UNITED STATES DEPARTMENT OF AGRICULTURE

+ + + + +

NATIONAL ORGANIC STANDARDS BOARD

+ + + + +

WEB CONFERENCE

+ + + + +

MONDAY,
AUGUST 14, 2017

The National Organic Standards Board convened via web conference, 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:
JENNIFER TUCKER, Associate Deputy Administrator
PAUL LEWIS, Director, Standards Division
MICHELLE ARSENAULT, Advisory Committee Specialist, NOSB
MILES McEVOY, AMS Deputy Administrator

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

(1:06 p.m.)

MR. LEWIS: Good afternoon. My name is Paul Lewis, Director of Standards Division of the National Organic Program. I would like to welcome the members of the National Organic Standards Board and the public to today's NOSB discussion in the development of a potential proposal on hydroponics and organic agriculture.

This is part of the Board's continuing discussion on this topic, and I am looking forward to today's dialog.

The NOSB will be having its next meeting, in fact a face-to-face meeting, from October 31st to November 2nd, 2017. As part of that meeting the NOSB will have a public webinar on October 24th, and a possible second public comment webinar on October 25th to hear public comments on topics to be addressed at the face-to-face meeting.

Please check the NOP website to participate in the public comment webinar and

face-to-face meeting.

I would also like to thank my NOP colleagues for their help behind the scenes to bring us today's teleconference.

Before I turn this meeting over to the Chair of the NOSB Tom Chapman, I want to make sure everyone can hear us. And if you can hear us, please chat in the chat room, type in "yes."

I would like to now turn the meeting to our Chair of the NOSB, Mr. Tom Chapman. Tom, thank you for chairing today's meeting. I am looking forward to a interesting and productive dialog.

CHAIRMAN CHAPMAN: Thank you, Paul.

My name is Tom Chapman. I am Chair of the National Organic Standards Board. I would like to welcome all members of the NOP, the National Organic Program staff, as well as the public. Thank you for taking time out of your busy day to listen and help us address this important subject before the organics community.

This conference call is to facilitate

a public and board-wide discussion of the hydroponics in hopes of getting the Crops Subcommittee additional information that they need to craft a proposal with input from all board members. Board-wide discussions have historically only happened at board meetings. And this conference call is a new approach that will hopefully give subcommittee, the subcommittee additional insight into the thinking of both subcommittee and non-subcommittee members, and to be helpful at moving discussions and dialog of complex topics along more quickly between in-person board meetings.

This is a new format for the board, so I ask board members and listening members of the public to forgive us if there are any technical issues. Additionally, we will not be voting on any items today. If you hear us talk about technical terms like motions, proposals, or recommendations it is to talk about the potential of bringing these forward at a future board meeting. Again, no voting will occur today.

Since this meeting is meant to facilitate a transparent board-wide discussion prior to a finalized proposal, this conference call was not open to public comment. And the board currently does have an open docket available for feedback directly to board members. If members of the public want to provide more information to the board today, that would be the best forum.

Additionally, as Paul outlined, the board, the board will hear public comment in preparation for the fall NOSB meeting via webinar, in-person, and written comments.

With that, I will hand the meeting over to Michelle to take a verbal roll call of members present. Michelle.

MS. ARSENAULT: Thanks, Tom.

All right. Sue Baird.

MS. BAIRD: Yes.

MS. ARSENAULT: Hi, Sue.

Harriet Behar.

MS. BEHAR: Here.

MS. ARSENAULT: Excellent.

Asa Bradman.

MR. BRADMAN: Asa is here.

MS. ARSENAULT: Thank you.

MR. BRADMAN: Yes.

MS. ARSENAULT: Jesse Buie.

MR. BUIE: Present.

MS. ARSENAULT: Hello there.

Tom Chapman, I know you're here.

Lisa de Lima.

MS. DE LIMA: Here.

MS. ARSENAULT: Excellent.

Steve Ela.

MR. ELA: I am here.

MS. ARSENAULT: Excellent, sir.

Dave Mortensen.

MR. MORTENSEN: Present.

MS. ARSENAULT: Thank you, sir.

Joelle Mosso.

MS. MOSSO: Here.

MS. ARSENAULT: Hello.

Emily Oakley.

MS. OAKLEY: Present.

MS. ARSENAULT: Hi, Emily.

Scott Rice.

MR. RICE: Present.

MS. ARSENAULT: Thank you, sir.

A-dae Romero-Briones.

MS. ROMERO-BRIONES: Here.

MS. ARSENAULT: Thank you.

Dan Seitz.

MR. SEITZ: Here.

MS. ARSENAULT: Great.

Ashley Swaffar.

MS. SWAFFAR: Here.

MS. ARSENAULT: Okay, thank you.

And Francis Thicke.

