remove.

CHAIRMAN CHAPMAN: You're going to vote to sunset?

MS. BAIRD: Yes.

MS. SWAFFAR: Any other discussion? All right, looks like we're ready to vote, Tom.

CHAIRMAN CHAPMAN: All right. Before I get into the voting, because this was a split motion, real quick; Dr. Brines, I'm going to put you on the spot again. What is the original sunset date for this material?

DR. BRINES: The sunset date for procaine is March 15th, 2022, and as part of the sunset reorganization, the board recommended that materials reviewed early not sunset prior to the original date.

CHAIRMAN CHAPMAN: Correct, so there's also that time, as well, for folks to comment in, if there's something we're unaware of.

All right, so the motion to remove

procaine from 205.603(b) is based on the following criteria: the Organic Foods Production Act and/or 7 CFR 205.600(b). If applicable, the reason given is essentiality.

The motion is made by Dan, seconded by Sue. This is a motion to remove, so a yes vote is to remove, a no vote is to retain, and the voting will start with Dan.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

CHAIRMAN CHAPMAN: Chair votes yes.

MS. SWAFFAR: Can we get clarification from Sue?

CHAIRMAN CHAPMAN: Sue, we couldn't hear your vote. Can you vote again?

MS. BAIRD: I said no.

CHAIRMAN CHAPMAN: Fourteen yes, one no; the motion passes.

So we're going to take a break now; it's 10:30. We'll come back into session in 15 minutes, at 10:45.

Just a note, we found these glasses; has someone lost a pair of glasses, or know who these belong to? I'm going to put them over by Michelle, but come find them if they're yours.

DR. TUCKER: We also found a small black button.

CHAIRMAN CHAPMAN: A small black button; so if you're missing a button, come find us too.

(Whereupon, the above-entitled matter went off the record at 10:31 a.m. and resumed at 10:47 a.m.)

CHAIRMAN CHAPMAN: Members of the board can return to their seats; members of the public finish their conversations.

All right, we're going to get started back up now. We're still on livestock agenda, so I'm going to hand it back to Ashley.

MS. SWAFFAR: Starting with sulfur, Dr. Brines, you want to introduce it?

DR. BRINES: Yes, thank you. I'm happy to introduce the petition. This petition for sulfur was received by the program on March 1st, 2016, and was submitted by Landis International, Incorporated. The petition requests the addition of sulfur to Section 205.603 of the national list.

There was a technical evaluation report that was prepared in response to the request from the Livestock Subcommittee for this material. Sulfur has also been previously classified by the board as a synthetic substance. Thanks.

MS. SWAFFAR: Thank you, Dr. Brines.

A-dae?

MS. BRIONES: Yes, so the petition is for sulfur to be used in livestock production, as a livestock parasiticide. It's currently allowed for use in the production of organic crops as an insecticide, for plant disease control, and as a plant or soil amendment.

Sulfur is used as a pesticide repellant for mites, fleas, and ticks for domestic livestock, chickens, turkeys, ducks, cattle, swine, sheep, goats, and other animals. Sulfur its application by rubbing a powder into the feathers and hair.

We had a few written comments; there was one comment that didn't support its listing. Another commenter supported the listing with conditions, with more studies on the necessity of sulfur.

But other commenters generally supported its listing, including those from veterinarians and producers. One organization or one oral commenter cited the transition of open

pasture poultry operations required more tools in their toolbox to allow for open pasture grazing of poultry.

MS. SWAFFAR: Thank you, A-dae. We'll open the floor; any discussion? Emily?

MS. OAKLEY: Could you elaborate on the public commenter who did not support the listing of this material, and the one who supported it with reservations?

MS. BRIONES: Yes, one commenter, beyond pesticides, suggested well questioned its compatibility with organic practices; questioned its necessity and questioned the impact on human and environmental health.

The other commenter who supported its listing pending greater analysis of the substance necessity, and that was the Cornucopia Institute.

MS. SWAFFAR: Emily?

MS. OAKLEY: Sorry, one more question, which is the impact on animals. I've been asking some of the commenters, and I noticed that that was missing from the overall review. Given that

it's a known skin and eye irritant, that's my main concern.

You're weighing out the animal welfare issue of not wanting them to have the mites, ticks, etc., but you also don't want them to be subjected to skin and eye irritations.

So I guess that's my concern right now; I'm not totally sure how to address that. I'm not on livestock, so I don't want to throw a wrench in plans, but it would be great if people had information on that, if you could share it, or help me clarify my uncertainty here.

MS. SWAFFAR: So I'll take that one. You know, I just look at the alternatives of what we're using. Diatomaceous earth is one of the things that people say is an alternative. I don't know if you all have ever worked with diatomaceous earth; it's not a great thing, it really hurts your lungs. So I kind of weigh those options.

Also, from a worker's standpoint, it's not a great alternative, either. I've not had

much experience with using sulfur firsthand in chicken houses. How I know that some producers on the conventional side are using it is more in a dust box setting.

So it's not pure sulfur being applied to the animal; they'll mix it in with some shavings or something like that. That way, they get a little dilution instead of taking sulfur and rubbing it into the feathers, as the petition said. That's not really what's happening.

I don't have firsthand experience of knowing of birds getting blinded or anything like that, but I will say that most producers wouldn't be applying a product that would blind their birds. Because then, they would go out of production, and that's the worst thing you can have, for a hen not producing an egg.

Yes, Sue?

MS. BAIRD: Yes; I have seen a few producers that use the sulfur in their dust boxes, but I would agree; I've not seen anybody rub it into the -- first of all, they just don't

take that much care of their chickens, unless they're pet chickens. Then they'll pick each chicken up and rub it.

So it's used in dust boxes; I've not heard of any who say that there are problems with eyes as a result of that.

I know that they were concerned that perhaps they would then go to the dust box, the animals would go outside and affect the soils out there. I think that would be pretty minimal, if at all.

MS. SWAFFAR: Harriet?

MS. BEHAR: Yes, I agree with that. I would rather not -- we don't have any really great alternatives.

And I think it's also a good idea, when you're trying to deal with a parasite that could build resistance one way or another, to have various things in rotation. I don't know if they ever get resistance to diatomaceous earth, but it is a nasty substance to use. So I will vote for this.

MS. SWAFFAR: Steve?

MR. ELA: I just want to say that I echo Emily's thoughts. On the crop side, as a producer who uses sulfur, it's really nasty when you get it in your eyes, and it's really easy to do that.

It does kind of puzzle me; I know chickens are different, but since this is all of livestock, as I understand, and I may not be correct on that; but I would think that cattle or any bigger species -- the evidence doesn't jive with me.

I don't quite understand how you can dust it and not get it in the eyes, and not have it be an irritant. There must be something I feel like I'm missing something.

MS. SWAFFAR: So I'll call on myself; most of the time, sulfur is in a wettable powder form. There's one particular brand name that most people use.

I do inspect a lot of chickens every year, not only organic, but on the conventional

side too, doing welfare inspections. What I see of the use of this product; I do see some use of it. Producers aren't just going in and putting it in dust boxes as a preventative step. Most of the time I've never seen it used as a preventative step; it's only if you have a mite infestation. That's when they're using this product.

So that's one important note; it's not like every chicken in America is going to have sulfur all over it. But I will say, in my experience with the alternatives; diatomaceous earth and all that, producers are just not seeing that work.

Diatomaceous earth is great for internal parasites; external, not so great. Mites are really hard to get rid of in a poultry house. I feel it's a really critical tool for them to have in their toolbox.

Emily, did you have comment?

MS. OAKLEY: No, we've never really used sulfur on our farm, but I have handled it.

It's also itchy; so I just wanted to throw that out there as well.

I just come at it from the crops perspective, and knowing that it's not a material that you want to get on you, if you can avoid it.

But I hear the animal welfare issue as well. We have chiggers in Oklahoma, and they're awful, so it's a conflict.

MS. SWAFFAR: Harriet?

MS. BEHAR: So this sulfur is considered a synthetic because of how it's been extracted. And it really is, but it's not available. But sulfur is an element that, in the past, had been mined. But now, my understanding is that it comes out of scrubbers from coal-fired plants and things like that.

So the lower cost of that manufacturing process has made it that we're not really pulling it out. But if it would have been a mined product, it would have just been natural and would have been allowed.

MS. SWAFFAR: Sue, comment?

MS. BAIRD: Yes, I found it interesting; the pastured poultry person who commented yesterday said that they're seeing more impacts from mites since they've been out on pasture than when they were in the houses, or they had outdoor access; but mainly in houses.

And now they're putting them out on pastures, and they're seeing more mites. It really does impact their health, when they have mites. They scratch, they lose their feathers; I think it is a health issue for the animal, that we find a tool they can use to get rid of the mites.

MS. SWAFFAR: A-dae?

MS. BRIONES: And I would note that we had a commenter, Georgia Sulfur, who did mention that they had a product that is petroleum jelly based. And also in the TR, it mentioned that sulfur can be combined with lard, so it's not purely in dust form.

MS. SWAFFAR: That is true, but most people I know aren't going to go walking around,

spreading that on every chicken. This is a vent mite, usually, and to Sue's point, this does lead to picking.

It also has a greater welfare impact for the birds, with the mites. Because I've been in a few houses with mites, and it's not pretty at all.

Yes, Harriet.

MS. BEHAR: But the jello lard could be used in other species of livestock.

MS. SWAFFAR: Yes, that is important to note. It's not just for poultry; the primary use is for poultry.

Any other discussion? I just want to reiterate that I do really support this; a lot of poultry farmers that I see every week are always asking me for a great option for mites. Most of the folks I talk to would really like to have this as a tool in their toolbox.

Tom, we're ready to vote.

CHAIRMAN CHAPMAN: Okay. So there is no classification motion here, because this

material has been previously classified. The motion is just on the petition itself, to add sulfur as petitioned, to 205.603. The motion was made by A-dae and seconded by Jesse, and the voting will start with Scott.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Abstain.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Abstain.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

CHAIRMAN CHAPMAN: Chair votes yes. Thirteen yes, zero no, two abstentions; the motion passes.

MS. SWAFFAR: Thank you; moving on to hypochlorous acid, Dr. Brines.

DR. BRINES: Thank you. The petition for hypochlorous acid was submitted to the program on July 11th, 2016 by Innovacyn. The petition requests the addition hypochlorous acid to Section 205.603 of the national list as a topical medical treatment.

This use is beyond the use that was previously considered by the board in a previous petition. In addition to the technical reports that were already available for this substance, the subcommittee did request the development of a limited-scope technical evaluation report to consider additional uses. That report and the petition are available to the public on the NOP website. And this substance was previously classified by the board in its previous reviews as a synthetic substance. Thank you.

MS. SWAFFAR: Thank you. Francis?

DR. THICKE: I forgot I'm in charge of this one. So this is being petitioned for use

for pink eye and as a wound spray, as an antimicrobial.

As was mentioned, it was already on the list for other uses, as sanitizers. But we in the Livestock Subcommittee recognizes a difference in this use, in that this is not being used as a general sanitizer in this case. It is being petitioned for a health product, and there are other options available for producers to use.

So this is a topical treatment for pink eye and wounds. It has different considerations, because as the technical report indicates, there are a lot of other options for pink eye and wound treatment in livestock, and in the proposal, we've listed about 20-some that can be used. And so the Livestock Subcommittee was not real amenable to adding this to the national list.

And public comments were mostly in favor of not allowing it to be put on the list. So I think we feel pretty confident that we should not put it on the list, and I would like

to open it up to others' comments.

MS. SWAFFAR: Harriet?

MS. BEHAR: I do see producers struggle, sometimes, with pink eye; but I also see most of them working it out with the current materials that we have on the national list.

A lot of it is also kind of management related; just not causing the animals to be in really brushy areas, where they're going to tear out their eyes, and allow that bacteria to accumulate.

But I do see people having good luck with the current system.

MS. SWAFFAR: Francis?

DR. THICKE: Yes, I would agree that management is very important. Just to kind of look at how pink eye happens; when animals start to tear up, they're starting to get infection. And then you need to do some kind of eye wash to prevent it from settling into the tissue.

And so these products can do that; a lot of products can serve as an eye wash, as a

hypochlorous acid could do, to prevent it from settling into the tissue.

But once it settles into the tissue, none of these products are really going to solve the problem. Then you need an antibiotic or something else more systemic to really solve the problem. And then, of course, the animal needs to be taken out of the herd.

But even for topical treatment, there are products commercially available. I'm familiar with one that I use, that is a mixture of three materials: garlic, aloe, and comfrey. The garlic serves as an antimicrobial, the aloe serves as a soothing effect, and the comfrey serves as a healing stimulant.

So I feel that we really have what we need for tools for this system.

MS. SWAFFAR: Anyone else? All right, it looks like we're ready to vote.

CHAIRMAN CHAPMAN: Okay. Again, there is no motion to classify, since this material has been previously classified. So it's just votes

on the petition. The motion is to add hypochlorous acid at 205.603; the motion was made by Francis, seconded by Harriet. A yes vote is to add, a no vote is to reject this petition.

The voting will start with Sue.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. SWAFFAR: Thank you, Francis.

That is your last material of your tenure. It makes me sad.

All right. Moving on for a clarifying emergency for use of synthetic parasiticide in organic livestock production. No introduction by Dr. Brines, so we'll go to Harriet.

MS. BEHAR: Okay. This was put in place due to the vote by the Livestock Subcommittee close to two years ago, to lower the withdrawal time for moxidectin and fenbendazole, which was precipitated by the removal of ivermectin.

So the thought was, We have one less parasiticide and then the other two would have more availability, by having a lowered withdrawal time. But it was tied to the phrase, for emergency treatment.

So there was a thought that, in order to have consistency in the certification system, to make it transparent for producers, certifiers, inspectors, and consumers, of when these parasiticides were being used, that we should

define what an emergency is when relating to parasiticides.

At first, we discussed defining emergency in a broader sense. But since the word, emergency, is used numerous times in the regulation in crop production and other places, we thought we would stick to keeping it in the livestock section and just define what an emergency looks like, and when synthetic parasiticides were going to be used.

So we looked at following the hierarchy for using synthetics in both the processing and the crops sections of the rule; first, you should be looking at management, cultural, biological, mechanical ways of preventing the problem. After that, move towards the use of natural materials, having the synthetic being the last resort.

And that was somewhat of a roadmap to help operators understand that, again, just because a synthetic is on the national list -- in this case, a synthetic parasiticide -- that's not

the first place you go when you have a problem. Really, you should be looking to prevent the problem to start with, and work through that hierarchical chain to the synthetic.

We did get a lot of comments, which is always wonderful to read, and so I thank everyone for that. It looks like we probably should send this back to subcommittee to take into account all of those great comments.

I really appreciated the comments from the numerous certifiers, NOC, Straus, MOSA, CCOF, PCO, OEFFA, and others who commented on how this would be implemented.

They are the ones who have to read the language and explain it to their producers. So we definitely don't want there to be confusion out there. The whole point was to have clarity.

So that's it. There is a lot of verbage, that was one thing. We did discuss this with the program, and they gave input as well on where to put it and how to write it and things like that. So once we do get the wording right,

we could put this forward for rulemaking.

MS. SWAFFAR: So I'll open it up for discussion. Dave?

MR. MORTENSEN: Yes, this strategy sounds great; we're all for clarity.

MS. SWAFFAR: Emily?

MS. OAKLEY: It's a good example of collaboration between the NOSB and the NOP, because you certainly don't want to write something that can't past the muster of the NOP.

MS. SWAFFAR: So I just want to talk a little bit about this. I know there's been a lot of suggestion that maybe this would be better as guidance, and a lot of folks in the audience know my feel of guidance.

You probably won't get anything out of livestock, as guidance for a while, because I think there's a lot of room for interpretation in guidance, and that's what we're trying to solve here, is trying to define that.

But I really appreciated the public comment on ways for us to actually improve this

document. I think we'll come back with something even stronger, hopefully in the spring.

So does anyone -- Harriet?

MS. BEHAR: There were numerous comments on addressing this issue somewhat differently, not having the hierarchy in there, and instead having a specific definition for emergency treatment when using synthetic parasiticides, putting it instead in the definition section; and so we'll look at that.

MS. SWAFFAR: Any other comments? Harriet?

MS. BEHAR: I make the motion to send it back to subcommittee.

MS. SWAFFAR: Do we have a second?

MR. MORTENSEN: I second.

CHAIRMAN CHAPMAN: Okay. There's a motion to refer the proposal on clarifying emergency for use in synthetic parasiticides in organic livestock production back to the Livestock Subcommittee. The motion was made by Harriet, seconded by Dave. A yes vote is to

refer back to subcommittee; a no vote is to continue discussion of this item. The voting will start with Harriet.

MS. SWAFFAR: Point of order; we should open the floor.

CHAIRMAN CHAPMAN: Is there any discussion on this motion? Seeing none, we will proceed to a vote. The voting will start with Harriet.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

CHAIRMAN CHAPMAN: Chair votes yes. Fifteen yes, zero no; the motion passes, and it's referred back to subcommittee.

MS. SWAFFAR: And that concludes Livestock. Once again, we get you back closer to on time.

CHAIRMAN CHAPMAN: Thank you, Ashley. We're only about an hour behind right now, not bad. Up next is Handling; Lisa? Lisa De Lima, Chair of Handling.

MS. DE LIMA: All right, we're going to jump right into sunset, starting with attapulgite. Dr. Brines?

DR. BRINES: Thank you. We begin the Handling Subcommittee sunset review under Section 205.605: non-agricultural, non-organic substances allowed as ingredients allowed in or on processed products labeled as organic or made with organic specified ingredients or food groups.

The first listing is attapulgite as a

processing aid in the handling of plant and animal oils. The most recent technical review was completed in 2010. Thanks.

MS. DE LIMA: Joelle?