MR. THICKE: Here.

MS. ARSENAULT: Great. That's all 15 NOSB members present and accounted for.

CHAIRMAN CHAPMAN: Thank you, Michelle. And with that I'm going to hand the board -- I'm going to hand the meeting over to Francis, chair of the Crops Subcommittee to run

the discussion from here. Francis.

MR. THICKE: Thanks, Tom. And thanks, Michelle and Paul.

So, as Tom mentioned, what the Crops Subcommittee would like to do here today is get feedback from the full board on some of the key concepts in the draft proposal on hydroponics and container growing which has been prepared by members of the Crops Subcommittee. In particular, we would like board feedback on four proposed motions in the document.

Also, I understand that some members of the Crops Subcommittee are planning on preparing a minority report to be included in the proposal. And we would like to, if you wish, to hear about that as well.

So, what I'll do is read each motion, each draft motion along with a little background information. And then we can open it up for discussion.

So, getting right into it, the first one is on aeroponics. And aeroponics is defined

here as a variation of hydroponic plant production in which plant roots are suspended in air and misted with nutrient solution. And the proposed motion is to not allow aeroponic production systems to be certified organic.

With that, I would open it up for comments from board members. You can raise your hands on the screen.

Everybody is a little bashful here. Oh, here we go. Harriet is the first one with a hand raised.

MS. BEHAR: Hello, everyone.

MR. THICKE: And Emily, I'm sorry. I'm sorry, Emily Oakley is second on deck.

Thank you. Go ahead.

MS. BEHAR: So, aeroponics is not allowed in two of our major trading partners, the European Union and Canada. And I think that the definition is very clear. And eventually I'm hoping that we can have a discussion, if it does go through the NOSB recommendation, that we also provide the National Organic Program, with the

consultation, a place to put this prohibition in the regulations.

So that that's my only concern with not allowing it is making sure that we are on board, if it is disallowed, that we know where to put it in the regulations. Because that was one comment we did get from the National Organic Program on our last draft -- last proposal, and that's why we took it back, is that they did not understand where they would put the rulemaking.

But I support the proposal that aeroponics as defined not be permitted to use the USDA organic seal or organic label in the marketplace.

I'm done.

MR. THICKE: Thank you, Harriet.

Emily.

MS. OAKLEY: Yes. I just think that this might be one area where we had the greatest amount of consensus in previous discussions, both possibly board-wide at some of the in-person meetings, and also in the CS subcommittee

meeting. So I wanted to just get a sense from people on the call today if there is a general consensus for prohibiting aeroponics. If there is anybody that wanted to speak in favor of it. Just trying to get a sense of where people stand on this issue.

And I'm done.

MR. THICKE: Okay, thank you.

There are no other hands raised on this issue right now. And I would echo what Emily asked is that if there's anybody here, the Crops Subcommittee would like to know if there's anybody who would prefer that aeroponics be allowed to be certified organic. If we don't hear from anybody then we'll assume that that proposed motion has unanimous support.

MS. MOSSO: Joelle.

MR. THICKE: Joelle, I see your hand is raised.

MS. MOSSO: Hi. Yes, I was actually going -- I'm echoing actually that I could support the aeroponics under the current

definition would not be allowed.

MR. THICKE: Thank you, Joelle.

So I don't see any other hands raised on this issue, so let's move right on to the next one.

Oh, Ashley.

CHAIRMAN CHAPMAN: I think Ashley raised her hand.

MR. THICKE: Yes, Ashley, did you want to speak here?

MS. SWAFFAR: Yep. Just want to say I'd be in favor of not allowing it also.

MR. THICKE: Thank you.

Okay, if nobody else, I don't see any other hands raised, so let's move on to the second proposed motion, and a draft motion I should say, and that's on hydroponics. And in this one, for the discussion here we reverted back to the definition of hydroponics that was used by the NOSB in its 2010 recommendation.

And I'm just going to read a few sentences here to give the background on that.

In the 2010 recommendation the NOSB stated that hydroponics cannot be classified as certified organic growing methods due to the exclusion of the soil-plant ecology. The definition of hydroponics that they used then is "the production of normally terrestrial, vascular plants in nutrient-rich solutions, or in an inert, porous solid matrix bathed in nutrient-rich solutions."

And if you remember, in the spring, those of you who were there, spring 2017 in a discussion document the Crops Subcommittee had changed that definition slightly and had included along with in their matrix "biologically recalcitrant." Well, in this draft motion we've taken that out and gone back to the 2010 recommendation.

So I guess I would open it up at this point for discussion on that draft motion and definition.

CHAIRMAN CHAPMAN: Yes, Francis, I'll raise my hand.

MR. THICKE: Okay, Tom, go ahead.