MS. MOSSO: Attapulgite is a natural clay with adsorptive properties, with an open channel that can filter and absorb and adsorb substances to remove powders and other impurities.

During the spring comment, we received three votes to maintain and two to question removal due to lack of support info we received to public comments.

Otherwise, it's a pretty non-contentious material.

Within subcommittee, we had zero yes votes to remove, seven to maintain, and one absent.

MS. DE LIMA: Is there any discussion?

CHAIRMAN CHAPMAN: Okay, we have a motion to remove attapulgite from 205.605(a). The motion was made by Joelle and seconded by

Ashley. This is a motion to remove, so a yes vote is to remove, no is to retain; the voting will start with Emily.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. DE LIMA: Next up, diatomaceous earth; Dr. Brines.

DR. BRINES: Thank you; we're

continuing on under 205.605, non-synthetics allowed, and the listing is bentonite. Thank you.

MS. DE LIMA: Joelle?

MS. MOSSO: The second of the clays; it's a natural clay that is also used for filtering. It's used widely in the wine and oil industries to remove proteins and impurities.

It is manufactured by open mining, which is what we received two comments for further review on. However, nothing has changed since prior listing.

It was reviewed in 2015 with no opposition to relist, and in the fall, we received four comments to relist. It was noted to be extremely critical to the wine and oil industries.

In committee, we had zero to remove and seven to maintain listing, with one absent.

MS. DE LIMA: Any discussion? Harriet.

MS. BEHAR: I like fermented

beverages.

MS. DE LIMA: All right. No other discussion?

CHAIRMAN CHAPMAN: All right, this is a motion to remove bentonite from 205.605(a). The motion was made by Joelle and seconded by Ashley. A yes vote is to remove, a no vote is to retain, and the voting will start with Francis.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. DE LIMA: All right, next up is nitrogen; that's me, and my whole computer just froze, so give me a second to catch up. Dr. Brines?

DR. BRINES: Okay, I'll read slowly, then. So we're continuing on under 205.603(a), non-synthetics allowed, and the listing is diatomaceous earth: food-filtering aid only. The most recent technical advisory panel report is dated 1995. Thank you.

MS. DE LIMA: Joelle?

MS. MOSSO: Okay, so we move from clays to crushed shells of silica. They are also filter aids for syrups, juices, beers, and other beverages, as well as other products within the industry.

It is not present in the finished product, and is classified as a processing aid. It is also produced through mining. In spring we received a lot of public comment to relist, as it

is considered critical; and in fall, we received five public comments to relist as well.

In committee, we had zero to remove, seven to retain on the list, and one absent.

MS. DE LIMA: Any discussion from the board? Seeing none, we'll move to a vote.

CHAIRMAN CHAPMAN: This is a motion to remove diatomaceous earth from 205.605(a). The motion was made by Joelle and seconded by Ashley. It's a motion to remove, so a yes vote is to remove, a no vote is to retain. The voting will begin with A-dae.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. ELA: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. DE LIMA: All right. Next up is nitrogen. Nitrogen is used to --

CHAIRMAN CHAPMAN: Dr. Brines.

MS. DE LIMA: Oh, sorry.

DR. BRINES: Sorry to jump in there. Very quickly, we're still under the non-synthetics allowed, and this listing is nitrogen, oil-free grades with a technical advisory panel dated 1995. Thanks.

MS. DE LIMA: All right. So, nitrogen, used in storage and packaging, used in flash-freezing of foods. This was another material that we reviewed two years ago and passed, and that we're looking at again.

In the early review, all comments were in favor of it remaining on the national list.

Any discussion? Seeing none, we'll move to a vote. Tom?

CHAIRMAN CHAPMAN: This is a motion to remove nitrogen from 205.605(a). The motion is made by Lisa, seconded by Ashley. It's a motion to remove so a yes vote is to remove, a no vote is to retain, and the voting will start with Lisa.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. DE LIMA: Next up is sodium carbonate. Dr. Brines?

DR. BRINES: Thank you. This is the final substance under Section 205.605(a), a non-synthetics allowed, and the listing is sodium carbonate. The last technical report is dated 1995. Thanks.

MS. DE LIMA: So this is another material we're reviewing early. Sodium carbonate is used as a leavening agent. It can also be used as an anti-caking agent and an acidity regulator and stabilizer, no ancillary substances.

And in the public comment from the spring, this round of public comment stated that it is essential for use in things like soy-based extraction, frozen desserts, and baked goods. And also interesting, used as a pH adjuster in organic laundry detergents.

Any questions from the board? Seeing

none, we'll move to a vote.

CHAIRMAN CHAPMAN: This is a motion to remove sodium carbonate from 205.605(a). The motion was made by Lisa, seconded by Ashley. It's a motion to remove, so a yes vote is to remove, a no vote is to retain. We'll start the voting with Asa.

MR. BRADMAN: I want to keep it, so, no.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. DE LIMA: All right. Next up is acidified sodium chlorite. Dr. Brines?

DR. BRINES: Thank you; we're now moving to paragraph (b) of Section 205.605. Paragraph (b) is synthetics allowed, and the listing is acidified sodium chlorite: secondary direct antimicrobial food treatment and indirect food contact surface sanitizing, acidified with citric acid only.

The original technical report was completed in 2008, and a more recent technical report for livestock uses was also completed in 2013. Thanks.

MS. DE LIMA: Ashley?

MS. SWAFFAR: Acidified sodium chlorite is one we're doing early again. It's used as a processing aid in wash and rinse water, and for disinfecting food processing equipment, utensils, and other things.

Some of the public comment that we got

was that it's used to control food-borne pathogens, to protect consumer health, and comply with FSMA.

And then we got another comment again, saying that we should do the comprehensive review of sanitizers, which the materials committee is hoping to do.

You know, it's another tool in the toolbox for folks who are compliant with the FSMA in sanitation.

MS. DE LIMA: Any discussion?

MR. BRADMAN: I'll make a longer statement when we talk about chlorine materials, but I just wanted to reiterate, I do think we need some more review on chlorine materials. I'll touch on that again; thanks.

MS. DE LIMA: All right, we'll move to a vote.

CHAIRMAN CHAPMAN: Can you scroll down? Michelle can you scroll down? So this is a motion to remove acidified sodium chlorite from 205.605(b). The motion was made by Ashley,

seconded by Lisa. It's a motion to remove, so a yes vote is to remove, and a no vote is to retain, and the voting will start with Joelle.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. ELA: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. DE LIMA: Next up, carbon dioxide. Dr. Brines?

DR. BRINES: Thank you; we're still

under paragraph (b), synthetics allowed, and the listing is carbon dioxide. The most recent technical report for this substance was completed in 2006. Thank you.

MS. DE LIMA: Carbon dioxide is used in MAP packaging and storage, freezing of foods, beverage carbonation, as an extracting agent, processing aid, and pest control in grain and produce storage.

All public comment received was in favor of retaining on the national list, and this was just reviewed in 2015 by the board and voted unanimously.

Any discussion? Seeing none, we'll move to vote.

CHAIRMAN CHAPMAN: It's a motion to remove carbon dioxide from 205.605(b). The motion is by Lisa, seconded by Ashley. A yes vote is to remove, a no vote is to retain, and the voting will start with Steve.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. DE LIMA: Next up is chlorine materials. Dr. Brines?

DR. BRINES: Thank you; continuing on, paragraph (b), synthetics allowed. The listing is chlorine materials: disinfecting and sanitizing food contact surfaces, except that residual chlorine levels in the water shall not exceed the maximum residual disinfectant limit

under the Safe Drinking Water Act. In parentheses, the materials are calcium hypochlorite, chlorine dioxide, and sodium hypochlorite.

The most recent technical report for these materials was completed in 2006. Thanks.

MS. DE LIMA: Ashley?

MS. SWAFFAR: So chlorine materials are used to disinfect and sanitize food contact surfaces. Some of the public comment that we received is that chlorine materials are the best option for mitigating fungi and molds.

These materials are strategically used to ensure food safety. Another one said that organic handlers have the same responsibility with regard to food safety as conventional handlers, only organic handlers have far fewer options when it comes to the materials available to protect food from contamination.

And then we received several comments over -- we just reviewed this one too, saying that these are essential materials for their

operations for food safety.

And we did get the comment again, asking for a comprehensive review of sanitizers.

MS. DE LIMA: Any discussion? Asa?

MR. BRADMAN: I just want to make a few comments on these. These are pesticides; they are synthetic pesticides. They are essential, as we hear, for food safety. In that sense, they are important for public health.

But I think they represent kind of the trade-offs we have with organic and other settings, when we use toxic materials for public health. It's the same reason we still use DDT for malaria control, the reason why they're spraying organophosphates in Florida for Zika.

It's really the same application here, but I think we all understand that they're essential. But there are risks associated with these. Bleach itself is considered an asthmagen by the Association of Occupational and Environmental Clinics.

Chloroform in the air is associated

with these chlorine materials. Chloroform is a known carcinogen and a known reproductive toxicant.

So we're intentionally using materials in this sector that we know have pretty serious health impacts.

There's not much data in the food processing sector, but in California the occupation with the highest occupationally-acquired asthma is in janitorial services, which involve cleaning products, a lot of bleach and disinfectant use.

As probably many of you know, the EPA has been going through process to review sanitizers' use in hospitals. I do a lot of work in child care settings; a lot child care facilities are actually moving away from bleach.

So I think there's a really important and essential use for sanitizers, but I think this is a really important issue. It's a case where we're using serious pesticides that have bad impacts; lifelong respiratory disease,

potentially, and other health impacts.

I think there really is a need for a comprehensive review, and through the life of organic, which will hopefully be until the end of time, we need to continually review and improve and understand what the implications are of these materials.

MS. DE LIMA: Emily?

MS. OAKLEY: Thank you so much for that, Asa. That was articulate, well declared, and I hope that that will make the case crystal clear for why we need to add this to our work agenda.

MS. DE LIMA: Joelle?

MS. MOSSO: Definitely agree with everything Asa just said. I just would like to emphasize right now, it is the best tool from a food safety perspective, and it is essential, as Asa did note.

That being said, I think in addition to the comprehensive review that we do with sanitizers, just to emphasize the need, when new

petitions for sanitizers come on, to be diligent and really look at them as, could they be applicable, and what other impacts they may have.

Chlorine is definitely a human health irritant. It's also an environmental concern, with waste water discharge, etc. But it is certainly essential and critical at this point, in order to ensure a safe food supply. One of the reasons why the U.S. food system is as safe as it is in comparison to other areas of the world, where people to worry about dying the day after they eat.

So I think we need to keep perspective, but certainly an emphasis to find a better solution other than chlorine.

MS. DE LIMA: Francis, and then Harriet.

DR. THICKE: Yes, thank you, Asa and Joelle; you articulated it very well, and that's the reason why we do need this comprehensive review. I suggest that both Asa and Joelle are part of that review process.

MR. BRADMAN: I accept. I don't know where the time is going to come from, but I think it's an important issue.

MS. BEHAR: I already asked you both, but I wanted to also make sure that on that comprehensive review, on the work agenda, that we're also looking at naturals as well as synthetics; so things that are not necessarily already on the national list, because we're allowed to use natural items like vinegar and essential oils; I don't even know what's out there.

But there could be, in certain situations -- I'm not necessarily saying in a meat-slaughtering plant where you really do need to have high rates of pathogen kill -- but there could be other places where more natural materials would be maybe even preferred.

MR. BRADMAN: I think what you're getting at is the issue we deal a lot with in child care. There are obstacles around where you need to clean, where you need to sanitize, and

where you need to disinfect.

And it's important not to use your most harsh materials where you just need to clean, but also follow the rules to where you need to sanitize or yet another level, disinfect.

And then of course, for the materials you use for sanitizing and disinfection, they usually need some other level of approval like EPA. And often some natural materials don't make that bar, although in some cases, they may actually meet those criteria, but they haven't been reviewed and approved.

MS. DE LIMA: Dave and then Ashley.

MR. MORTENSEN: I also want to thank you both; that was really helpful and insightful. If it was the case that we see increased indoor production of plants, I've seen a lot of bleach used in that environment, to sterilize the restart of the hydroponic system and such.

So I think we'll want to be continuing to think of systems level, and I thank you for that rigorous and thoughtful discussion of the

topic.

MS. DE LIMA: Ashley?

MS. SWAFFAR: Yes, I just want to say why I think the comprehensive review of sanitizers is important, because we hear this every time we look at sanitizers.

I just want to stress how critically important chlorine is to stay on the national list now. You know, I also look at this from a small-scale handler perspective. Chlorine materials are readily available; there may be other alternatives, but they might be a crazy system that you have to install.

So I hope you guys look at that when you are doing your review, and consider not everyone is a huge manufacturing facility. There are a lot of small scale, on-farm handling facilities.

MS. DE LIMA: Joelle?

MS. MOSSO: I'll be brief; just to speak to that, there are definitely some natural alternatives, but they do not have the efficiency

that chlorine does. And unfortunately, in most applications would not be appropriate to be used.

I think I can speak pretty confidently for people who do use a significant amount of chlorine; it's definitely not their choice to do so. But certainly from a food safety perspective, having read and monitored that for a long time now, nothing so far is anything near equivalent to chlorine.

So yes, just to emphasize its critical nature from compliance as well as just safety.

MS. DE LIMA: Steve, and then Harriet.

MR. ELA: And we are one of those small-scale handlers. I would echo that it's a challenge, and with FSMA now, where we're looking at packing lines that have to have zero contamination, and yet we're dealing with a crop that is inherently outside; it's almost an insurmountable challenge anyhow. And so I think any tool that small processors can have to make it easier is going to be critical.

And I echo -- I personally dislike

chlorine. It bothers me, yet I don't know any way around it at this point.

MS. BEHAR: Comprehensive will include practical.

MS. DE LIMA: All right. It looks like we're ready for a vote.

CHAIRMAN CHAPMAN: Okay, this is a motion to remove chlorine materials from 205.605(b). All three chlorine materials here are grouped together under the single motion. The motion was made by Ashley and seconded by Joelle. It's a motion to remove, so a yes vote is to remove, a no vote is to retain, and the voting will start with Dave.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. DE LIMA: Next up, magnesium chloride. Dr. Brines?

DR. LEWIS: Lisa, could I make one remark? Just in terms of the conversation, I found this very helpful, talking about chlorine materials related to work agenda item, especially in terms of what you mentioned about understanding the use profile.

The EPA may provide some insight with that, in how we can look at this activity in creating efficiencies in customer service.

So I'm looking forward in terms of, as we talk about this in the department, some information you provide us now would help us

frame this topic more clearly, so thank you for that.

MS. DE LIMA: Dr. Brines?

DR. BRINES: All right, thank you. Next up, also under 205.605(b), synthetics allowed; the listing is magnesium chloride, derived from sea water. And the most recent technical report was completed in 2016. Thank you.

MS. DE LIMA: So magnesium chloride; it's used as a coagulant in tofu production. It's also used in certified organic dietary supplements, vitamins, and in supplement beverages.

All the public comment that we received was in favor of retaining it on the national list. There has been public comment requesting that it be moved from 205.605(b) to 205.605(a), and that is on our work plan. We're bringing that forward in the spring.

And this was another material that was reviewed by the NOSB in 2015, and was voted

unanimously to stay on the national list.

Any discussion? Harriet?

MS. BEHAR: I like tofu.

MS. DE LIMA: All right. Seeing no other discussion, we'll move to a vote.

CHAIRMAN CHAPMAN: It's good to get that on the record, because that hasn't been shared by everyone on the NOSB in the past, but it's good to know.

This is a motion to remove magnesium chloride from the 205.605(b). The motion was made by Lisa and seconded by Ashley. It's a motion to remove, so a yes vote is to remove, a no vote is to retain, and the voting will start with Jesse.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 no; the motion fails.

MS. DE LIMA: Next up, potassium acid tartrate. Dr. Brines?

DR. BRINES: Thank you. We're continuing on under the synthetics allowed at 205.605(b). The listing is potassium acid tartrate, and the technical report was last updated in 2017. Thank you.

MS. DE LIMA: Steve?

MR. ELA: Potassium acid tartrate is a byproduct of winemaking. It's commonly known as cream of tartare, used in baking. It lit the public comment message board with, I think two comments, all in favor of relisting, so it's

pretty straightforward.

And I should note, at the spring meeting, a lot of the public comments were that it was mis-listed, and we had a proposal later on to reclassify it.

MS. DE LIMA: Any discussion? Seeing none, we'll move to a vote.

CHAIRMAN CHAPMAN: The motion to remove potassium acid tartrate from 205.605(b); the motion was by Steve, seconded by Ashley. A yes vote is to remove, a no vote is to retain, and the voting will start with Ashley.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 votes no; the motion fails.

MS. DE LIMA: Next we have sodium phosphates. Dr. Brines?

DR. BRINES: Thank you. This is the last substance under 205.605(b), synthetics allowed, and the listing is sodium phosphates, for use only in dairy foods. The technical report was completed most recently in 2016. Thank you.

MS. DE LIMA: All right. So sodium phosphates; it can have a variety of uses, but it's currently annotated to dairy use only.

The material is derived from phosphoric acid; it's used to prevent the separation of water and fat in cheese, so basically, it's an emulsifier in non-fat cheese and milk.

The vote coming out of subcommittee was unanimous to retain on the national list, but there was a split in public comment. Manufacturers in public comment said that it was essential as an emulsifier in cheese production, also in making high protein smoothies, and stabilizing the product.

We also had a lot of public comment concern about human health impacts, questioning its essentiality.

I should say we reviewed this as another one of those items that was reviewed in 2015, and we did have a technical report done. Basically, as far as the human health concerns, it was not very conclusive, and wasn't able to single out a phosphate food additive or ingredient and isolate that as one risk factor.

Tom, do you have anything to add? Tom and I were both the leads on this material.

CHAIRMAN CHAPMAN: No, I think you summarized it very well.

MS. DE LIMA: Okay, questions from the

board? Harriet?

MS. BEHAR: Was the subcommittee fully satisfied that the alternatives were not acceptable? Were there certain areas where only the sodium phosphate could be used, but not sodium citrate, for instance, or others?

I know I did ask that question of a commenter, but I'm wondering if that discussion was inside the subcommittee, and how you felt about that.

CHAIRMAN CHAPMAN: I don't want to speak for all subcommittee members, but if anyone wants to speak up on the subcommittee?

MS. MOSSO: And in regards to the question, yes, that conversation was had, certainly, and I think it was highlighted in the public comments as well, where you saw the actual buffer capacity of sodium phosphates in comparison to the alternative. The closest alternative would be sodium citrate.

And so there's a chemical-functional property that is there for sodium phosphates,

that allow it to interact, to provide the properties that are needed in that product.

And I personally spoke to people who used it and asked about their challenges on that system, to see if they could find alternatives. They certainly had investigated it, and looked; but in actuality, they ended up having to use more sodium citrate when trying to use it. So it was not as effective, and you have to closely control how you do that, and it's almost impossible to do in a commercial setting.

So irrespective of the chemical properties, which is the buffer capacity, the other alternatives are not sufficient to satisfy the same kind of effect in the food product.

MS. DE LIMA: Francis?

DR. THICKE: Maybe I'm being a purist here, but when I saw that it's used in cream to get better mouthfeel, I was a little concerned. We make cream in our on-farm processing plant, and my customers would not like to see something in their cream.

We also make cheese; not processed cheese, but of course, we don't use it. So I'm not going to vote for this product.

MS. DE LIMA: Emily?

MS. OAKLEY: I think that, in a case like this, although it would take a large quantity of sodium phosphate to potentially cause concern, I also think we should take the precautionary principle.

I think that consumers think they might want a product, but they may not know, necessarily, what's in it, and they're trusting us to make decisions on the applicability or necessity of a material.

I know that this material is used primarily in processed food, so there is a certain question of essentiality there as well, for me. So I will not be voting for this.

MS. DE LIMA: Tom, and then Joelle.

CHAIRMAN CHAPMAN: I also know sodium phosphate from a commenter, being used in cream processing plants to prevent the fouling of the

lines. If it's used in the method that you're using, I believe it would be considered an ingredient and at least be labeled at that point.

Although I agree with you, that's not an appropriate use of this material in an organic setting. It would be open to consideration and annotation that would prevent its use in cream for mouthfeel applications.

But it is used in a lot of other products in necessary applications, if you want to have those products on the market.

MS. DE LIMA: Joelle?

MS. MOSSO: Just a comment in regards to essentiality; I think one could argue that meat is not essential either, and there are health implications as well. A vegetarian would not say a meat is an essential item.

I personally am not huge consumer of processed foods, so it's not like I'm an advocate for them. But I will say that it is an option for people to pursue. It's their choice, whether or not to include it. It is used in a very small

fraction of what they are consuming, unless they over-consume, which again is a personal choice.

So I just think in argument analysis, when we look at essentiality, I don't know that it is essential to drink alcohol, or essential to have coffee, or essential to eat meat. So I think that wasn't necessarily the same sort of argument, although I do understand where you're coming from.

MS. DE LIMA: Emily and then Harriet.

MS. OAKLEY: Yes, I agree with what you're saying, absolutely, and let me clarify that. I think that while it would require more of the other material, sodium citrate, I also think that it's probably just a lot easier, also, to rely on this material.

I'm not a handler, but I do think that there might be people who would consume these products, who would then also consume, potentially, a large of quantity of other processed materials, in which this material would also appear.

And again, it's just more of a cautionary principle. I also think that it's good that we are not unanimous on everything.

MS. DE LIMA: Harriet, and then Tom.

MS. BEHAR: I am a little bit torn on this material, but I also see it as a way to open the door to consumers to a variety of products, which then opens the door to more producers to produce raw materials that are certified organic.

And so I will be voting for this material. But I hope that there will be other options available in the future.

MS. DE LIMA: Tom?

CHAIRMAN CHAPMAN: I just want to speak to Emily's last point. I often find that people look to organics to be the fix-all for all issue out there in the food system, and it's just unfortunately not the best way to solve for the issue of unknown consumption.

The best way to address that issue would be to have it published in the nutritional facts panel, which is regulated by the FDA and

unfortunately out of our purview.

But I would welcome to see more disclosure in that area. As you know, I always call for more disclosure, not less.

MS. DE LIMA: And I echo what Harriet said. Asa?

MR. BRADMAN: I echo what Harriet said, but I also like Tom's suggestion that where they use it for mouthfeel and purposes where it might not be listed, it shouldn't be allowed.

MS. DE LIMA: Francis?

DR. THICKE: I notice that you said it's not used in Europe. Did you get information about how they get by without using it in Europe? How's their mouthfeel?

(Laughter.)

MS. DE LIMA: I don't know; they might just not have mac and cheese as organic in Europe, I'm not sure. I mean, we have had this discussion about the difference and --

DR. THICKE: Yes, we had that discussion in the spring as well, and it was

mostly around the application of the products. And there's applications of products common here in the U.S. that aren't in Europe and vice versa.

The most common usage that I saw from the comments was from dried cheese products, which might just be an American thing, very much so. But it is a large -- I don't like to name names, but Annie's is a very large company, and people know that name. There are very few American households that won't have some box of mac and cheese in their cupboard somewhere, and that's where it's used.

It's also used in those portable cheese salad kits that have those little packets of cheese already processed in there, that allow you to make a salad on the go.

While these aren't maybe necessary foods -- we struggle with this with cellulose sometimes too, when you see the cellulose processing on the list. I don't know why someone can't just grate their own cheese instead of buying pre-grated cheese, but convenience is a

part of the American lifestyle.

It began with organic products get into consumers' hands in more applications, especially where some of these other materials are labeled and present, consumers can make the choice by reading the label. This only helps to grow the organic marketplace and provide more avenues for farmers to sell their products.

MS. DE LIMA: Francis?

DR. THICKE: I was just going to say, maybe it does go well with cellulose.

MS. DE LIMA: All right, on that note, are we ready to vote?

CHAIRMAN CHAPMAN: All right, so there's a motion to remove sodium phosphates from 205.605(b). The motion was made by Lisa and seconded by Tom. It's a motion to remove, so a yes vote is to remove, a no vote is to retain. The voting will begin with --

MR. MORTENSEN: Hey, Tom, just a point of clarification, if we can ask. Asa's point about an annotation; does that come after this

vote, then?

CHAIRMAN CHAPMAN: No; that would have to come as a separate work agenda item, to be requested of the program, added to it, a proposal developed, and then brought as a separate item.

MR. MORTENSEN: So that would happen after, or should we vote on this? Or should we have that annotation before we vote? I guess that's my question.

CHAIRMAN CHAPMAN: So we have to vote on sunset items, and move forward sunset votes independent of all those annotations. You'll notice a later vote, coming up around re-classification of potassium acid tartrate. That was from a previous sunset review we had done, and we had identified that as an additional work stream.

Generally, when issues are raised here, subcommittees will make note of it, take it back to the subcommittee, and the subcommittee will have a discussion as to whether or not we should proceed.

So I'm going to re-read the motion just to be clear; motion to remove sodium phosphates from 205.605(b); motion by Lisa, seconded by myself. A yes vote is to remove, a no vote is to retain, and the voting starts with Dan.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

CHAIRMAN CHAPMAN: Chair votes no. Three yes, 12 no; the motion fails.

MS. DE LIMA: Next up, casings; Dr. Brines.

DR. BRINES: Thank you; just one point of additional clarification too, in terms of the question about annotation changes. One additional option is that a member of the public could submit a petition to change the annotation. That's available to any member of the public.

So now we're moving on to Section 205.606 of the national list. That's the section for non-organically produced agricultural products allowed as ingredients in or on processed products labeled as organic. The first listing is casings from processed intestines. Thank you.

MS. DE LIMA: Asa?

MR. BRADMAN: So casings, I think is one of those materials that we generally approve routinely, and I think it will be approved today. Our committee did approve it when we voted on it.

But there's a kind of ongoing frustration with the lack of organic casings

being available, and I think that, based on the comments and some of the discussion we had last spring, there's concern that the continuous relisting of this is preventing the emergence of good entrepreneurs or the development of a market that works for organic casings.

I think I will vote to keep this on, but some suggestions have been made that we have a TR or TAP, and I think more in-depth discussion of how we can promote the emergence of organically-available casings for the sausage and meat industry.

So that's a succinct summary, I hope, and I guess we're opening it up for discussion.

MS. DE LIMA: Steve?

MR. ELA: I agree with what you say, but what I heard last spring's testimony, I interpreted differently. It's sort of like the pectin comments we had in public comment, and I'm sure we'll talk about pectin when it comes up.

Yes, there are organic animals out there, but the supply chain for casings -- and if

it were all casings were the same -- then it would be simple; organic casings or not.

But then when they segregate them on size and classification and things, you start parsing it out until you get to a small fraction. Then it becomes extremely difficult, especially for a perishable item.

And so at least what I heard was, yes, they are out there, but the way the system works, and the way you grade them makes it very difficult to establish that supply chain, just because of the small amount out there.

MR. BRADMAN: Right, and that's exactly what I understand too. You said it much better than I did. But still, I think there's a frustration that there's not organic material available. The question is, is there something we or the program can do to try to develop a market and resources to have better sorting, better access to it? That's where I think the frustration stems from.

MS. DE LIMA: Tom?

CHAIRMAN CHAPMAN: I share that frustration; I also hear oftentimes the frustration of ranchers who raise cattle for meat, swine, and other items. They struggle to find slaughterhouses that will handle organic products, and that's a huge difficulty.

And so compared to a bunch of other areas of organic agricultural growth, I think some of these meat applications have kind of lagged behind. In my mind, there's actually two better ways of going about this. Regulatory and governmental fixes might not always be them.

But one is to call upon the trade associations out there and to start looking into it. We did something similar with celery powder, which is also another meat application, to try to get fixes out there from the industry perspective.

The other thing is to just eat more organic meat. Sorry to my vegetarian and vegan friends out there.

MR. BRADMAN: Yes; I want to be clear

too, that I would retain this material. I was not suggesting we -- at least personally, I'm not going to vote against it. That said, there's this frustration.

MS. DE LIMA: Harriet, and then Sue.

MS. BEHAR: I'm not on the handling committee, but to me this represents kind of a deficiency with the way we deal with 606 items.

We look to the trade to tell us if it's out there or not. We've looked, but a lot of it, we don't understand what the barriers are. I agree with you, Steve, in what you said about the size, and maybe it's not close enough to a processing facility.

How much of this material do you need to start creating a market for this product? We don't typically get technical reviews on 606 items, in order to answer some of these questions. We don't really even have a good checklist, even for the petitioner.

I realize this is a sunset item, but as we get new things on 606, to know what to ask

what the barriers are. How could this happen in the future? Because I think that really would give the trade even more information that they need in order to be that list of opportunities for things that they could come in do as organic in the future.

So it's not a work agenda item, and I'm not on that committee; but this was one of my little pet peeves, being in the peanut gallery. I felt that 606 could really be better reviewed, as far as a checklist item, and really think through the real questions that we need to ask in order to understand its placement on that section of our national list.

MR. BRADMAN: Yes, I agree with that, absolutely.

MS. DE LIMA: Sue?

MS. BAIRD: I echo Tom's comments. At least in my part of the world, there are a lot of livestock that are being raised organic, but there's no processing plant. So they lose their organic status category.

I'm not sure this should be addressed at this regulatory. We need federal monies that encourage small processing facilities and/or larger processing facilities in more regions of the United States, so that those farmers who go to the work of raising and feeding their livestock as organic don't have to lose that status at the processing level.

If we had more livestock that were certified organic, maybe we would have more casings that are organic. That's my comment.

MS. DE LIMA: Tom?

CHAIRMAN CHAPMAN: I have a couple of things I forgot to mention. This is a 606 item, which requires commercial availability searches, regardless. So you always have to go out there and try to find an organic process. And I'm going to go back to the trade association again, where I think in the public comments they called 606 an entrepreneurial dream, which is true.

I mean, all this takes is an entrepreneur to set this up. You know, look at

the meat products that are out there. You have the certifier's name, call that certifier up and say, Hey, I've got organic casings. Tell your client that they have to source them from me. And you can charge whatever you want.

So that's a little business plan laid out for you; go get the funding and start your private business. Again, regulation isn't always the best way to solve some of these problems. Markets can solve them for us. The most effective way we've gotten items off the processing list has been from companies that have developed the market, come to us, petitioned us, and had them removed.

The other thing I want to add is, while that data request would be great, as someone who, for a profession, sources hundreds of millions of pounds of organic ingredients, that data just does not exist out there. And the request that you would have, the expertise of the panels that we have, are not qualified to do that type of work.

MS. DE LIMA: Dave?

MR. MORTENSEN: I guess there is one other thing that hasn't been brought up that's a concern of mine. When we're using conventional animals, we should in the same way that we respect them and think thoughtfully about chlorine, their diet is almost exclusively genetically-modified grains.

So we're running 90 percent GMO corn and 97 percent GMO soybean through the animals. There have been intestinal issues with that in conventional agriculture.

I'm quite concerned personally about that, and the co-mingling of GM-dependent cropping systems products in our organic systems. So I probably will vote not to renew this listing.

MS. DE LIMA: Harriet?

MS. BEHAR: Just to the point of having more slaughtering facilities; I'm a co-chair of the State of Wisconsin Organic Advisory Council, and last year, we put on two trainings

for veterinarians, because we had heard from our livestock farmers that they were working with veterinarian who didn't know anything about organic.

And so this year, our focus is on doing a training for slaughterhouses in our state, to help them understand what it would take to become organically certified.

So just on a little micro-level, it doesn't have to be at a federal level. It could be sections of a community or whatever. And our economic development section of our department of agriculture sees it as an economic development; that's where we're getting the money to put on the training.

MS. DE LIMA: All right, I don't see any more discussion. Tom?

CHAIRMAN CHAPMAN: Okay, this is a motion to remove casings from 205.606. It's a motion made by Lisa, seconded by Tom. This is a motion to remove, so a yes vote is to remove, a no vote is to retain. We will begin the voting

with Scott.

MR. RICE: No.

MS. BAIRD: No.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: Yes.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

CHAIRMAN CHAPMAN: Chair votes no. One yes, 14 no; the motion fails.

MS. DE LIMA: Next up we have konjac flour. Dr. Brines?

DR. BRINES: Thank you. We're still under Section 205.606 of the national list, CAS No. 37220-17-0. Thank you

MS. DE LIMA: Scott?

MR. RICE: Thank you. Konjac flour is a material derived from the tubers of the elephant yam, primarily grown in tropical and sub-tropical regions. It is a soluble fiber used in traditional foods such as shiritaki noodles and konjac curd.

It is also marketed at a zero-calorie, zero-carb alternative to pasta and rice. In other settings, it's used as a binder, gelling agent, thickener, and stabilizer.

Earlier this year in the first round, we had asked for input on the products that are making use of this. We really have not heard a whole lot on that. One of the ingredient trade organizations did not have further information.

We heard from OTA during their survey, that there is one comment received that it's currently in use as primary ingredient -- not a thickener, and not aware of organic alternatives.

So we don't have a lot of information on what and how many products. I'm going to open

it up to discussion.

MS. DE LIMA: I'll just add that we did have CCOF say that it was listed on none of their OSPs.

MR. RICE: And similarly, other certifiers indicating from their queries that it was not used.

MS. DE LIMA: A-dae?

MS. BRIONES: Yes, I think this is one of those ingredients that demonstrates our inability to reach certain populations. Coming from Hawaii, I know konjac flour is used in a lot of Asia-based or Japan-based products.

And so when I'm talking to people who actually use the product and try to solicit their comments either through our processes; a lot of them may not be familiar with it. So I'm going to vote to not remove it, just because I feel like if we do remove it, we're closing the door before anybody walks in to some of these populations that are kind of outside our reach right now.

MS. DE LIMA: I'm going to call on myself and then Tom. Were any of the folks that you talked to producing products that were certified organic?

MS. BRIONES: Yes, two of them.

MS. DE LIMA: What kinds of products were they?

MS. BRIONES: They were mochi-based desserts, that are sold primarily in Hawaii.

CHAIRMAN CHAPMAN: That was my question. I was going to vote to take this off, but I was looking for something like that, evidence or someone to come forward saying that they're using it, and the applications they are using it in.

Knowing now that it's being used, I think I would take a deeper look at why we can't be making this organic, or where that is. But given that most of our research up to this point was around the question of whether this was being used, I had intended to vote to remove it, but I think I will be voting to retain it.

MS. DE LIMA: Steve?

MR. ELA: My sense is that there are organic sources of the flowers, from what I've heard in comments. So I guess the vote to remove doesn't remove it from the availability to use it in a product; it just removes it as a non-organic form. Am I thinking right, Scott?

CHAIRMAN CHAPMAN: Correct.

MR. RICE: When I looked at this, there are 11 folks on the operations on the integrity database that offer some form of konjac. As I mentioned in the brief summary of how it's used, those may or may not need the supply that, say, the mochi maker needs. Again, that's data that's challenging to get, but I would say that in some cases, going to the trade is exactly where we need to go to get that information.

And as we heard yesterday, they themselves have had a little challenge reaching out. So we may hear something further, but there are few organic supplies.

CHAIRMAN CHAPMAN: And just to clarify, the 11 listings are in the OID database, is that how you got those?

MR. RICE: Correct.

CHAIRMAN CHAPMAN: And so those may be brokers of the same product? Someone's out there with it, but it may not be 11 people; it could be less.

MS. DE LIMA: Ashley and then Emily.