CHAIRMAN CHAPMAN: I'm curious to know what the Crops Subcommittee's thought is the value of I guess re-passing the 2010 recommendations, given I believe this item came on our work agenda because the 2010 definition wasn't sufficient to provide the program with the information they needed to move forward and approve anything.

What value does it have re-passing the same motion?

MR. THICKE: Well, the value is that what we have to follow up is a container growing motion, draft motion that would define container growing. I think in the past what the NOP was concerned about is that this did not address container growing. And so we are addressing that in a future motion that we'll discuss here in a minute or two.

Okay, Jesse's hand is raised. And then following Jesse is Harriet.

Go ahead, Jesse.

MR. BUIE: Yes. You know, how will the revised EU organic regulations, you know, banning hydroponics, how is that going to affect our deliberations?

MR. THICKE: I don't know if I can answer that question. But you bring up a point that -- and this is a good background that will be important for the container discussion -- the European Union, except with a few exceptions, does not allow any container growing. Everything has to be grown in soil, connected to the Earth's surface.

And we understand that the European Union now is in the process of actually making that just applied to all countries. Apparently there are a few countries that have an exception, but apparently that is going to be for all countries in the European Union.

And there are some implications there. One is that it's not reciprocal in that European growers can grow hydroponically and sell it in the U.S. Of course, U.S. growers cannot sell

hydroponically and sell it to the European Union.

So, I don't know exactly what all this is going to do, what it all implies for the European Union in that our market, our exchange.

If anybody else has a comment that came in on that?

CHAIRMAN CHAPMAN: This is Tom. I have a comment.

MR. THICKE: Go ahead, Tom.

CHAIRMAN CHAPMAN: I mean there are some fairly significant differences between the U.S. standards and international standards for European Union today. Some examples are the allowance of antibiotics in livestock, the allowance of vitamins and minerals. On the U.S. side in cost of products, the way you calculate non-agricultural and agricultural ingredients and what's allowed percentage-wise is vastly different between the U.S. and Europe. And there's others.

And these, you know, like sulfites in wine, another example, these are all fairly

significant differences that haven't blocked or really limited trade between the U.S. and Europe. They're just dealt with as one-off situations. Some may result in annotations to the equivalency agreements, and some are just accepted as regional differences between standards.

I don't really see -- I look at international models as a way of providing input as how other folks have addressed this issue, but I don't see it as a motivating reason to take a certain action or establish a specific standard.

And that's it for me. Thanks, Francis.

MR. THICKE: Okay, thank you, Tom.

One follow-up point. I remember when we were doing the antibiotics in fruit, tree fruit, is that the Europeans would not allow American apples imported that had been grown with antibiotics. So, I think on major issues there has sometimes been some difference. But that's not the case in hydroponics at this point. Maybe they will take action in the future; I'm not

certain.

But I do know in speaking with some of the European representatives that they are concerned that they have a lot of pressure from the hydroponics growers, and they're concerned that if the U.S. passes a very weak hydroponic rule that it will have implications for them down the road.

Next up is Harriet.

MS. BEHAR: Okay. So, to the first question about whether the -- why we went back to the 2010 definition, in my view it's not so much the definition that's the issue but how, what is the mechanism for regulating that system of production?

And as Francis said, we are going to be looking at containers as being a separate system of production, separate from a "hydroponic" operation that meets the 2010 definition. And then we would look for a mechanism to not allow or allow, however you want to have it. So we would have that definition.

And I think we all agree that that definition is very clear, very understandable, actually does mesh well with our trading partners.

In response to whether or not this has caused any market interference, especially internationally, I would also state that the -- that in our equivalency agreements with both Canada and the European Union, hydroponic is called out specifically as something that is not allowed to go into the European Union. And we do have some issue with "organic" and NOP organic operations in -- on the land mass of the European Union that can only sell their products into an organic market overseas into our market because in their home market it is not allowed.

So there is to me some market confusion and even some chance for mislabeling due to that non-allowance.

And I agree that there is the antibiotic --

MR. THICKE: Thank you.

MS. BEHAR: -- side with the livestock that we will not accept antibiotics from livestock. So typic -- that's produced in the European Union because they do allow it. But typically what happens is then those operations have to be dual-certified to both the NOP and to the European Union.

I'm done.

MR. THICKE: Thank you, Harriet.

And people said they can't tell who's speaking. So I will say myself that this is Francis talking again.

I don't see any other hands raised. But I would raise the question is there anyone on the board who cannot today support the 2010 recommendation based upon the 2010 definition of hydroponics? The Crops Subcommittee would like to know that as we try to work to finalize our recommendations, our proposals and motions.

Ashley has her hand raised. Ashley, go ahead.