MS. SWAFFAR: A-dae, I just had a question for you; do you know if they've tried to source organic konjac flour, and just can't find the amount they need?

MS. BRIONES: I don't have an answer for that; I don't know.

MS. DE LIMA: Emily?

MS. OAKLEY: I was just going to say that a lot of times, small scale farmers have talked to me or sent me personal emails about hydroponics, for example. And I copy and paste the link to regulations.gov just so that it's on the written record. I don't know if there are

any limitations to technology with anybody you've spoken to, but just to encourage it, even if the docket's closed at that point, to get it on the open docket later.

Because then it's more part of the public record, and we can more easily seek information, like the questions that are coming up right now that I don't want to disregard. It will be important to try to get it on the open docket in the future, but thank you for presenting those views.

MS. DE LIMA: Dan, and then Tom.

DR. SEITZ: So if memory serves, I thought there was a concern that some of the supply was genetically modified. Is that the case? That's sort of lodged in my head.

MS. DE LIMA: Scott, you want to answer that?

MR. RICE: We didn't get any further information on that being the case. If it's a known commercial variety, that would be something that would be looked at in the certification

process.

MR. MORTENSEN: Dan, that's not a transformed plant.

CHAIRMAN CHAPMAN: And even if it was, the non-GMO requirement would still play in a 606 item, fully. So an agricultural product that's used in conventional form still cannot be produced with excluded methods.

And I just wanted to remind people that commercial availability still applies on 606, which means the producer still needs to go out there and do the search and prove to their certifier that the organic forms are not sufficiently available for them.

I did have one question for the program, throw you guys on the spot real quick here; I think the past NOSB has passed guidance recommendations on how commercial availability searches should occur for 606 items, and I'm curious to know where that is in the rulemaking or review process.

DR. LEWIS: We're aware of that; we're

trying to balance in terms of that issue among other issues that we're working on now. We'll get back to you on that.

CHAIRMAN CHAPMAN: Thank you.

MS. DE LIMA: Scott?

MR. RICE: I neglected to comment; in terms of comments, we did receive a couple of comments. One mentioned the concern around a potential GE source, and just the use of conventional pesticides on conventional konjac.

MS. DE LIMA: All right. I don't see any other discussion. Tom?

CHAIRMAN CHAPMAN: Okay, we'll be moving to a vote. The motion is to remove konjac flour from 205.606, based on the following criteria from the Organic Foods Production Act, Section 2118(c)(1)(A)(ii), essentiality.

The motion was made by Scott and seconded by Ashley. This is a motion to remove, so a yes vote is to remove, a no vote is to retain. The voting will start with Sue.

MS. BAIRD: Based on A-dae, I'm going

to say no.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: No.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: No.

CHAIRMAN CHAPMAN: Chair votes no. Eleven votes yes, four votes no; the motion passes.

MS. DE LIMA: And our last sunset is pectin. Dr. Brines?

DR. BRINES: Yes, thank you. Wrapping the sunset review for 2019, the very last substance is pectin, non-amidated forms only.

The most recent technical report for this substance was completed in 2015. Thank you.

MS. DE LIMA: Tom?

CHAIRMAN CHAPMAN: So pectin is extracted from citrus and palm fruits, and based on tests that have been given, there is no organic source of organic extracted pectin available.

It's used as a gelling agent in jams, preserves, fillings, and other products. The public comment here was fairly extensive in favor of retaining the substance. There were three certifiers who also spoke on behalf of their clients.

Several primary users, five trade associations, and an input seller; one of those trade associations was a trade association for pectin.

Comments from the producers were that this was necessary, essential, and primarily used in yogurt manufacturers in their fruit preps, in jams and jellies, and by confectioners.

There were questions posed by an interest group around changing the annotation to limit high methoxyl forms of it, and there was a question around the impacts of conventional agriculture when using a conventionally-sourced ingredient.

We had some dialogue around organic sources and difficulty within the industry via oral comment yesterday, and they expressed a difficulty in obtaining sufficient raw material of the right amounts to produce and standardize a product out there for commercial sale.

Another minor point that we will add to the final notice; there was another ancillary substance category provided in the written comments, which was the presence of organic acids, citric and lactic as a standardizing agent. Those are two materials that are already on the national organic list.

MS. DE LIMA: Any discussion? Harriet?

MS. BEHAR: Similar to casings, just

the desire to see this. But in finding out that there's no domestic production of pectin -- it's all made overseas -- was kind of interesting to me.

However, coming from lemons and limes, I know that a lot of the organic lime and lemon juice is not produced in the United States either. So I'm just hoping that someone will -- it's a little bit harder for us to pressure foreign manufacturers to go organic, than here domestically.

But again, I think understanding the challenges to the organic production helps us make those decisions.

MS. DE LIMA: Tom, and then Emily.

CHAIRMAN CHAPMAN: Just to add a nuance on that; I think one of those manufacturers was in Europe, and I want to point out that this is also on the European standards. It's an allowed non-organic ingredient in all products except for meat-based products.

MS. DE LIMA: Emily?

MS. OAKLEY: I would in no way advocate for its removal, but it would be great if we could have an organic source of pectin, because peelings are often a source of high concentrations of pesticides in conventional fruits. So it would be great if we could get an organic market for it.

MS. DE LIMA: Steve?

MR. ELA: A number of years ago, it was listed as high methoxyl, low-methoxyl pectin, and it's interesting with the comments still reflecting that, even though the listing has changed to amidated and non-amidated forms.

I would encourage commenters to make sure they follow the new rules in referencing. And it's one of those products -- and full disclosure, we use pectin. We use an amidated form, because we want to use the reduced sugar recipe.

It's a little frustrating; we have to label our products, made with organic, instead of organic, because we're using the amidated form

because it uses less sugar.

So it's kind a trade-off with pectin, that they get very difficult. But I'm certainly in favor of relisting it, and I sympathize with the difficulty of trying to find an organic source. You're extracting a little bit of something out of a lot of something. You need a lot of peels to get a little pectin.

MS. DE LIMA: Tom?

CHAIRMAN CHAPMAN: Just to echo or repeat what you said; I remember you making that same comment in the spring as well. We received virtually the same comment, word for word. And it wasn't clear if they disagreed with the change to non-amidated, and were just saying we should go back to high methoxyl, or if there were the same comments sent from before.

MS. DE LIMA: All right, we'll move to a vote.

CHAIRMAN CHAPMAN: This is a motion to remove pectin from 205.606. The motion was made by Tom, seconded by Ashley. A yes vote is to

remove, a no vote is to retain, and the voting will start with Harriet.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

MS. DE LIMA: No.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: No.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: No.

DR. SEITZ: No.

MR. RICE: No.

MS. BAIRD: No.

CHAIRMAN CHAPMAN: Chair votes no. Zero yes, 15 votes no; the motion fails.

Real quick, back on the konjac flour; Dr. Brines, can you remind us of the sunset date of that material?

DR. BRINES: Yes, the current sunset

date is also March 15th, 2022.

CHAIRMAN CHAPMAN: So based on the sunset recommendation reorganization, this would remain until 2022?

DR. BRINES: That's the NOSB recommendation, yes.

CHAIRMAN CHAPMAN: Thank you.

MS. DE LIMA: All right. Next up we've got our one and only proposal, potassium acid tartrate. Steve?

MR. ELA: We just basically approved relisting this, but in the comments, the sunset has come up a number of times that the material is most likely mis-classified. It's currently classified as a non-agricultural synthetic, and the proposal is to move it to an agricultural product.

And so public comment was in favor of that; it's pretty straightforward, and I think, if you follow the decision tree put out by the program, it's pretty clear that it should be an agricultural, non-synthetic substance.

MS. DE LIMA: Harriet?

MS. BEHAR: So I'm hoping the winemakers out there are paying attention; if this does get moved to 606, we could have organic cream of tartar.

MR. ELA: And those were a couple of the public comments, saying exactly that. By putting it in this listing, the availability of an organic product would mean that it would have to be used. So it does help create a potential market for it, whereas its current listing would not.

MS. DE LIMA: I think we're ready for a vote. Tom?

CHAIRMAN CHAPMAN: This is a motion to re-classify potassium acid tartrate as agricultural and change its listing from 205.605(b) to 205.606.

The motion is by Steve, and is seconded by Ashley. A yes vote is to accept this proposal, a no vote is to reject it; and the voting will start with Francis.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

CHAIRMAN CHAPMAN: Chair votes yes. So 12 yes, zero no, zero abstain, zero recuse, three absent; the motion passes.

MS. DE LIMA: And next up we've got our discussion document on marine materials. Scott?

MR. RICE: Thank you. This was a document that we posted in the spring, and due to our shortened comment time line, we thought it would be helpful to post again to prompt further comment.

We did receive a lot of comment on this, both written and oral. We will be considering that as we move forward and look at how we can best approach this from a consistency perspective, as far as reference, using Latin binomials, and the issue of sustainable harvest.

We have not had an opportunity to work further on that document with these recent comments, so I don't have a great deal to report further at this time.

MS. DE LIMA: Is there any discussion? Harriet?

MS. BEHAR: We thought that by separating it out by Latin names, it would really give us what we were looking at, but it was very interesting that the public comments revealed that that was actually somewhat of a barrier. It's difficult to separate them out, and not everyone's using them consistently, so it turned into more of a morass, I think, than we thought.

I guess I'm just not following it enough, but this would include also on the Crops

Subcommittee too, the marine products, algae products; would we be looking at sustainability there as well.

So it's not just for in-food ingredients; it's also as a crop input, correct?

MR. RICE: Correct, and I think Emily has something to add.

MS. OAKLEY: Yes, I was actually going to speak to that, so I'm glad you brought that up. Yes, the crop subcommittee is continuing to look at aquatic plant extracts, and I'll be discussing this over lunch today.

We are looking primarily in terms of environmental impact at this point, because I don't think listing Latin binomials, as was stated in the original proposal is practical, given that it's all three classes. So what really be the point of that one?

But we'll try to assess what materials are being used, where and how they are being harvested, and then environmental impact. We'll try to determine what might be the most practical

approach for the short term and also the long term. I think we'll probably come out with a discussion document in the spring, in an ideal time frame; and if not, certainly by the fall.

But we'll discuss it as a discussion document first to solicit public feedback and try to include a wide variety of stakeholders.

MS. DE LIMA: Harriet?

MS. BEHAR: Well, I thought we were going to try to separate them out because maybe some of them can regenerate faster than others. There are so many different details, and I'm not a marine algae farmer, so I have very little experience. I do harvest watercress though, but that's not a -- well, it's not algae, it's a plant.

MR. RICE: Well, yes, it is difficult. I would like to think we could still do that in some capacity, and we'll certainly explore it. But again, I haven't seen the clearest path just yet, but I appreciate all the input that's come from public comment.

MS. DE LIMA: Emily?

MS. OAKLEY: I think that one of the possible clear forward paths forward may be to apply the wild crops standard to all of these inputs, which would probably also entail, to some extent, trying to elaborate on what that might mean.

I think that we have a unique situation where we have an input that's being harvested from a wild ecosystem. And so that's quite a bit different from some of the other inputs that are on our list, both handling and certainly in the crops section of it. It just sheds an important aspect of light onto this.

MS. DE LIMA: Scott?

MR. RICE: To add one other thought to this, maybe to encourage certification of these crops where possible, which would provide greater oversight and address some of the issues that we're talking about.

MS. DE LIMA: Okay, so we're going to be moving on to a verbal update from Tom on

tocopherols.

CHAIRMAN CHAPMAN: Tocopherols have been on our work agenda as a possible annotation change or classification change, or additional classifications since work in 2015. We had received comments during the sunset process that tocopherols may be commercially available in a non-synthetic form in addition to its synthetic form, and so we should encourage its use as a non-synthetic.

We tried to take that action and added it to the non-synthetic, and we received comments stating that non-synthetic may not be sufficiently available.

So then we attempted to keep it on the non-synthetic list, and we received comments that it might be available as agricultural. So we attempted to keep it on all three lists, and got into a debate around listing motions, and whether or not, if it's in a synthetic form, if it's commonly used as a non-synthetic or agricultural, if we were expecting certifiers to do that level

of review.

It seems that the general practice is, if it's listed as a synthetic, non-synthetic, and agricultural, forms are generally allowed by certification agents.

In the technical review of several materials, the reviews themselves state the most common production method, but may not outline 100 percent of all production methods when we do these reviews.

In looking at this in its totality, it didn't seem like it sounded like a sensible move to make this annotation change. So the handling committee came to the conclusion not to move forward with the tocopherol annotation change at this time.

If there is sufficient commercial availability of this material in another form, we encourage members of the public or industry to petition the NOSB to make this change, and we would take it up at that time.

MS. DE LIMA: Thanks, Tom. I don't

know if I'm supposed to ask if there are any questions from the board about that, but it doesn't look like it.

We have one last verbal update on ancillary substances used in cellulose.

CHAIRMAN CHAPMAN: Yes, this an update on ancillary substances in general, but specifically about this work agenda item in cellulose.

Back in 2015 -- Dr. Brines, please correct me if I'm butchering these dates -- back in 2015, we proposed a work process for the review of ancillary substances. I don't remember if it was 2015 or 2016 when we actually passed it, but it was one those two dates, and forwarded that on to the program for review.

That was a work agenda item that had come to us from the program. And since that time and around that time, even before we had actually proposed that, we were also in our reviews and technical reviews. And in our questions to the public asking for ancillary substances that are

used in substances that are on the national list, and have been accumulating these in our reviews.

We had been asked to go forward with an ancillary substance review for one material, which was microorganisms, as I recall, and we went forward with that one.

However, this proposal was still with the program and we haven't received word back yet from the program on which direction they want to go with. And as we went forward with the cellulose one, we ran into a couple of issues. Some just related to mistakes during the transition between members and others. So we thought it wasn't prudent to proceed at this time, and we have received a lot of questions from certification agents on how to proceed with guidance, just from the NOSB with the lack of the overall proposal from the program.

So in discussion with the program, we decided that it wasn't an efficient use of our time to do these reviews without the program command with guidance on how to handle ancillary

substances in a finalized and formal format.

So what we agreed to do, and what we are doing is continuing to accumulate ancillary substances, either via technical review, sunset process, or comments from the public. And at such a time when the program finalizes their review of ancillary substances, we will then begin work on whatever that proposal may be.

So at this time, we will not be continuing work on the ancillary substances use in cellulose.

MS. DE LIMA: Thanks, Tom. Any questions? All right, that wraps it up for handling, and we'll go back to Tom.

CHAIRMAN CHAPMAN: Okay. It's 12:40 right now; we will break for lunch, and we'll start back on time at 2:00 with the materials subcommittee. We are in recess.

(Whereupon, the above-entitled matter went off the record at 12:38 p.m. and resumed at 2:03 p.m.)

CHAIRMAN CHAPMAN: All right. We're

going to come to order. Okay. We're going to come back to order and continue on with our agenda. Up first -- or up next is Materials.

Harriet. Harriet Behar for Materials.

MS. BEHAR: Hello, Materials Subcommittee. So first I'm going to start with Emily, with research priorities.

MS. OAKLEY: All right. This is a reiteration of last year's document, with a few changes, some items removed, some items added, particularly in crops. And before I kind of dug into the public comment, I wanted to reflect on what some of the Organic Farming Research Foundation mentioned with respect to this document.

It wasn't on the board when this line item got added in 2012, but I think it might be nice for us to think about a way to make this document a little more user-friendly as the years go on and the priorities get added, and you know, maybe think about having a certain number of years that they stay on, and then they rotate

off, to make it a little bit more user-friendly for the end readers.

There is included this year an executive summary, which, in the past, the NOP has created. And that hasn't been included in previous proposal listings, but we wanted to put it out there so people in the stakeholder community could see what the USDA is taking to other organizations and broader research community, because they really want a one-page summary. And we know that the broader stakeholder community understands and appreciates our more lengthy language, but we have kind of two different groups who are the ultimate users of this.

Also, we've discussed in the Materials Subcommittee trying to find ways to get this more widely distributed. And Dave, putting you on the spot, but you were going to help with exploring ways of getting this within the broader academic community, so that people understand that these priorities are out there. And I'll let you

comment on that later if you want to -- or now, if you want to. So basically --

MR. MORTENSEN: Yeah. Emily, I need to -- still to do that. I've shared -- I have shared it, this document, with the USDA National Institute of Food and Agriculture, which is basically the main competitive grants program for all organic programs, as well as Sustainable Ag and that sort of thing. But beyond that, I have not reached out beyond that group.

MS. OAKLEY: Yes, Tom?

CHAIRMAN CHAPMAN: Would it -- would it make more sense for it to come from you or to come from -- I mean, Paul's kind of serving in this role for us. I mean, I thought that you were going to provide those contacts to Paul, and then Paul in his capacity was going to communicate it -- communicate it out to them. I don't know what's more effective. I mean, your -- this is your world, not mine.

MR. MORTENSEN: Yeah. I think -- I think I probably said that I would share it back

to, I think, you, Tom, or Paul. But I was also talking with the National Program Leader folks, because I was running a program there recently, and -- but I will definitely share it with you in the future.

DR. LEWIS: Just let me respond to that. What I'll -- what we'll be doing after this is voted on and indeed approved, I'll be sharing with NIFA, National Institute of Food and Agriculture, leadership. So that's what we do every year. We share this with them, and if they have any further questions or discussion, we can work with you, but that's one thing that I'll be doing after this. And I've actually noted this to them, that their leadership is aware of this.

And let me say, I applaud the effort in terms of what the Board has done making an executive summary. I find that helpful to kind of explain very succinctly and easily what's really the gist of what you're preparing. So thank you for doing that.

CHAIRMAN CHAPMAN: And we just -- we

want to get it out there as widely as possibly. So any way to get it out there, we're probably very thankful for.

MS. OAKLEY: There's another comment that's been brought up the last two years that's not a new research priority but that I think is really germane to this. From the Organic Center asking for or demanding, whichever word you prefer, organic representation on U.S. research boards.

So that's really a question for Paul. How might we begin that conversation to ask for representation on USDA research boards? Because I don't think it's a specific research priority, but it's something that's been noted repeatedly and I think would help accelerate these goals.

DR. LEWIS: Thank you. So I know we spoke about this before. Let me kind of bring that back to the Department and think about how we can play a role in that. So thank you.

MS. OAKLEY: So I'm going to just bring up a couple of the new research priorities

that had been mentioned, both in public comment here and written comment and on the webinar.

Those are ecology of marine algae used in organic products and production that can lead to appropriate limitations on their harvest and culture.

The organic, economic development opportunities that exist, which I think Handling definitely illustrated today in our conversation.

Soil health, biodiversity, and potential impacts. And I would also add to that, the degree to which biodiversity is being explored and augmented on farms in positive ways.

And research -- this is also a more broad one, but emphasizing that research be done with farmers, which I think is important.

I think that, to kind of circle back to what the Organic Farming Research Foundation mentioned on the webinar, you know, as this now becomes in its fifth or sixth year, we want to think about, you know, what priorities have truly gotten research traction and which ones need more

focus in the future.

So in terms of priorities that are listed that got some pretty broad support, alternatives for methionine, alternatives for copper, biodegradable biobased mulch film research, organic livestock breeding -- definitely a big one -- alternatives to antibiotics, celery powder, chlorine materials.

So I think, you know, rather than trying to go into too much degree of support for this, I think the general consensus is that the community appreciates this document. But I again just want to stress that we try to find maybe a more robust way of streamlining it in the future too, without taking out the heart and soul of it as well.

Any questions or a discussion?

Asa? I'm sorry. Yep.

MR. BRADMAN: Just one discussion item. I thought Mark Lipson's comments on the webinar were very interesting, and his suggestion that there be, perhaps, some sort of external or

peer review of the process. And it kind of echoes what you -- what you already said, but that seemed like, to me, like a good idea, to do that. And also, I think a similar review might be also conducted to the extension programs nationally, and you know, how a larger system can better serve organic.

I guess I'll take that one level higher too. In my world, for example, the Department of Pesticide Regulation in California asked the National Research Commission and the National Academy of Sciences to perform an external review of their own risk assessment procedures.

So you know, depending on what level this went to, we could even bring something to the National Academy of Sciences or the NRC and say we want a formal external review of resources going into research to support organic, what's effective, what's not. And maybe these recommendations are a piece of it, but it seems to me that could be a document both to understand

how to improve the system and also a basis for obtaining more resources to implement it.

MS. OAKLEY: Asa, I think you just volunteered for that.

(Laughter.)

MS. OAKLEY: Right? Seriously. Any other comments or discussions?

MS. BEHAR: This is another place for the open docket, again, to the greater community, if there are things that come to mind, you don't have to wait for us to have a discussion document to bring it to our attention.

MS. OAKLEY: Steve.

MR. ELA: Well, and I think Mark is great. And Organic Farmers Foundation -- I was on the board, and they do a lot of that bird-dogging of paying attention to how many, you know, dollars of research are going into organics. And I think, you know, they're a great liaison to both feed this into, but then also to pull data back out of.

I mean, just like Asa's talking about,

they do pay attention. Where are these dollars going? And we should probably get some of that data from them so that we know, you know, are some of these projects being funded through OREI, and you know, so I think maybe a little more linkage there, just on a data exchange, would be useful.

MS. OAKLEY: I think you just volunteered for that too.

(Laughter.)

MS. OAKLEY: Any other -- Yeah. Asa?

MR. BRADMAN: Just one follow-up comment. I mean, I think the estimation now that organic is about five percent of food sales in the U.S. So maybe five percent of the USDA research budget should be dedicated to supporting and you know, improving organic.

MS. BEHAR: There actually is a marker bill put in by Chellie Pingree. I'm not sure how many co-sponsors, but it's a bipartisan bill to increase organic research to $50 million. And there was a lot of discussion in the community of

the -- kind of the policy side of whether to tie it to. And we, of course, felt that we should be even higher than our sales. But I believe we're like 0.2 percent right now, of the research dollars -- agricultural research dollars go to organic. But if our argument is, what we learn in organic is useful to conventional farmers, but it's not always vice versa.

MR. BRADMAN: Absolutely.

MS. OAKLEY: Anybody else?

Tom.

CHAIRMAN CHAPMAN: I know we've had NIFA at our meetings in the past before. Is it also a good idea to invite them, perhaps, to a meeting, as well?

MS. OAKLEY: Paul.

DR. LEWIS: You know, I'll leave it up to the board's discretion. I know we had Sonny at a Board meeting, I think about, maybe two years ago. Right, so I can present this to him, and I think it'd be great to kind of hear what they're doing. And, actually, I think, and kind

of sharing some of the dialogue that's not really reflected in the executive summary here, in terms of what Asa mentioned about an AMS review, getting researchers involved in other areas. So yeah. I'm happy to kind of talk about that and Sam consult about it. So that'd be very helpful. I think it -- I think I found it very helpful for the Board to kind of hear what's happening in that arena.

MS. OAKLEY: Thank you.

MR. MORTENSEN: I think it could be. If we were going to do that, I would suggest that maybe we take a step down or two from the National Program -- the guy in charge of the whole thing, so that we get a bit more of an on-the-ground connection. So, that would be someone like the person at the -- the National Program leader for the Organic Research Initiative or something like that, rather than Ramaswamy, in my opinion.

DR. LEWIS: Right. So, what -- when I've been on panels where there is a National

Program lead, and describing like the grant process -- so really getting into that component. That might be helpful. They're broken down, as you know, by disciplines. So we can talk about who would be the best -- or people to have that type of conversation.

MR. ELA: Just -- and one last comment, I mean, you know, in the research community, again, you know, all those proposals go in. And they need peer reviewers. And I've served in that capacity. And I think it's very useful for the organic community to continue to serve on those panels. Because the only way you can say, does this -- does this proposal have relevance to our constituents, is to be able to feed back through that. And those peer reviews -- or relevancy reviews, I should say, are -- you know, they carry a lot of weight in that decision process. So it takes more time, and we all have infinite time and you know, love to volunteer for more things. But I think that's -- getting on those lists I think is really -- I don't want to

say a back-door way, but it's another way to support the system for organic research. You know, making sure proposals fit.

MS. OAKLEY: Other comments or discussion?

Are we ready to vote?

CHAIRMAN CHAPMAN: Okay. We have a motion to adopt the proposal on the 2017 NOSB research priorities. It was made by Emily and seconded by Dave. Voting will start with A-Dae.

A yes vote is to approve the proposal. A no vote is to reject it.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

CHAIRMAN CHAPMAN: Chair votes yes. Fifteen yes. Zero no. The proposal is adopted.

MS. BEHAR: The next item on the agenda is adding additional excluded methods to the Excluded Methods Guidance Document that we have requested the NOP put together. So, just to remind everyone, there was a lot of work done over the last couple of years on -- not redefining, but adding to our current definition of what an excluded method is, which, for if people don't know, it is -- relates to genetic modification. And the technologies around genetic modification have really changed and changed focus. A lot of it used to be taking a gene from a different species and plucking it into something different. But now there's a lot of internal gene manipulation, turning genes on and off, moving them here and there.

I, truthfully, am not a genetic scientist. So I can't even speak all of the language, but we knew that we needed to have something that would keep up with all those changes, so that we would hold that line to genetic manipulation by human methods, besides hybridization, to remain excluded in organic production.

So this proposal was to add cisgenesis, intragenesis, and agroinfiltration to the list of excluded methods. And we did get quite a few comments. The previous list had about ten items -- or no. One, two, three, four, five, six, seven, eight, nine items on it where we had evaluated them to a criteria -- four different criteria for deciding if an item is produced through an excluded method.

And so we did the same for these three items that are in this proposal. And we listed which criteria we used to make that determination. However, it was pretty universal public comment, that people wanted a clear

definition, especially around cisgenesis, to make sure that everyone knew what we were talking about when we were referring to these terms, especially around the -- anything that's a product of cell fusion.

And so we, I think, will talk about that here. I would like to have discussion amongst the Board to see if we feel that we need to be giving definitions to everything that we add. Do we need just for cisgenesis because there's confusion about whether or not it includes cell fusion? And if we decide to have definitions for everything that we want the National Organic Program to put in, do we need to go back and give definitions for the other seven items that we had approved to go in that document before?

So I guess I'll leave that open for discussion.

DR. SEITZ: So a process question, maybe to the NOP, can you adopt a document and then continue to work on it and put it out in

revised form? So for instance, if we thought this was basically correct, but we wanted to -- so we wanted to adopt it, but we thought that it would be helpful to include some definitions down the road, could we do that in that two-step way, or would it be better to send it back to committee?

DR. LEWIS: Right. I mean, I think that the challenge will be if you -- if you have a document that the Board feels requires further clarity -- that requires further clarity. So you know, maybe a challenge, let's kind of move forward if noting that you're continuing work in the area.

MS. BEHAR: Tom.

CHAIRMAN CHAPMAN: I am a creature of consistency, or at least I like to think of myself that way. So because we didn't have definitions for the first set, I'm fine with moving this forward. If we do feel like we need definitions, I think we should go back and do them for all of them. And while I understand the

-- what was the exchange that happened just here, but this is somewhat a document that's in process, because it has several TBD materials that we're going to continue to work against. And so you know, it's not -- it's not as final as, say, some other proposals we put forward, because there's still -- there's clearly additional work that we plan to do.

MS. BEHAR: Emily.

MS. OAKLEY: If we were to include definitions, what definitions would we use? Where would we source them?

DR. LEWIS: So I can try to help with that. If you want to have a conversation with some experts in that area, I can reach out to colleagues at USDA, especially such as National Institute of Food and Agriculture and others, that would be people that either do research in this area or have that type of technical skills that -- to help you understand in terms of what the scope of the definitions that they are in the biotechnology arena.

MR. MORTENSEN: And I'm of the opinion that I think the definitions would be really helpful. So -- and I think, it would seem to me that we could take a crack at them with the capacity of our group, consulting with geneticists that could help inform, and then maybe meeting with some -- one or two folks to like, really go over it and see if they're defensible and really accurate and consistently rigorous across the definitions, which, right now they're kind of a little uneven, I would say, the ones that are in here. Yeah.

MS. OAKLEY: I'm sorry. Could I ask him a follow-up to that? So do you think that there's any chance that if we came up with a definition, it might not keep up with the times? Because I guess that's my concern about it.

MR. MORTENSEN: Is this okay that we have a dialogue? Yeah. Yeah. Definitely. That would be a concern, Emily. The field is exploding. The number of new methods that are coming. And I think we're only, like, on the

front edge of it. So I think Tom's exactly right. This is a -- I think we need to see this as a living document that we're constantly revisiting to update it to be sure that the latest things that people are doing are -- you know, whether we pass on those or not. Yeah.

MS. BEHAR: Sue. Then Tom.

MS. BAIRD: Yeah. I -- my feeling is that definitions definitely would help. I appreciate the Program's telling us that they can bring in some experts. And of course, Dave and his group are experts, but most of us are not. And it would -- and I'm thinking certifiers and things. So if they had a definition, something that they could at least hang their hat on, it would help. As to Tom's comment that we might have to go back -- because I agree, Tom, we need to be consistent, I think that it would be advantageous for us to go back and put definitions on all of them. I'm thinking as a certifier, as an uneducated person.

MS. BEHAR: Tom.

CHAIRMAN CHAPMAN: Yeah. I mean, to respond to some of the points about needing flexibility -- I mean, it's -- you brought up some points I was going to bring up, Sue, that, I mean, we -- this is put out to the public, to certifiers to make, you know, the certification decisions. When adopted by the Program, we put out the certifiers to make certification decisions. So like, it needs to be clear to them what methods we're using. And definitions would probably help.

So with the avenue of pursuing guidance as opposed to rulemaking was where, I think, we looked for the flexibility of being able to quickly address new materials, since it didn't have to go through the rigorous -- as rigorous and laborious of a review process as rulemaking does.

And so you know, I don't think the intent was to not define these to make them wide and unclear. I think it was not -- I just don't think we -- it wasn't a critique that I remember

receiving when we passed this originally. But the flexibility came from the format that we were looking at for -- in the sense of guidance.

MS. BEHAR: Other comments?

Asa.

MR. BRADMAN: Just, in general, I think definitions are a good idea, just so there's clarity and you know, sometimes in our group we'll spend hours arguing over a single word -- and just to make sure there's a common understanding. But at the same time, I don't think this is something that has to be a huge effort, that we can get consultation, we can get, you know, properly defined terms, in terms of these methods, and then that can go into the guidance document. It doesn't have to be, you know, an extensive, you know, review and evaluation of what each method is.

MS. BEHAR: Scott. Then Dan.

MR. RICE: Yeah. Some of the comments I was going to make have already been made, but just to reiterate that, you know, there is --

it's much easier to make a decision when you have that clarity, but also recognize that as the technology evolves, those can become outdated. So I really like the idea of keeping this as that kind of working document idea. I think that would be very helpful and again, to be consistent, having for -- defining some, defining all.

DR. SEITZ: Yeah. I echo both of those comments -- the last two comments and would hope that this, we could put this out in six months, knowing that it might not be perfect, but that it's important to have a statement out there about genetic modification.

MS. BEHAR: Dave.

MR. MORTENSEN: Scott's point is a very good one, I think. And that is that -- what I'm hearing Scott say, that a definition alone may not provide enough information -- maybe I'm reading into it, but may not provide enough information to base the certification decision. So when we think about writing these up, maybe we

just be sure that we're communicating well enough that whatever else is needed would be provided in the updated document. For example, some obscure definition of a genetic manipulation technique may not be very helpful in making a certification decision. Maybe the thing that needs to be known is that there was a molecular intervention of some kind that, you know -- that, basically, these nine things fall out immediately. The definitions don't even matter that much.

MS. BEHAR: Well, I'm wondering if we just made a non-substantive change by saying cisgenesis, not to include cell fusion, which was never our intention, that we could then be able to pass this document now and then work on a further guidance document that would include definitions.

MS. OAKLEY: Actually, Harriet, you just said, like, exactly what I was going to say. So that's a good question.

MS. BEHAR: We are all looking at Dr. Lisa Brines.

DR. BRINES: So to clarify, the question is whether making a notation in the proposal that was put forward for public comment, that it was the intent of the Subcommittee to exclude the topic of cell fusion, would be a substantive change or not. Probably a matter of opinion. And the concern with delaying this for another six months till the next meeting.

MS. BEHAR: I suppose it wouldn't hurt to just put it off, but I know that that was not our intention, to have cisgenesis include cell fusion.

MS. OAKLEY: I don't know. I'm just a big fan of progress. And I also know that what happens when things come back is they require more work than we think they will, and it just delays us in other things. But I also want us to get it right. But -- so putting both those out there.

CHAIRMAN CHAPMAN: Let's give them a moment to consult, to huddle. We need some hold music.

MR. RICE: Francis, do you have your trumpet?

CHAIRMAN CHAPMAN: I think Dan offered to sing us a song.

MS. BEHAR: And that was most of the public comment, was asking for that clarification on cisgenesis. There really wasn't public comment on, we need a better definition for intragenesis or agroinfiltration.

CHAIRMAN CHAPMAN: Does -- before we get an answer on this, too -- we still have cell fusion listed as a TBD. Correct? And that's the same cell fusion we're talking about?

MS. BEHAR: Yeah.

CHAIRMAN CHAPMAN: So I mean, that --

MS. BEHAR: So -- but many felt that it fit under the cisgenesis.

CHAIRMAN CHAPMAN: Yeah. I get that. I just -- I want to make sure the Program's aware of that, before they're about to answer a question that, you know, as part of this document, we have it published that cell fusion

is separate and as a TBD.

DR. BRINES: Yes. That's true. And there's also a document in the Program handbook that addresses cell fusion and establishes current NOP policy on that issue. I think Paul wanted to say a few words in terms of timing.

DR. LEWIS: Right. It may be beneficial to have this topic discussed again at the next meeting so we can bring together other experts from the USDA community who are working in the biotechnology arena to help explain some of these technologies to you as a group. So I wanted to bring that up. Especially, I know that some parts of the department have interest in what you're doing here. So I just wanted to raise that to your attention.

MS. BEHAR: So what you're saying is, they -- will we have a panel? Or what are you looking -- looking at to help us understand?

DR. LEWIS: At a subcommittee level, if we have a subcommittee meeting, as an example, we can bring on an expert or two, in terms of

helping to explain what some of these topics are from a definition standpoint.

MS. BEHAR: Well, I think we have a pretty good understanding of what we were excluding, because we used the criteria. But we didn't specifically define it as a method. We said, it fit this criteria. And I know that we did actually receive, through public comment, quite a few good definitions.

But a lot of it was because there was internal nucleus manipulation in most of these. And that's what threw it into the criteria that made it an excluded method. The exact method of that nucleus manipulation is not being defined, but it is a human manipulation at a genetic level of the nucleus of those cells.

So I feel like we don't need so much of an education of what they are. We -- because obviously we wouldn't have decided if they met the criteria if we didn't have a pretty good understanding of what it was. But the public was saying that they felt that definitions would be

useful to them, rather than meeting criteria.

And Tom, I think, spoke to, rather than defining something and then saying it is not allowed, we set it up instead as -- as new methods met the criteria -- that's when they would be excluded. So that actually helps a lot with -- as they maybe change a little bit or whatever. But they still have that basic criteria that they meet that puts them into the excluded method list.

Am I making sense? Okay.

DR. SEITZ: You know, if this change that you mentioned, which was intended, it doesn't amount to a substantive change -- and I don't know if a decision was made on that -- it does seem to me that it would be preferable to go ahead with this and then have this with the understanding it's a working document.