MS. SWAFFAR: Thanks. So, one thing,

I just want to bring up this fact is, you know, the hydroponic definition, like we see in that 2010 site, would probably not fit what's currently happening as far as what hydroponics systems are certified. Because I know certifiers are actually certifying those operations according to the 2010 document. So I really think that the currently certified hydroponic systems would still continue to be certified organic if, even if this motion was to go forward not to allow hydroponic systems as you've written it.

MR. THICKE: So, Ashley, the question, and I don't know the answer, are there not some hydroponic operations that are in pure liquid that are certified today? Can anybody answer that question?

Ashley, go ahead.

MS. SWAFFAR: Right. Well, I was going to say it's so, everybody has all these different ideas, because they're still in that little peak, whatever you call that little thing

that looks like the size of a quarter that will keep things, so that, well, if you would really consider that really an all-liquid system.

But, yes, I mean there are some --

MR. THICKE: I thought that --

MS. SWAFFAR: Go ahead. Sorry.

MR. THICKE: Go ahead. Go ahead. Go ahead, Ashley.

MS. SWAFFAR: I haven't seen every system out there that's certified. I haven't seen very many. So I can't speak to what every certifier does and look at every system. But I, I do think there's a lot of certifiers out there that are following the 2010 recommendation as justification for certifying hydroponic systems.

So I really think that we'll still have some hydroponics.

MR. THICKE: I'm interrupting, Ashley. Would you yourself personally be in favor of the hydroponic operation that uses all organically-approved inputs that's in pure liquid, like a nutrient film technique, to allowing them to be

certified organic?

MS. SWAFFAR: Thanks for putting me on the spot. Yes, I would. I would.

MR. THICKE: You would consider them to be certifiable. Okay, thank you.

MS. SWAFFAR: Yes. I do support the 2010. But I, you know, I'm very open to hydroponics because I think they're interesting new technology that really has a place in the organic.

MR. THICKE: Okay. Joelle, I see your hand is raised.

CHAIRMAN CHAPMAN: Francis, can you add me to this as well?

MR. THICKE: Yes. Tom, you can be second.

Joelle.

MS. MOSSO: This is Joelle. And I just wanted to follow up on what Ashley also said and that I, too, would support more novel systems that allow for systems to evolve and to be inclusive of hydroponics. And I, you know, ask

it be discussed more later in the call.

There's a group of us, you know, providing a minority view that will be speaking to what we, you know, view as compliant. And we do feel that the 2010 recommendation for the definition of hydroponics is fine but does need further elaboration, as was requested from the NOP. So, we will be providing that, not with details on this call but we are in the process of writing it.

MR. THICKE: Thank you, Joelle.

Tom.

CHAIRMAN CHAPMAN: Yes. To attempt to answer your first question about operations being certified, I don't know. But from the feedback I've seen from certifiers, from the public input in the past, and from the kind of pro-hydroponics subcommittee of the Hydroponics Subcommittee -- Task Force, it sounds like most of those operations consider themselves in compliance with the 2010 recommendation.

So, I mean that kind of gets back to

my first point of what additional clarification that provided. I am fine with the 2010 recommendation from the NOP and would vote in favor of it, but I don't -- the problem I have with the 2010 recommendation is it didn't provide the clarity to the program and to the public as to what it was really prohibiting.

From the way I read it, it prohibits items without any sort of plant, terrestrial plants grown without any substrates, similar to the aeroponics motion that you discussed earlier, potential motion. Or plants grown entirely in inert substrate which, you know, would mean something like a perlite which, as I understand, most operations have moved away from.

So while I'm fine supporting the 2010 recommendation again, I don't, I still think it sows a lot of confusion out there in the community as to what's really being prohibited.

MR. THICKE: Okay. Joelle, did you have a hand raised again? It's still up on the right.

MS. MOSSO: No, I don't. Sorry. Let me lower it.

MR. THICKE: Okay. Steve. Steve Ela has his hand raised. Steve.

MR. ELA: I think, and again I agree with what you're saying, Tom, but I guess, you know, the Crops Committee was, you were -- we know this is a controversial topic so we were trying to find at least, you know, some of the things that we felt we, you know, could have some common ground on among the whole NOSB and then work our way up from that.

So while it's sort of restating the 2010, you know, recommendation, I guess we felt like it was still important to say, yes, here's at least for the NOSB board as a whole here's the baseline yet again. And I, you know, agree the wording probably needs to be added to just to help clarify that a little bit that, you know, you can't grow in rockwool, you can't -- rockwool, you can't grow in perlite. And so at least just to draw some baseline that, you know,

here's something the board agrees on.

So that's all I have to say.

MR. THICKE: Thank you, Steve.

Anybody else, comment?

MR. BRADMAN: This is Asa. I don't know, can you hear me?

MR. THICKE: Yes.

MR. BRADMAN: Okay. I apologize for interjecting, my computer's not letting me click the hand, raising my hand.

I want to go back actually to the aeroponics. I might be an outlier here but I'm not opposed to aeroponics. I'm not saying I'm for it right now either. I've been in the situation in the last six months where I'm gathering information and I haven't seen an aeroponics production system. And I feel like I need hands-on experience and observation and discussion before making a judgment about that.

And I have, you know, I've seen now more kind of hydroponic and container systems. And I know I'd like to come up with a compromise,

maybe that's a labeling compromise or other, that can foster production of food that uses less resources and less synthetic chemicals. And I'd like to do that in a way that adheres to the principles of the Organic Foods Production Act.

I don't quite see the way there right now but I think there is a possibility to do that. Some of the suggestions around -- well, we'll talk about containers later -- you know, I think there's points there about using materials, reusing materials, maintaining percolation with soil, et cetera, that have a lot of promise.

MR. THICKE: Thank you, Asa.

Harriet has her hand raised. Go ahead, Harriet.

MS. BEHAR: I'm wondering if something that would help this definition would be to eventually define inert material. That's my, that's my comment, that that seems to be what is that inert material we're talking about? It's either roots in water or roots that are in some sort of rockwool, coconut core, perlite. I don't

know what else we'll come up with. And I think some of us feel that that's an inert material and others not.

So I'm just wondering if the definition of inert material might be useful.

I'm done.

MR. THICKE: Okay. Thank you, Harriet.

I guess we've kind of gone a little bit in circles with this with recalcitrance and so on. And when I search, I Google the word hydroponic, basically it means grown in water. And I guess it comes from Greek. Greek, "hydro" is water and "ponos" is work. Water works or something. So it's basically I think the common understanding is that if you're growing with virtually all water it's hydroponic. But that doesn't really seem to be working in this case.

We'll go back and we'll look at it a little more.

I don't see any more hands up right now. So let's move on for now to aquaponics.

And aquaponics is defined here as a recirculated hydroponic system in which plants are grown in nutrients originating from aquatic animal wastewater, which may include the use of bacteria to improve availability of those nutrients to the plant. The plants improve the water quality by using the nutrients, and the water is then recirculated back to the aquatic plants.

And the proposed motion is very simple again: motion to not allow aquaponic production systems be certified organic.

I would like, I'm very interested to hear what the whole board thinks about aquaponics. And I don't see any hands raised yet but I welcome your comments.

CHAIRMAN CHAPMAN: Francis, this is Tom.

MR. THICKE: Do ahead, Tom.

CHAIRMAN CHAPMAN: Can I get a better idea as to the justification for why the Crops Subcommittee would propose prohibiting this form of production?

MR. THICKE: It's because aquaponics is actually pure hydroponics, often without any substrate at all. It's basically hydroponics.

And some aquaculture systems are completely linked and they only use fish waste for their nutrients. Whereas as others are, just are -- I forget what the term is but they use some fish waste and also some liquid nutrient feeding.

So the thinking of the Crops Committee in this is that aquaponics is really just hydroponics using a difference source of nutrients.

I see Harriet has her hand raised, and then Steve has also. Go ahead, Harriet.

MS. BEHAR: I also have concern about the fact that this is a raw manure that is not really treated systematically. And I believe there has been some issue with a recall. I'm not sure what the issue was.

But I feel that it's really unfair to the land-based producers who have to wait three

to four months before being able to apply raw manure to their crops. They wouldn't be able to take the effluent from an aquaponic operation and use it as irrigation water out in their field. So I think it's kind of an unfair playing field to say that because it's right there in the same building and it's floating in the water directly that it would be allowed, whereas it would not be allowed for those in the field operation.

And so I think there's a lot more that needs to be looked at in this system. I think there is a lot of interest in the synergy between the fish and the plants and this kind of symbiotic relationship where one, you know, where the plants actually somewhat clean the water so it can go back to the fish. And I can understand how people are attracted to that.

But I think we do really need to look at the raw manure issue and having it be in line with field- and land-based and soil-based producers are required to do and still carry the organic label.

I'm done.

MR. THICKE: Thank you, Harriet.

Steve Ela.

MR. ELA: Yes. And I would echo what Harriet said, I think, you know, some of that consistency. And I think the Crops Committee, I mean it's one of those things where at this point we'd like to disallow it for organic certification. But in our discussions we've certainly said this is a very fascinating system that, if we could solve some of these problems, you know, we would be open to discussing it in the future and allowing it.

But I think just like Harriet said, the manure issue is probably a big one for me in terms of consistency. And I'd rather see it disallowed for now and then come back and, you know, later on with some, you know, clearer standards on the manure issue and some other things, you know, allow it in the future. But I'd rather not go down the road of allowing it now and then trying to say, wait, this is, you

know, we need to clarify it. I'd rather do it more prudently and thoughtfully without putting the -- without having it already out there in practice.