But I don't know if it was a -- I mean, you said that it's a toss-up whether it's a substantive change or not. I mean, if you want to leave it to us, that's --

(Laughter.)

DR. SEITZ: -- that's fine.

DR. BRINES: Yeah. Some issues are not so black and white. They're more along a spectrum. I guess that my -- I don't know whether it would be a substantive change or not at this time.

I'm not clear on what the harm would be in delaying a decision on this topic, given that the Board has several items that could be added going forward. There's still a lot of TBD decided. It seems like the Board -- rather, the Subcommittee was clear on what their intent was with the proposal. So from that perspective, it would not be a substantive change.

But given that there might have been some confusion from other stakeholders about what is intended because of the lack of definition, I'm not sure what the harm is for exploring that at a future meeting. So -- that's just what to think about.

I don't -- timing-wise, I don't think

a delay of six months is going to impede progress by the Program in taking action on this, given that there's still more work to do before we would be able to implement any recommendations.

MS. BEHAR: Emily.

MS. OAKLEY: Well, I was just going to echo what Dan said.

MS. BEHAR: Other comments?

Well, my comment would be in response to Dr. Lisa, that I know that the organic community wants to see us moving forward on these items, and we try to take little bites for each meeting. And so I think we would like to move ahead and vote.

Joelle.

MS. MOSSO: Just something to ponder is that the USDA, with their team of experts, is offering to help with the definitions of a technical field that we may at a further point regret not having accepted.

MS. BEHAR: I think that we could go ahead and vote on this and then have on our work

agenda, providing definitions at the next meeting, as well as possibly taking yet another little bite on some of the other to-be-determined, perhaps even the cell fusion, just to address the public concern over clarity in that specific area. Because it was just that one that we received most of the comments on. It wasn't the other two items. It wasn't the other seven. It was specifically on that one.

Joelle.

MS. MOSSO: I will also say that a lot of these genetic techniques are very new, and there's probably not a lot of people in a community that's non-GMO that follow it. So I think we should just keep that in mind as well. Like, I constantly keep seeing new techniques that are in the news. And I mean, I took a lot of genetics. I never learned anything about them. So I just think we should keep that in mind too, because it is rapidly evolving, and our population base would be biased in that they don't pay attention to that necessarily.

MS. BEHAR: And I think the intention of this document is that the to-be-determined list will be, perhaps never-ending, but it will at least always be growing, as we become aware of new methods that we might want to consider.

Paul.

DR. LEWIS: I like the conversation about the flexibility, because I mean, I think what we're all seeing in this emerging technology, there's advances occurring daily that we're not aware of. And to have that flexibility in technologies coming about -- and even as you develop your definition, think about not having something that's so set, where you know that certain methodologies will be changing over time -- I think that will be a helpful exercise, I think, for all of us.

MS. BEHAR: Another thing that I can see, perhaps, would be when we are developing definitions, that we make sure we are including the criteria that we've used. And so that would then meld better with the current document that

we have, because there are definitions out there, but they may not be using the same criteria that we are having here. So that way, that would bring the consistency -- I see Tom shaking his head. So that's -- I always like to see him in assent.

Steve.

MR. ELA: I'm struggling with this, because I would like to see it passed. And yet given our track record of trying to develop definitions that are not -- I mean, these should be pretty straightforward, but it is an evolving technology that -- and I'm not sure it is a slam-dunk. And so I'm personally hesitant to pass something that we say we're going to define later, knowing that sometimes making definitions is not always as easy as it might seem. So it -- I guess I'm torn, but I'm kind of leaning towards, I'd rather see it all in one document at the same time.

MS. BEHAR: Joelle.

MS. MOSSO: Just to, kind of, echo

what Steve is saying, is that the public also hasn't seen those definitions. So they haven't had comment. They've had comment on these terms, but not necessarily the actual definition.

MS. BEHAR: Yeah. Next -- at the next meeting, we would have it as a public docket to have those definitions in place. But we -- I mean, I feel like we do -- we have the criteria. We have reviewed it to the criteria, similar to what we did for the other seven. So I don't -- I think that it's -- and it's also very clear that cell fusion has been pulled out. So even though the public was confused, we have said that we haven't decided on cell fusion and not considered it part of cisgenesis.

MS. MOSSO: I think -- I mean, I think I'm just -- going from a process perspective, though, I find it rather odd. I mean, I have no opposition to any of -- getting rid of these things. It's just more from a process perspective, is that the public hasn't seen the definition. So they haven't commented on it.

Not that that would necessarily change the outcome. I wouldn't expect it to. I just think from a process perspective.

MS. BEHAR: Other comments?

Emily.

MS. OAKLEY: I would just say that it's better that we're unanimous on this vote. So if there's anyone who couldn't vote on it today, even though I think we -- I would like to vote on it, if there are others that couldn't, it'd be better to send it back -- which is not what I want to do, but I'm just saying.

MR. MORTENSEN: I'll just kind of throw my two cents in. I actually like the idea of having a document that is a living document, and it's quite clear here that the following methods are under review. In some ways, to me, that's inviting input from our community. We haven't -- we haven't finished that body of work yet, and I think it's inviting folks to contribute. It's also inviting folks, in my view, to say gosh, why didn't you include these

other three methods that are not in your -- in your table on methods -- will continue to be researched. So I'm of the opinion that it's sort of inviting comment and engagement with our community. And that's a good thing. So I'm ready to vote. So I guess it's a fundamental difference of view on how finished it should be.

MS. BEHAR: Steve.

MR. ELA: Sorry. As a matter of order, would it be appropriate to make a motion to send it back to committee, vote on that? If that vote fails, then I'm comfortable with going ahead and voting on the proposal, and you know, and I would probably vote for it at that point. My preference would be to send it back, but I'm not going to vote no.

CHAIRMAN CHAPMAN: Yeah. That's a method we could use. If you -- if we do not want to vote on this item at this meeting, we will need to send it back to the Subcommittee. Otherwise, you know, it's a seconded motion from the Subcommittee. So we will proceed to a vote

when we're done discussing it.

MR. ELA: I mean, I would be willing to make that motion and vote on it. If the vote fails, I'm willing to vote, you know, for it. But I sense some ambiguity in the Board of whether we want to vote on it today or not. So I would make a motion to send it back to committee.

CHAIRMAN CHAPMAN: I have a motion. Is there a second?

MS. MOSSO: Seconded.

CHAIRMAN CHAPMAN: So I have a motion to refer this proposal back to the Materials Subcommittee. It was made by Steve and seconded by Joelle. Any further discussion?

You're still running it, Harriet.

MS. BEHAR: I would like some clarity from the Program on what is an open document. So we have given this to you as guidance, and -- but yet there's many to-be-determined items. And we see that there could be a continuous flow of to-be-determined items on here. Are you waiting for everything to be decided before you would start

looking at writing guidance? Or -- because that would help me understand better -- if you're going to wait two years, then it wouldn't matter if we voted right now or not, because it's not going to happen. But I would hope that at some point, we'll -- they'll -- the Program would say okay, we're here. The things that have been voted, we can move forward with, and maybe even the guidance, we'll say these things are still under review by the NOSB for further guidance in the future. But I don't know what your process is.

DR. LEWIS: So from a Program standpoint, we haven't made any decisions about how best we want to proceed. But I think this topic is unique in certain ways, in that it's a technology that's evolving. So I think what we all can see is over time there will be new technologies, new items to be added. So at least to kind of go back to my initial point, is that, we haven't made any decisions yet how best we want to proceed at this time.

MS. BEHAR: Dan.

DR. SEITZ: I just want to say, I agree with Steve that if this is not sent back to committee, I would want to vote in favor of it, because I think it's a very carefully researched document and one that's going to be very useful for us.

MS. BEHAR: And I guess, I'd just like to say too that the public supported all of them to be listed as excluded methods, with the clarification that cell fusion was not included in cisgenesis. That was the main public issue. It was -- there was no one saying any of these three items should not be -- actually, it was great support to add them to the list.

Joelle.

MS. MOSSO: Yeah. I think my opposition is simply from a process as well as lacking clear definitions for the public prior to voting. But I did want to make a comment to the Program on the sense that this is a rapidly evolving, you know, field. And there's concern,

at least on my part, is that very quickly something could be included into the Program accidentally, because it moves faster in evolution than we do. And I'm just wondering if there's any sort of way to fast-track or create a system that can respond as quickly as the environment changes in that respect.

DR. LEWIS: Yeah. That's a good point for us to kind of think about how we can be fluid in this case -- is how can we be aware of these changes that are occurring? So we have -- we have conversations with experts in our organization department, and obviously with you as a board, in terms of raising these issues to us. I think that's a very valid point. That's, I think the theme I've been hearing for the past hour in terms of -- this is an area of science that's evolving very quickly. And we, as a Program, need to be aware of making those adjustments as needed.

MS. BEHAR: Ashley.

MS. SWAFFAR: Yes. So I would like to

see this go back. Not that I do not support this whatsoever, but I just come from the same place Joelle's coming from -- is from a process standpoint, is we really do need some definitions on this. And you know, I think it's wonderful that the Program has offered expertise within USDA to help us get those definitions right, because this is a very confusing world if you don't live in it. And you know, we need to get it right. Because everyone in this room wants to exclude the majority of all of these methods. So we need to make sure we get the definitions right.

MS. BEHAR: Other? Oh. Lisa.

MS. DE LIMA: So based on what Ashley just said, that is, is it a -- are people thinking that we go back and do definitions on the original ones that we passed, to Tom's point about being consistent?

What is the will of the board?

MS. BEHAR: Tom.

CHAIRMAN CHAPMAN: Yeah. I would say

we do all if we're doing them.

MS. BEHAR: I think though, too, that when we build the definition, we have to be prepared that they also will be living definitions as well. And that was the main point of looking at them through the criteria, is so there wouldn't be this constant changing and modification of a definition, but more of the overall method that is being used. Because -- I mean, I don't understand, you know, all the sub-particle, cell, you know, aspects, but the criteria are very clear and easy for me to understand somewhat where they come from.

And so I have Lisa and then Emily.

MS. DE LIMA: All right. So folks know where I'm on -- I'm standing on this, I'd rather not send it back, and I'd rather vote on it without the definitions. That's where I'm at right now.

MS. OAKLEY: I agree with that, and I also think that this is evidence of what happens when you lose historical knowledge. And Zea was

the one who worked on this. And I wish we could ask her why there weren't definitions, because I'm sure she addressed that at some point. Maybe Tom remembers. I'll just say quickly though that, ironically, I have a hesitation to include definitions, because I am concerned it could box us into something that we wouldn't necessarily want. But I'm not an expert.

MS. BEHAR: Tom.

CHAIRMAN CHAPMAN: Yeah. So I -- this whole time, and I think even while we were talking in Subcommittee assumed there weren't definitions in the previous proposal. And I pulled it up, and unfortunately, actually, I think we are incorrect in our statements. I always stop when I get to the part that says motion by, seconded, yes, no, yada yada yada, but looking back at the -- it's not the one on the screen. Looking back at the one we passed in 2016, after that page, there's an Appendix A that's a brief description and additional citations for terms used in excluded methods,

terminology chart, of which, to call these definitions might be a stretch of the word definition, but they are a description of those terms. So I wasn't aware of this. So I was going on the basis of consistency. And now that I am aware of this, I guess I'm going to agree that we should send it back.

MS. BEHAR: Well, in this --

CHAIRMAN CHAPMAN: So this is in the 2016. So for folks that don't fully remember or weren't here for the full history of this, we passed a proposal in 2016 to further define and go into detail around what excluded methods meant. And we passed principles and definitions of technique -- no. Not techniques. Definitions of certain terms that appear in the excluded methods, that we recommended for guidance. And then, in addition to that, had a chart. And then, in the chart, we applied the criteria to make a determination of whether it met those definitions under excluded methods. That's the kind of process we used to make these

determinations. So at the end of that document -- not the one we have before us, but the one from 2016, there's an Appendix A with some level of description of that chart.

MS. BEHAR: Is that the one you were talking about that has genetic engineering, genetically modified organisms? That one?

CHAIRMAN CHAPMAN: No. Here. I'll just show it to you.

Yeah. Michelle can go to it. If you have internet, it's part of our recommendations from Fall 2016. You have it? Okay. Scroll down. Is that this one? That's the -- no. Keep scrolling down. Scroll down. This is the 2016 one? Yeah. Scroll down. Down, down, down, down. No. That's 2017. That's not the 2016 one.

MS. BEHAR: So the original seven have descriptions of what they are, not necessarily listed as a definition. So I guess, to be consistent, we could make further descriptions. We could bring out a document that called them

all definitions.

CHAIRMAN CHAPMAN: Yeah. I mean, whether we want to further work on these, or we determine that the descriptions here were sufficient and we provide similar descriptions for the three additional techniques. But I think we should be consistent. And so I was with you guys until I saw this. I'm sorry. I do think we should send it back.

MS. BEHAR: Sue.

MS. BAIRD: Would the Program want to look at our descriptions of the seven and review them with your experts, along with helping with the descriptions of these?

DR. LEWIS: We can review them, but I think what we're getting to as a group is clarity of how we're defining these technologies. So let me talk to folks in the Department who are experts in this area, this technology and kind of think about how we can best move forward in this.

Let me also add is that not only the three now and the ones previously, but the TBDs,

we can also use that opportunity to kind of move forward and to address the ones that -- in thinking about moving forward. So we can have this conversation retrospectively and also prospectively, if you will.

MS. BEHAR: Would it be acceptable, when we do further descriptions and definitions, to have a disclaimer at the top of that, that says these may be modified as the technologies -- I wouldn't want to put something in the docket that was so -- that was too cast in stone, because things are so rapidly changing. So I just want to make sure that that kind of -- I think that could have been one of the reasons why they were descriptions instead of definitions, because we didn't want to be so prescriptive and leave ourselves open to more rapidly respond as things changed.

DR. LEWIS: And I would not be surprised when we -- when you begin that conversation with those experts, that's probably going to be the initial point of consensus is

that, having a definition at -- where there's agreement at a subcommittee level, as an example, knowing that the flexibility is required. Of course, the science is evolving as we speak.

MS. BEHAR: Emily.

MS. OAKLEY: I forgot.

MS. BEHAR: Well. Dave.

MR. MORTENSEN: I do feel -- I will just say -- and I totally respect the differences of opinion around the table. I feel a certain sense of urgency on things like this.

And let me just very briefly tell you why. I have some colleagues who last week were told they couldn't travel to present at a climate change conference because of a federal decree on federal scientists not speaking about climate change last week. I have a concern that we start having creep -- administration creep -- and I don't mean NOP here. But administration creep that starts to somehow try to shape our agenda.

So that's part, in the back of my mind of why I'd like to vote on this right now. But I

totally get the reason why we need complete definitions -- or would like complete definitions as well. So I see both sides.

MS. BEHAR: Emily.

MS. OAKLEY: I remembered. I don't want to put you on the spot, A-Dae, but I know this is an issue that's near and dear to your heart. So, I was just wondering if you had an opinion, and if you would share it if you did. But if you don't want to, that's fine.

MS. BRIONES: Yeah. Talking over with some of my colleagues here. I would love to vote on this. I -- I'm thinking about how you enforce this without definitions, given that we have other definitions for the previous seven, it does make me want to have definitions, just for enforcement and some guidance for the community. Because if we're wishy-washy, kind of, on this Board, I can only imagine how that translates when it comes to actually enforcing this document.

MS. BEHAR: Other comments? I know

the clock is ticking.

Dan.

DR. SEITZ: Yes. I mean, I think there's some temperamental differences too. I feel comfortable living with a certain amount of incompleteness, and I feel that the urgency outweighs that. And that because it's evolving, we might in six months be back here saying, it's still not quite clear. We still need some people to weigh in. And then, even experts disagree on things. And, so, I don't know that there's this other group that will have the definitive answers for us. So, I -- I certainly, as if this is a living document, would appreciate other people's perspectives on it, but I don't know that we would -- we should assume that because there's a group there that has some expertise, they necessarily would have a final word on this either. So, I would feel comfortable moving ahead. But, then again, I don't mind a little chaos. Okay. So -- anyway.

MS. BEHAR: Other comments?

Francis, you haven't said anything.

DR. THICKE: Let's just do it.

(Laughter.)

MS. BEHAR: Joelle.

MS. MOSSO: Just trying to get creative here. Is there any other way that we can address definitions, or a system that would be more fluid to address these rapidly evolving technologies? Because they literally happen overnight. Like, even if we passed this today, they're irrelevant in some ways because there's another method. I'm concerned -- I'm very much concerned about what we've heard about not making a -- you know, a decision, as well as not making a decision and then being in a position where it is like, well, it was in flux, two years later when we regret that we didn't. So, I --

MS. BEHAR: Yes. And it could be, like, within the methods that are being used, there's just a little tweak that we didn't anticipate and didn't have it in our definition.

MS. MOSSO: I'm just wondering if

there's some sort of process where we can have some portion of a document be more living.

MS. BEHAR: I believe Paul did say that that was possible.

DR. LEWIS: The document that you presented here is a living document, because you have three topics that you're voting on and knowing that there are other technologies that you identified TBD. So, I think you've already presented this as a living document.

MS. BEHAR: Sue.

MS. BAIRD: Just a question, and maybe this has been covered, but we've covered so many. We've gone back and forth. I'm confused. Can we pass this because we do have these TBDs, to-be-determined things? Can we pass it, and then, because it is a living document, we can go back and add definitions to what we've already passed?

MS. BEHAR: That is my understanding. The question, I think is, is it consistent --

MS. BAIRD: Right.

MS. BEHAR: -- to put something as an

excluded method without either a description or a definition?

MS. BAIRD: But, if it's to be determined, then --

MS. BEHAR: No. We have three things that we're trying to --

MS. BAIRD: Yes. I know you've got three now. But we've already said it's going to be a living document, to be added to.