I'm done.

MR. THICKE: Thank you, Steve. Thank you, Steve.

We have Dan Seitz and then Scott Rice and then Emily Oakley. Go ahead, Dan.

MR. SEITZ: So this is Dan Seitz.

CHAIRMAN CHAPMAN: This is Tom. Just raising my hand, Francis, so you know that my hand's been raised.

MR. THICKE: Oh, Tom. Oh, okay.

Go ahead. You had your hand up first, Tom, go ahead.

CHAIRMAN CHAPMAN: No, no. You can let Dan go ahead. Thanks.

MR. SEITZ: Okay. So to some degree I'm echoing what Steve said. I see this as a prudent motion to pass now in order to avoid the situation where we're actually faced with the

hydroponics where certifiers start to certify the operation and then after the fact we're in the awkward position as a board, and the NOP is in the awkward position of trying to then clarify what are the standards that should be used for this.

So I don't see this as a prohibition. Certainly the aquaponic folks can continue. It's really a question of whether the coveted organic seal can be applied to that. And before that possibility is open, I think we have to be very clear if we -- very clear on what would be the requirements for such a system to be certified organic.

So once again I think it's more to just avoid the messy situation that we're finding ourselves in with hydroponics.

And I'm done.

MR. THICKE: Thank you, Dan.

Tom.

CHAIRMAN CHAPMAN: Thanks. So I'll just go now after the next piece. But so as I

understand it, these operations are already currently being certified and are allowed under the current interpretations by the program. So it's not like we'd be prohibiting something novel that hasn't yet started. We would be prohibiting a practice that has already occurred that the businesses have been built around, with the possibility that we would bring it back again in the future if we did more research.

That's not, that's not a prudent move I guess in my view. We should either, we should have done our due diligence. And if we need to manage the input system for aquaponic growers, similar to how an input system for manure is managed for in-ground grower, there's reason for that. And we should explore that option.

But the wholesale prohibition of them because we haven't done our research when they're already allowed is just not, it's not palatable to me.

That's it for me.

MR. THICKE: Okay. Thank you, Tom.

Scott next; right? Go ahead, Scott.

MR. RICE: Thanks. Thank you.

Tom made the point that I was going to make, but can add to that. Essentially, yes, we have these already in inspection. I think it would not be helpful to pull that back and then allow it. Again, that's not a very sensible way for a business to respond to in terms of how a regulation works.

And in terms of just aquaponics in general, I think it's a system within kind of the framework of hydroponics and fluid-based systems that we talk about that most reflect kind of what we're looking for in my mind for an organic operation, and that's kind of the ideal closed loop system. You know, we like to see that type of resources, input, and nutrients.

So to me it speaks to kind of what, what I look for in the ultimate goals of organic production.

Another good point, I think, is that manure in the regulation is not -- it's

explicitly defined as feces, urine, or other excrement in bedding produced by livestock that has not been composted. And livestock in the regulation does not include aquatic animals. So I just wanted to put that out there as well.

And that's it for me on that. Thanks.

MR. THICKE: Thank you, Scott.

MR. BRADMAN: This is Asa.

MR. THICKE: Yes, Asa.

MR. BRADMAN: Apologies again for interrupting. My computer is not letting me raise my hand.

I just wanted to echo what Tom and Scott said and that, you know, I think Harriet raised this really important point about concerns about manure and food safety and things like that. And, you know, I certainly agree that there should be careful evaluation of that and any rules around that should protect, you know, protect food safety and ensure food safety. And I don't know if that means it's the exact, you know, replication of what we do with land-based

manure, but I agree that that's important.

MR. THICKE: Thank you, Asa.

Next we have Emily and then Ashley after Emily. Go ahead, Emily.

MS. OAKLEY: Thank you.

I wanted to echo what you said earlier, Francis, by the reason that the Crops Subcommittee brought this forward is because we determined these systems to be essentially hydroponic. They are hydroponic but simply with the inclusion of fish tanks from which water is recirculated for feeding. But the majority of the plants' nutrients, if not all of them, are coming from the fish.

So these systems are hydroponic. I think to not disallow them is to create a double standard. Again, I think that we do want to disallow them because they are hydroponic.

I also think that there are definite concerns with the manure issue, whether it's within the regulations manure is defined as livestock or not, it's definitely a raw feces

product that we would definitely want to consider.

I also think that there is an animal welfare component that needs to be addressed if something like this were going to be allowed. And I feel perhaps more strongly that this isn't something that we would disallow now and then come back and look at later. I think it's something that we would disallow now and be very unlikely to come back and change. Just as I think that would be the same for a disallowance of aquaponics or hydroponics.

And I'm done. Thank you.

MR. THICKE: Thank you, Emily.

We have Ashley next and then Lisa. Go ahead, Ashley.

MS. SWAFFAR: Yes. So I just kind of, Scott kind of hit on what I was going to say, but you know I would very much be opposed to bringing something forward that several members of your Crops Committee feel like that might need more information or needs to be looked at further.

There's no, there's nothing that says that we have to bring it forward at this meeting.

If you guys feel like you need more information on aquaponics, I would, you know, -- don't, don't bring a proposal forward that you don't have all the information on.

And then, you know, but I do really like the aquaponics system. I will say that. And Emily talked about the animal welfare component. You know, livestock has aquaculture kind of weaving in the list of their systems so, you know, maybe that could be looked at in the future also.

Thanks. Just a quick comment.

MR. THICKE: I would like to just -- Thank you, Ashley. Since I can't raise my hand, I would like to make a couple points.

One is that we have actually looked for information on fish waste. And we've some conflicting, but very, very little, in fact it doesn't appear that there's been a lot of research on it. And so it's not that we haven't

done due diligence, it's that it's an unknown right now as far as we can tell.

Next up was, I'm sorry, Lisa. Lisa de Lima. Go ahead, Lisa.

CHAIRMAN CHAPMAN: Francis, I have a question about that. Can I ask you before we move on to Lisa?

MR. THICKE: Yes.

CHAIRMAN CHAPMAN: I understand there's a, there's a NIFA grant right now and research against that related to aquaponics and food safety. What, if anything, did the subcommittee think about that information in the USDA?

MR. THICKE: If it's the one that I'm thinking about it wasn't very conclusive. It was very limited research and they didn't find anything in their research. But they didn't, weren't about to make any generalizations that it was -- that they had covered the waterfront on food safety and aquaculture.

Okay. Let's see, I lost my screen

here. Here we go, next up was, I'll just give the order, Lisa and then Harriet and Dave Mortensen. Let's go with that.

Lisa.

MS. DE LIMA: I just want to echo what some of the sentiments that Scott and Asa put forward that I'm definitely open to aquaponics. And if there's additional issues that need to be worked out as far as regulations, I'd rather talk about that and bring that forward.

I definitely wouldn't, couldn't get behind ruling it out at the next meeting without having figured out some of those issues that I realize, Francis, that you're saying you don't have answers to and that you guys have tried to get. But I still wouldn't be comfortable voting to disallow at this point.

That's it for me.

MR. THICKE: Thank you, Lisa.

And then I kind of lost track. There's four of them up there. Who was next, was it Dave Mortensen?

MS. BEHAR: No, it was Harriet.

MR. THICKE: Go ahead, Dave. You haven't spoken yet.

Harriet?

MS. BEHAR: Okay.

MR. THICKE: Okay, Harriet, go ahead.

MS. BEHAR: You want me to go or I can go after Dave.

MR. THICKE: If you want to be very polite, let's let Dave go first.

MS. BEHAR: Okay, I'm being polite.

MR. THICKE: Dave.

MR. MORTENSEN: Thank you, Harriet.

Yes, I guess, you know, and the Crops group has spent a lot of time reading and thinking about this issue, I guess as we all have. I guess the first thing I would say is that, you know, we're talking -- we're not criticizing or saying something should be done as a production practice. Although, frankly, the aquaponic waste issue, whether it's conventionally or organically grown, to me is a

really serious concern.

And, frankly, on the NIFA grants proposal front the only way we're going to actually be able to assess the safety of that program is through some sort of epidemiological approach of studies of systems in place, many of them, as opposed to how we control the experiment of the kind that was outlined in the NIFA grant, which would be like searching for a needle in a haystack in my view.

This, I agree with Emily, we're looking at a system basically of bathing roots in a nutrient solution. There's a growing body of evidence that would argue pretty strongly that plants that are taking nutrients up actively from the soil, that that active uptake also has been a very beneficial way for human consumption of phytochemistry of the shoots and fruits of the plant.

And so that I continue to be concerned about plants grown in a, basically in a nutrient solution, whether it's a fish nutrient solution

loaded with fecal waste microbial communities or a other organically approved nutrient source, it's still bathing roots in nutrients in a way that evidence would suggest alters the phytochemistry of the plant.

I also had the opportunity this winter to visit a aquaponic system. And I guess another concern that I have is the extreme extent to which these systems are dependent on energy consumption. There had been a ice storm that knocked out power to this particular facility that I visited. And within nine hours all of the plants and all of the fish had died due to the loss of power that was powering the pumps, the lights, the aeration systems, the nutrient delivery systems, et cetera, et cetera.

And I found myself thinking, my goodness, this is about as far from an organic holistic system as I can imagine.