DR. SEITZ: Maybe we just be TBD in the definition boxes.

MS. BEHAR: That's an option. So, I'm just wondering if we're ready to -- Jess, do you have anything to say. You're looking at me like you want to say something.

MR. BUIE: Yes. No. Because, it's a scientific document, you know, the definitions need to be there. But, I -- you know, since it's a living document, I think it's something we can go forward with and, you know, work within those bounds.

MS. BEHAR: Does anybody want to call

the question? Emily.

MS. OAKLEY: Just one, quickly. I think it's a living document much like the research priorities document is a living document.

MS. BEHAR: Anybody else?

CHAIRMAN CHAPMAN: Okay. So, we have a motion to refer this back to the subcommittee. The motion was made by Steve and was seconded by Joelle. Since this is not a vote to conduct business, as a procedural vote, it follows Robert's Rules of Order, which, for this, would be a simple majority. So, a yes vote on this motion would refer it back to subcommittee. A no vote would continue discussion of this document. The voting will start with Lisa.

MS. DE LIMA: Yes.

MR. BRADMAN: No.

MS. MOSSO: No.

MR. ELA: Ironically, no.

MR. MORTENSEN: That means we're going with it?

PARTICIPANT: Yes.

MR. MORTENSEN: No.

MR. BUIE: No.

MS. SWAFFAR: Yes.

DR. SEITZ: No.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: No.

MS. OAKLEY: No.

DR. THICKE: No.

MS. BRIONES: No.

CHAIRMAN CHAPMAN: Chair votes yes.

Five yes. Ten no. The motion fails. Discussion continues, or we can move to the vote. That's fine.

MS. BEHAR: Are we ready to vote, then?

Okay.

CHAIRMAN CHAPMAN: Can you go back to the other one? That was the Appendix A, by the way.

All right. So, we have a motion from

the subcommittee to accept the two sections of the proposal as stated above, and that is the -- that is the chart and the TBD. Is that correct? So, that's the revising the chart to add the yeses and to retaining the TBDs that we have in there already. Can you scroll back down?

The motion was made by Harriet and seconded by Dan. So, this is a motion to approve this proposal. So, a yes vote is to approve. A no vote is to reject it.

And the voting will start with Lisa.

MR. ELA: Can I have a question of order?

CHAIRMAN CHAPMAN: Yes.

MR. ELA: Are we making the change? So, the motion is with the change to --

CHAIRMAN CHAPMAN: No. That would have to come as a separate amendment.

MR. ELA: Okay. I just wanted to put it --

MS. BEHAR: And the reason for that is that cell fusion is listed as still to be

determined, in the chart.

CHAIRMAN CHAPMAN: Are we still clear on what we're voting on? I'm seeing general head nodding. So, the voting will start with Asa.

MR. BRADMAN: Yes.

MS. MOSSO: Yes.

MR. ELA: Yes.

MR. MORTENSEN: Yes.

MR. BUIE: Yes.

MS. SWAFFAR: Yes.

DR. SEITZ: Yes.

MR. RICE: Yes.

MS. BAIRD: Yes.

MS. BEHAR: Yes.

MS. OAKLEY: Yes.

DR. THICKE: Yes.

MS. BRIONES: Yes.

MS. DE LIMA: Yes.

CHAIRMAN CHAPMAN: Chair votes yes. Fifteen yes. Zero no. The motion passes.

MS. BEHAR: So, I will just say that

our subcommittee will continue to work on this document.

MS. BEHAR: So, the material subcommittee has one more item, a discussion document on seed purity. And Dan, maybe you would like to talk about how we've changed the name.

DR. SEITZ: Sure. Well, first of all, I just want to let everyone know, we're not trying to set a record with the number of discussion documents on this issue.

(Laughter.)

DR. SEITZ: The reason this is a discussion --

PARTICIPANT: The record?

DR. SEITZ: Oh, I don't know what the record is. But the reason this is a discussion document is we decided we really need to develop a proposal, but we weren't ready to develop a proposal. But we wanted to keep this on people's minds. So, we put this out as a discussion document referencing previous discussion

documents, and just inviting the general public if -- and stakeholders, if they have any further comments on this topic, they're welcome to submit those in the -- using the open docket. We had been calling this seed purity. And then, in the interest of causing confusion, I changed the name to seed integrity. But maybe we'll stick with seed purity, just because --

MS. BEHAR: No. Genetic integrity.

DR. SEITZ: Oh. Right. Well, okay. I think we'll have to, you know --

MS. BEHAR: So, do we --

DR. SEITZ: -- finalize our terminology on this. But, in any event, whatever we call it, there were just a couple comments. Both referenced the request of the NOSB to the NOP that a task force be formed to look at this issue, because it is a very complex issue. And I don't know if there's been any movement on that, consideration of that. Perhaps, Paul, you might let us know.

DR. LEWIS: Sure. So, one thing we've

been saying since the beginning of the meeting, we have new leadership that's -- that arrived. A new acting deputy administrator. So, as Ruihong Guo comes on board, you'd want to share this with her. So, I'm looking forward to briefing her next week, in terms of what were discussed today, including this document.

DR. SEITZ: Great. Thanks.

PARTICIPANT: And the only other.

DR. SEITZ: The only other piece is that people recognize that this is a very complex issue, one that would benefit by gathering data. It's not something that will be easily solved in a short period. But it is the subcommittee's intent to at least try to bring a proposal to the spring meeting.

MS. BEHAR: I have a comment. One of the reasons why we were looking at changing the name of seed purity is that a lot of times that has to do with whether there's foreign matter, weed seed, or whatever in the seed. And that really is not what we're trying to get at here.

We're trying to get at the genetic integrity of the seed, and specifically that it is free of genetic modification -- genetic contamination.

DR. SEITZ: Thank you Harriett. Any other comments?

MS. BEHAR: Okay. Guess what? We don't have to vote on that one. Go forth and prosper, Dan.

CHAIRMAN CHAPMAN: Thank you, Harriet. That concludes the material subcommittee portion of the agenda. And we'll move on down the agenda.

Up next would be deferred proposals and final votes. So, we went from just on time to ahead of time. Jumping ahead, we're now on subcommittee work agendas. And we'll be pulling it up. Once it's up, we'll run through the subcommittee agendas in order, asking the subcommittee chairs to briefly discuss their upcoming work.

So, up first is CACS. Scott.

MR. RICE: Thanks, Tom. As I

mentioned earlier and in our discussion, we had a request from the Program to add the issue of imports to our work agenda. And that's something that we'll be heading into the winter to work on. We are coming back to our document on -- well, we re-scoped our look dealing with inspectors, to focus in on inspector qualifications. So, we'll be taking a look at that as well. And that is it at this time.

Oh. Excuse me. Thank you, Harriet. And we did refer native ecosystems back to the subcommittee. So, there is that as well.

Thank you.

CHAIRMAN CHAPMAN: Yes. I will -- we'll add that in here.

Any questions for Scott?

Emily.

MS. OAKLEY: I know that there are some on our committee who are interested in looking at the possibility of adding fracking to our work agenda. And, so, I wanted to ask a question to Paul, specifically, what that might

take.

DR. LEWIS: Sure. Thank you. So, in terms of the developing work agenda, I don't -- like other work agenda items, you know, develop a proposal, have a conversation about that, socialize that with leadership, and then see how best they want to proceed on that. So, that is something that I know that has been brought up in previous conversations. I know, Scott, you and I spoke about this. So, you know, kind of, look in terms of how you want to scope this, and then, for us to socialize it internally.

MR. RICE: One more comment on that. We were looking at not just that fracking issue, but -- just for clarity, looking at water and just inputs -- or not inputs per se, but just beyond water, produced water, et cetera --

MS. BEHAR: Oil and gas infrastructure.

MR. RICE: Oil and gas infrastructure. And just from that couple of sentences, you can see that's a tough one to scope. But I wanted to

encourage on all these fronts, and as we move through these agendas, that we do have open docket and appreciate the input.

CHAIRMAN CHAPMAN: Steve.

MR. ELA: And I'd just like to echo for the Program. I mean, Ohio has presented on this public comment a number of times. But it's certainly an issue in Colorado. I mean, North Dakota we hear about, but Colorado has a huge oil and gas extraction industry that's all being fracked now. So, it's not -- I just want to feed back into, on the public comment that it is not just a regional thing in Ohio. It is a much broader topic that, like, our Valley and Organic Growers Association has come out on the record to the BLM on or around our Valley to try and protect our, you know, our water supplies and things. So, I just want to make sure you realize it's not isolated.

MR. RICE: Thank you for that.

MR. MORTENSEN: And the same -- the same exact thing is true in Pennsylvania and West

Virginia, Eastern Ohio. Yes. For sure.

MR. RICE: A-Dae.

MS. BRIONES: Yes. And I just want to add to that, where the same issue is relevant in New Mexico and North Dakota and Virginia.

MR. RICE: Keep sneaking up on me. Emily.

MS. OAKLEY: I would be remiss if I didn't mention Oklahoma. And I know an organic farmer personally, who has had fracking on her farm and the impacts that that's had on her.

MR. RICE: Harriet.

MS. BEHAR: I think, concerning oil and gas infrastructure, pipelines and such, it's pretty much every state in the Union.

CHAIRMAN CHAPMAN: All right. Okay. We'll move onto the crops subcommittee work agenda.

Francis. Francis, you're going to -- you're taking lead on all of these. Is that correct?

DR. THICKE: Right. Run out the door.

Okay. So, the crops subcommittee has five materials that are petitioned that will be on target, we hope -- or they hope for spring 2018. Polyoxin D zinc salt, allyl isothiocyanate, sodium citrate, natamycin, and sulfur as a molluscicide. And other things that are being worked on that may or may not be on the agenda for next spring are manure treatments, which is some continuation of work on animal with biodegradable, biobased mulch, marine materials. And then the two container and hydroponics issues, which the subcommittee will have to wrestle with somehow. And then the sunsets. Do you want me to read you the list of sunsets?

CHAIRMAN CHAPMAN: Yes.

DR. THICKE: Okay. So, for our 2020 sunsets, we have alcohols, ethanol and isopropanol, sodium carbonate peroxyhydrate, newspaper or other recycled material, plastic mulch and covers, aqueous potassium silicate, elemental sulfur, lime sulfur, sucrose octanoate esters, hydrated lime, liquid fish products,

sulfurous acid, ethylene, microcrystalline cheesewax, and potassium chloride.

Dan.

DR. SEITZ: I had the impression yesterday that people on both sides of the hydroponics issue had some interest potentially, in looking into the idea of a label that would indicate hydroponics. So, I'm curious, if we were to explore that as a work agenda item, how that -- I'm sorry. I am not talking into the mic consistently here. So, I want to -- just want to ask how it -- that might be considered as a work agenda item.

DR. TUCKER: Yes. I think I would sort of repeat what I shared this morning, in that we'll go back and sort of take the events of this meeting back to our leadership team, get their feedback, and then share their thoughts with the board.

MS. BEHAR: So, if we were to explore a label, my confusion is, what committee does it go in? Because we don't typically have labeling

in crops, but it's really not handling. So, that's somewhat my confusion. Because, I might be willing to put together a work agenda request, but I'd have to figure out what committee I have to go through.

CHAIRMAN CHAPMAN: Well, if it wasn't your committee, it would most likely be CA -- or, sorry, if it wasn't in the crops committee, it would likely be the CACS committee, which you also luckily serve on at this time. So, at least one of those two -- generally the requests start at a subcommittee, go through the executive to the -- to the Program. The Program makes a determination. Or if the Program wants to ask directly, they just ask and refer it down to us. But then the chair assigns it out to the appropriate subcommittee. I -- whoever the future chair is -- and I hear your -- as current chair, I hear your concerns, but I think that get resolved if and when some proposal goes forward, and depending on what originates it, if it's us or the Program.

DR. TUCKER: Yes. I would say, if you could let us get some feedback on this, I think that would be a logical next step.

MR. BRADMAN: I just want to echo what Harriet said. I think this would be a good agenda item for the board.

CHAIRMAN CHAPMAN: All right. Thank you, Francis. I just made you go through all the sunsets, just because I wanted more than, let's do it, to be your last words here on the board.

DR. THICKE: Not quite last.

CHAIRMAN CHAPMAN: I know.

So, up next is handling. We also wanted to make Lisa pronounce all these things.

MS. DE LIMA: I've got two more years.

(Laughter.)

MS. DE LIMA: All right. Well, we'll start with petitions. SDBS. So, first petition.

(Laughter.)

CHAIRMAN CHAPMAN: Can you read it out in its entirety?

MS. DE LIMA: Maybe. Sodium

dodecylbenzene sulfonate. And we've got sodium chlorite for the generation of chlorine dioxide gas, silver dihydrogen citrate, the two pepper petitions, which we are still going -- we're coming forward with them, but we are still going back and forth with the petitioner -- getting some information out of them -- and then tamarind seed gum.

Other projects we're working on, BPA, which Asa's taking the lead on. We'll continue working on marine materials, and then a re-classification of magnesium chloride.

And then we have 18 sunset materials. Are you going to make me read those?

Calcium carbonate, flavors, gellan gum, oxygen, potassium chloride, alginates, calcium hydroxide, epolene, glycerides, mono and di, magnesium stearate, phosphoric acid, potassium carbonate, sulfur dioxide, xanthan gum. I'm not going to say that one. FOS.

CHAIRMAN CHAPMAN: Fructooligosaccharides.

MS. DE LIMA: That. What Tom said. Gums, Arabic, Carob bean, Guar, and Locust bean, lecithin de-oiled, and tragacanth gum.

CHAIRMAN CHAPMAN: Any questions for Lisa?

Yes. Harriet?

MS. BEHAR: Is this the flavors that we had public comment about, that there was an annotation that was proposed?

CHAIRMAN CHAPMAN: So, we -- the -- we were petitioned to change the annotation to flavors. I don't remember when we received the petition, but we voted on it in the fall of 2015. And that's what's in the Program right now. At the same time, we did a sunset review, and it's also part of the sunset reorganization. But it's flavors, as currently listed.

MS. BEHAR: We're still waiting for the --

CHAIRMAN CHAPMAN: The Program to move forward.

MS. BEHAR: -- the Program to -- Okay.

CHAIRMAN CHAPMAN: Yes. And I don't know if the Program wants to make a comment on where the flavors annotation change proposal is at.

PARTICIPANT: That is not done.

CHAIRMAN CHAPMAN: So, still under review?

PARTICIPANT: Yes.

CHAIRMAN CHAPMAN: Okay. Steve.

MR. ELA: And I, for Lisa, I lose track, but you've put a -- several other new petitions in front of the handling committee, haven't you? Or am I -- I've seen a few things come through my email that I haven't quite internalized. Am I just? Or was it crops? Okay. Sorry. I haven't been paying real close attention to that. I have to admit. So, sorry.

CHAIRMAN CHAPMAN: Yes. That's for the next semester. All right. We'll move on to livestock.

Ashley.

MS. SWAFFAR: Okay. In livestock we

have a few petitions. The first is thymol. We're still kind of going back and forth on that one. Glycolic acid as a teat dip, and then we just received oxcalic acid for beekeeping last week. So, we'll probably be bringing that one forward.

Our 2020 sunsets are alcohols, ethanol, and isopropanol, aspirin, vaccines, electrolytes, glycerine, phosphoric acid, hydrated lime, mineral oil, and sucrose octanoate esters. And that's all we have for now. So -- any questions?

CHAIRMAN CHAPMAN: Questions for Ashley?

All right. Up next is materials and GMO subcommittee.

MS. BEHAR: So, we will be working on the non-GMO organic seed integrity, contamination issues of farm inputs is still on our agenda, as well as the continued work on the living document of excluded methods terminology.

CHAIRMAN CHAPMAN: Questions?

All right. Thank you. And --

MS. BEHAR: And maybe sanitizers.

CHAIRMAN CHAPMAN: And up next is policy development with Dan.

DR. SEITZ: So, there are no major revisions that are needed. There may be a couple small tweaks to just make the manual consistent with how a procedure here or there may have evolved.

CHAIRMAN CHAPMAN: Thank you, Dan. Questions for Dan?

All right. I think that's it. Okay. So, up next, we have a presentation of certificate of appreciation. I also have a motion here I forgot to read off. But it's a motion to sunset Francis Thicke.

(Laughter.)

CHAIRMAN CHAPMAN: I think it takes a two-thirds vote from the board --

MS. BEHAR: I --

CHAIRMAN CHAPMAN: -- to allow this to occur. They remain on the list unless voted off.

MS. BEHAR: I speak against that motion.

MR. RICE: So, deferred sunset, or would we have him until March of 2022?

CHAIRMAN CHAPMAN: So, generally, we -- there's a presentation of a plaque. And we open it up to the Program to do that, and then we give Francis an opportunity to say a few words if you'd like.

So, Jenny.

DR. TUCKER: Thanks. I've got to move over and sit next to Francis for this presentation. We do have a plaque for Francis. It says, certificate of appreciation, presented to Dr. Francis Thicke for five years of dedicated service as a member of the USDA's national organic standards board, 2013-2018. And I just want to say that since I've been working with Francis and hearing about his impact on the board, it really is phenomenal, the insights, experience, and expertise that this group has come to rely on him so much for. And I know that

that will be dearly missed by this group and by the Program. Your depth of knowledge, of thoughtfulness, of commitment.

Francis and I share one -- well, probably a lot of things in common, but one thing I particularly value in this moment is Francis is a trumpet player, and I am a trumpet player. So, we have part of the brass section covered. And it reminds me that often in music -- I'm a big fan of music metaphors. And we often have dissonant chords. Right? And often we don't know how a chord is quite going to resolve, but sometimes the most discordant and unresolved music can end up resulting in the most beautiful harmonies ever. And I think that that can be a good metaphor for our community and orchestra here today.

So, Francis, thank you for your gifts, for your commitment, and your total devotion to this community.

DR. THICKE: Thank you, Jenny. Appreciate it.

(Applause.)

DR. THICKE: Well, I hope it isn't too discordant what I might say here, but I hope you can take it in the spirit of what I'm giving it in.

First of all, I want to thank all the board members for all your hard work, and all the staff. I really appreciate it. And we really appreciate Michelle. She's the glue that holds it all together. And whatever you're paying her, it's not enough.

So, there are two important things I learned being on the board for five years. First, I learned that the NOSB review process for materials petition, is really quite rigorous. Technical reviews and careful scrutiny by the subcommittees and by the full board.

The second thing I've learned over time is that the industry has an outsized and growing influence on USDA and on the NOSB, including through NOSB appointments, compared to the influence of organic farmers, who started

this organic farming movement.

Perhaps that is not surprising, given the growing value of organic sales. As organic is becoming a 50-billion-dollar business, the industry not only wants a bigger piece of the pie, sometimes it seems they want the whole pie. Now, we have organic chicken CAFOs with 200,000 birds crammed into a building with no real access to the outdoors, and a chicken industry working behind the scenes to make sure that the animal welfare standards, weak as they were, never make it to see the light of day, just like the chickens. The image consumers today of organic chickens ranging outside has been relegated to pictures on egg cartons. We have CAFO dairies with 15,000 cows with compelling evidence by investigative reporter that the CAFO was not meeting the grazing rule, not by a long shot.

But when USDA did its obligatory investigation, instead of a surprise visit, they got a heads up, so that they could move the cows to the feed lots, to pasture, on the day of

inspection, which gives a green lot to that dairy CAFO to move forward with his plans to establish a 30,000-cow facility in the Midwest.

We have large grain shipments coming into the US that are being sold as organic, but lack organic documentation. Some shipments have been proven to be fraudulent. The USDA has been a bit slow to take action to stop this. The organic crop farmers in the US are suffering financially a great deal as a result. And I spoke with the reporter who broke the story on the fraudulent organic grain imports. When I ask him how he's able to document that fraud, when USDA said it was very difficult, he said it was easy.

We have a rapidly growing percentage of the organic fruits and vegetables on grocery-store shelves being produced hydroponically, without soil, and mostly in huge, industrial-scale facilities. And we have a hydroponics industry that has deceptively renamed hydroponic production, even with 100 percent liquid feeding,

as container production. With their clever deception, they have been able to bamboozle even the majority of NOSB members into complicity with their goal of taking over the organic fruit and vegetable market with their hydroponic products.

Perhaps we shouldn't be surprised to find that big business has taken over the USDA organic Program, because the influence of money is corroding all levels of our government. At this point, I really can't see any -- I can only see one way to bring the organic label back in line with the original vision or organic farmers and consumers.

I think we need an add-on organic label for organic farmers who are willing to meet the expectations of discerning consumers who are demanding real organic food. A year ago, I wouldn't have supported that idea of an add-on organic label, because I, like many others, saw the USDA organic label as the gold standard and had hoped that through our vision of the process of continuous improvement, we could really make

it to be that gold standard.

Now, I see that the influence of big business is not going to let that happen. The US is increasingly exerting -- the USDA is increasingly exerting control over the NOSB, and big business is tightening its grip on the USDA and on Congress. Recently, the industry representatives called publicly on the US Senate to weaken the NOSB and give industry a stronger role in the National Organic Program. And sympathetic centers promised to do just that.

Now, I support the establishment of an add-on organic label that will enable real organic farmers of discerning organic consumers to support on another through a label that represents real organic food. I support the creation of a label such as the proposed regenerative organic certification that will ensure organic integrity, for example, that animals have real access to the outdoors and to be able to express their natural behaviors, and that food is grown in soil. My hopes are that

this add-on certification can be seamlessly integrated with the NOP certification, so that a single-farm organic system plan and inspection can serve to verify both NOP and the higher level organic certification by certifiers that are credited at both certification systems.

I'm also pleased that the organic farmers have recently organized themselves into the Organic Farmers Association, to better represent themselves in the arena of public policy. Too often in the past, the interests of big business have overruled the interests of organic farmers and consumers when organic policies are being established in Washington.

I hope this new organization will allow organic farmers to gain equal footing with industry on issues that affect the organic community.

So, in summary, organic is at a crossroad. We can either continue to allow the industry to -- their interests to bend and delude the organic rules to their benefit, or for

organic farmers, working with the organic consumers, you can step up and take action to ensure organic integrity in the future.

Thank you.

CHAIRMAN CHAPMAN: Thank you, Francis. Any board members want to say any last words to Francis?

Harriet.

MS. BEHAR: I'll be seeing you, Francis.

MS. SWAFFAR: So, Francis, you've been my vice chair in livestock, and you've been such a valuable member to our committee. I will miss you so much and your knowledge of the dairy industry. And you know, we'll really have hole in our committee for quite some time, but I just want to remind you, your term does not end until January. So, we still have a lot of meetings left. But thank you so much for your service.

DR. THICKE: Thank you, Ashley.

CHAIRMAN CHAPMAN: Emily.

MS. OAKLEY: When I first got

appointed to this position, we were asked to subcommittee calls, and I did. And I was also told that we would probably have mentors if we wanted them. And I listened to all the people speaking, and I just always gravitated towards Francis, as I think many of us do, for the kind and thoughtful way that he speaks. Even when he says things that are contentious, it always comes out sounding nice. And I just had an affinity for everything that he said.

So, I just wanted to thank Francis for being my mentor. And even though it's my second year, I still feel like you're mentor, and you will be even when you're gone. I'll still ask you questions and how to pronounce things. But, thank you.

You bring your perspective as a farmer, as a soil scientist, as a former USDA employee, and as a consumer, to this role that I don't think anybody else can bring to this table. And you will be sorely missed. Thank you.

CHAIRMAN CHAPMAN: Michelle.

MS. ARSENAULT: Yes. So, I just wanted to say thank you to Francis. Francis and I share a birthday, and I've gotten a couple of trumpet serenades over the years. So, thank you, Francis. But I will hold a grudge that you've been on this board for five years, and as a dairy farmer you make ice cream, and I have not gotten any ice cream yet. So --

CHAIRMAN CHAPMAN: Well, you still have until January 23rd.

Steve.

MR. ELA: Francis, this is the, I think, the second board I've served on with you. And even though there's a small overlap, I just want to say, I appreciate your free thinking and your public comments, your ability to analyze issues and bring out, you know, the real gist of it. And I know you're not going to disappear, and I am looking forward to your continued involvement in all things organic and moving all everything forward. Thank you, so much.

MR. MORTENSEN: I would like to echo

what Emily said about the mentorship. Francis, I -- probably ten times we talked on the phone about things that I was just unclear on, or -- two times Francis called from his tractor with questions about cover crops that we discussed while I was in cover crop fields in Pennsylvania. But we will definitely miss you, and we will clearly miss your leadership in seeing a holistic system and articulating it in such a beautiful way that you do.

Thank you, Francis.

MR. BRADMAN: Yes. I just want to thank you too for your presence. I mean, I really feel like you're a gentleman in the real meaning of the word. You know, I've only been now to two meetings, and I've been on the phone calls, and I really feel like there's been fair discussion. And I just really appreciate that. And it's kind of a role model for my role here. So, thank you.

CHAIRMAN CHAPMAN: Have we -- have we made you blush, Francis?

(Laughter.)

CHAIRMAN CHAPMAN: All right. Francis, thank you very much.

Okay. Up next, we have officer elections. Michelle, can you pull up? Yikes. All right. Hold on.

All right. So, briefly I want to review the election procedures from our policy and procedures manual. So, we do officer elections every fall for all positions. There's three officer positions, chair, vice chair, and secretary.

And I'll briefly run through the process. So, first it starts with nominations. And any NOSB members eligible for consideration for any officer position. The second one is that any NOSB member may self-nominate or be nominated by another member of the NOSB. The third one isn't really relevant here, but it's basically saying no quitters. Once you're in, you're in. The fourth one states that members may serve more than one term in any officer position.

The voting schedule. So, officers should be elected to one-year terms by a majority vote in the fall at the NOSB meeting. Newly elected officers will assume their positions at the conclusion of the fall NOSB meeting and assume the responsibilities thereof at that time. Outgoing NOSB officers will assist incoming officers with their transition to their new roles, to be completed no more than the 23rd of January of the following year.

So, counting of the votes. Votes are done by secret ballot. Jesse and Ashley just passed them out. So, we have a green, a yellow, and a red. I'll use the green for chair, the yellow for vice chair, and then the secretary. The ballots are cast, and we do elections in that order. So, we start with the chair, move on to the vice chair, and finish with the secretary.

Yes?

MS. OAKLEY: Could you repeat those colors?

CHAIRMAN CHAPMAN: We'll start --

we'll do it when we -- as we go through, just to make it clear. But, green -- green for chair. Yellow for vice chair. Pink for secretary.

Ballots will be counted for one office at a time. The secretary will announce the tally before the next office is open for nominations. The secretary and the vice chair will prepare and distribute the ballots and then collect them after each vote. One thing to note here. If one of those officers are running for election -- it's not specified here, but it's probably prudent that they don't collect the ballots. So, we'll either choose another officer, or perhaps an outgoing member.

The secretary will tally votes with the chair, and the chair will verify the results. Again, if one of those officers are running for election, we'll use another officer or an outgoing member as necessary.

The first nominee to receive a majority of votes will be elected. If no nominee receives the majority of votes, the nominee with

the least number of votes, assuming there's more than two, will be eliminated, and a revote will occur with the remaining candidates. This process will be repeated until a nominee obtains a majority. In the event of a tie, there will be a revote until the nominee obtains a majority. And all nominees will be included in the revote.

So, we do vote by majority. So, plurality requires a revote, if that makes sense to folks.

Votes will remain confidential, and ballots will be disposed of by the chair or secretary. And a nominee may withdraw at their discretion at any time. In the event of only one nominee for office, the vote may be done by acclamation.

So, at this time, we'll open it up for nominations for the first position, which is chair.

Francis.

DR. THICKE: I nominate Harriet Behar.

CHAIRMAN CHAPMAN: Lisa.

MS. DE LIMA: I nominate Tom Chapman.

CHAIRMAN CHAPMAN: Emily.

MS. OAKLEY: Can I second both?

CHAIRMAN CHAPMAN: Yes. There's no need to second, but yes. Perfect.

MS. OAKLEY: All right. Got it.

CHAIRMAN CHAPMAN: Okay. If people are comfortable or uncomfortable with me running because I was nominated, I'll pull it over to Ashley, but Ashley can -- I mean, we just -- we all have ballots.

MS. SWAFFAR: Okay. So, we're going to use the green ballots. Please write on them either Harriet's name or Tom's name, fold them in half, and Jesse and I will be around to pick them up.

(Voting.)

CHAIRMAN CHAPMAN: Francis, you got that trumpet?

MS. BEHAR: Can it be a requirement that Francis' replacement play a musical instrument.

CHAIRMAN CHAPMAN: Yes. That seems like a good idea. We should let the secretary know to add that to the criteria.

MR. MORTENSEN: Harriet, you don't know this about me, but I play the accordion.

CHAIRMAN CHAPMAN: Did you bring it with you?

MS. BEHAR: Along with wine and tofu, I like the accordion.

PARTICIPANT: We could have played

MR. MORTENSEN: I almost brought it with me.

CHAIRMAN CHAPMAN: I'm not sure how the public would feel about that. This is going to make for some really good transcripts.

MS. SWAFFAR: Okay. We have tallied the votes, and Tom, you will be our chair again next year.

CHAIRMAN CHAPMAN: Okay. The next officer up for election is vice chair. Any nominations for vice chair?

Emily?

MS. OAKLEY: Harriet.

CHAIRMAN CHAPMAN: All right.

MR. BUIE: I'd like to nominate Ashley.

CHAIRMAN CHAPMAN: Okay. I have a nomination for Harriet and a nomination for Ashley.

MR. BRADMAN: Can I ask a question?

CHAIRMAN CHAPMAN: Yes.

MR. BRADMAN: What does the vice chair do?

CHAIRMAN CHAPMAN: Hoo, hoo. Seems like a kind of an esoteric question or one of the ones you can't really answer. You want me to pull out my -- give me a second. This seems like an excellent time to be able to refer back to the --

MR. BRADMAN: Give me the short version.

CHAIRMAN CHAPMAN: -- the policies and procedures.

PARTICIPANT: So, there's a

definition, correct?

CHAIRMAN CHAPMAN: There is a definition. Just give me a half a second here.

MR. BRADMAN: I assume in the absence of the chair they act as chair, but is there anything else?

CHAIRMAN CHAPMAN: All right. The vice chair acts in the absence of the chair. The primary duties of the vice chair are as follows, serves as a member of the executive subcommittee, participates in the administrative team meetings, serves a member of the policy development subcommittee, and helps maintain the policies and procedures manual and ensure its accuracy.

Any other nominations? Okay. Seeing none, we'll use the yellow card. And, similarly, please write down a name, either Ashley or Harriet. Fold it in half, and Jesse and I will collect them.

(Voting.)

CHAIRMAN CHAPMAN: The vice chair will be Harriet. Congratulations.

Up next is secretary. And since we had the question, I am going to read and have it before me. The primary of the secretary are as follows, serves a member of the executive subcommittee, participates in administrative team meetings, records all NOSB votes at NOSB meetings in collaboration with the advisory committee specialist, and circulates that record to the NOSB members for approval, assists with annual elections of NOSB officers, and may delegates tasks to others but retains responsibility for the official record. In addition to this, we've had the secretary also monitoring the open docket and providing updates to the board. It's not officially in the job description, but that's been a task as assigned from the chair.

Any nominations for secretary?

Harriet?

MS. BEHAR: I don't know. Jesse just gave me a side-wise glance. I'm not sure I was going to nominate Jesse. Do -- would you like to continue serving?

MR. BUIE: Not really. No. I'm not.

MS. BEHAR: Well, then, I'll nominate Dan Seitz.

DR. SEITZ: You know, I'll pass for the time being. But thank --

CHAIRMAN CHAPMAN: Joelle?

MS. MOSSO: I'll nominate Scott.

CHAIRMAN CHAPMAN: Scott, you going to pass too, or you --

MR. RICE: I'll accept. Thank you. Was it the duties as assigned by the chair that's scaring everyone here?

MR. RICE: I think that qualifies.

CHAIRMAN CHAPMAN: Any other nominations? Yes, A-Dae?

MS. BRIONES: I would like to nominate Ashley.

MS. SWAFFAR: No, thank you. I think Scott will be a fabulous secretary.

CHAIRMAN CHAPMAN: Okay. We only have one nominee. So, we can save our pink pieces of paper, and we'll take the vote by acclamation.

All in favor of Scott, say aye.

(Chorus of aye.)

CHAIRMAN CHAPMAN: Scott. Okay. So, we have our new officers for next year. And with that, we'll move on to -- Yes. Thank you. With that, we'll move onto other business and closing remarks. I don't -- I'm unaware of other business before the board. Closing remarks, I'd like to ask the Program if they have any closing remarks to make.

DR. TUCKER: Thank you very much. I'm going to actually first turn it to Paul here.

DR. LEWIS: Thank you, Jenny. I want to make a few remarks. I want to first thank the board for all your work, appearing for deliberations, and this week's work. I know it was a lot of public comments, and we appreciate all the effort in terms of balancing your professional responsibilities and also your work here. Also want to thank the public. So, the public plays a valuable role in terms of providing information to the board, but also to

us, the Program, in terms of helping us in terms of decisions that we make, any other work that's important for us with National Organic Programs. So, we appreciate the valuable comments that you make, both via the web -- our two public comment webinars we just had recently, and the public comment process that we had today.

Finally, also, I want to thank Francis. I didn't make any remarks when people were going around, because I wanted to save the time here. Really enjoyed working with you, Francis -- working with you, learning with you, the conversations that we had. It was really a valuable and rewarding experience. I just want to thank you for serving on the board these years. And for my two years here, it was really a very rewarding experience. So, thank you for that.

Also, the new leadership, or continuing leadership, certain parts, for the National Organic Standards Board, for Tom, Harriet, and Scott. I'm looking forward to

working with you over the next year.

But I would be remiss in terms of not thanking my NOP colleagues, to Doctor Tucker, Michelle, Lisa, and Devon. The work that they do behind the scenes to get us to this place today and during the course of the week, is phenomenal. So, I just want to thank them for the work that they do and just for being a great team. So, thank you.

As Dr. Tucker's DFO, I turn the meeting to you.

DR. TUCKER: Okay. And I would love it if all of us would give Tom Chapman a huge hand for doing such a wonderful job with this meeting. So, Tom, thank you.

And, again, thanks to all of you who invested your time and energy in being here during this meeting. Thank you for being here. And I think the meeting is officially --

CHAIRMAN CHAPMAN: Quick comments, if you will let me. So, thank you to the public for your participation in our meeting. Thank you to

the board members, again, for your time and dedication. Thank you to our audio support, and transcriptionist. Thank you to the Program. And I think, especially, we would be remiss if we didn't specifically call out Michelle and thank you for all her hard work to make this seamless.

Another flawless meeting with great execution. So, thank you, Michelle. Always appreciated.

Oh, yes. And thanks to our outgoing officers as well, for their time and service during this last year. They've been a great help and support. And welcome to the oncoming officers as well.

With that, we'll close the meeting.

DR. TUCKER: We are adjourned. Thank you very, very much.

(Whereupon, the above-entitled matter went off the record at 3:58 p.m.)

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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Fall 2017 Meeting

Before: USDA/NOSB

Date: 11-02-17

Place: Jacksonville, FL

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate record of the proceedings.

Neal R. Gross

Court Reporter