So I continue to be thinking of this both from a how are the plants that are grown in these system responding to them but, also, what

is the energy footprint and how holistic is the system in fact? And so I am concerned about those things as we look at something carrying the organic seal.

I'm finished.

MR. THICKE: Thank you, Dave.

I have on my list Harriet next, then Emily, and then Ashley. Go ahead, Harriet.

MS. BEHAR: Okay. So I understand that this has already been approved by certifiers. But this is a system of production that was approved to carry the organic label without standards for that production.

And there is a precedent for this in aquaculture. We did have products that were labeled as organic in aquaculture. We even had, I know of at least one, fairly large and heavily invested operation that used the USDA organic seal on aquaculture products. And then the National Organic Program said, Whoa, wait a minute, this is a system of production that we do not have any standards for. And they declared

that that could no longer occur as far as being able to carry the organic, USDA organic label.

So I think that that really is where we're coming down to here is a unique form of production with its own system. It would be almost like saying, well, we don't have any standards for dairy. Let the certifiers figure out what's, you know, what's organic dairy. I mean, it's a completely separate and unique system of production that doesn't have any standards.

And as we talk, you know, Emily brought up the animal welfare issue. And so, I mean, these are all things that need to be looked at in a holistic way with a clear standard. And through that clear standard we protect the organic label for all things that are labeled organic. Because if one section -- I mean, we have, we have this issue right now with personal care products and things like that, that the meaning of the organic label is somewhat demeaned when there is not clear meaning, not clear

standards, and the consumers are then confused of what is actually organic. And it does kind of bleed over into other areas.

And I know that we are expecting at some point an aquaculture standard. And I believe that that would be the time to then consider aquaponics as well. But, of course, also with the manure issue because it's a human-consumed product.

I'm done.

MR. THICKE: Thank you, Harriet.

Next we have Emily Oakley. Go ahead, Emily.

MS. OAKLEY: I just wanted to address Tom and Scott and I think maybe also Ashley's point about whether or not the Crops Subcommittee felt that we needed more information before being able to bring this forward. And I think other people have also weighed in on this. But I just wanted to reiterate that probably what the case is is that there are some members of the CS who would currently feel comfortable supporting

aquaponics but there are others who would not.

Probably rather than question of people wondering if there's more information that could ever persuade them to accept aquaponics, I think that it's more of a division within the philosophical points of view within the CS. So there's certainly I think those who might tend at some point to want to allow it, and then those who would never want to allow it.

So I just wanted to put that clarification out.

And I'm done. Thanks.

MR. THICKE: Thank you, Emily.

Harriet, your hand is still up but maybe you just didn't take it down.

Tom, did you want to say something?

MS. BEHAR: I just took it down.

CHAIRMAN CHAPMAN: Yes. Sue's had some technical issues so I got a text from her since she's not able to speak on the phone right now unfortunately. We'll work through that problem.

But just to convey something from Sue, the aquatic systems that she's worked with have a three-part septic-like filtering system that removes solids, leaving only nutrients remaining. Most large operations are designed as such.

So it's her opinion that manures from aqua -- concerns around manures from aquaponic systems are not founded. But just adding that little bit into the conversation.

But basically from what I've heard so far -- this is Tom speaking for Tom now -- it doesn't sound like board-wise we have a consensus on this, this issue. So is it the Crops Subcommittee's intent to still bring this motion forward?

MR. THICKE: Probably. I can't speak for the whole Crops Subcommittee. But we don't really know what the vote would be as yet. And I think that we should go on record in my opinion to see what the full board does think on this, and on the container issue as well.

One little comment on the filtering of

the fish waste. Of course I think we all recognize that if you filter the fish waste that the microbes would be in solution. And so that wouldn't really be a -- that wouldn't really prevent any contamination to filter out the waste.

So are there any other comments on aquaculture or should we move on to the containment system?

MS. MOSSO: Yes, I just wanted to put a comment in there about the filtering. It would be completely dependent on the size of the filter as to whether or not microorganisms, bacteria or otherwise, would be in the water.

MR. THICKE: So are you suggesting that they would actually filter out on the micron level the bacteria? Would that -- Are people doing that?

MS. MOSSO: No, I'm not suggesting anything other than you could create a system which would eliminate bacteria or larger organisms beyond solids.

MR. THICKE: Thank you.

Harriet has her hand up.

MS. BEHAR: And that just to me solidifies the need for a standard before -- I mean, if there is a filtration system then it would be in the standard what would be the size of the filter, which types of filters would there be.

I mean, I've heard also of enzymes being used to mitigate pathogens. So, there's a lot to this system. And right now there are no standards. And so there's lots of different ways to do it and every one is viewed the same.

I'm done.

MR. THICKE: Thank you, Harriet.

Sue Baird, welcome to the call. I see you're on now. Go ahead.

MS. BAIRD: Thank you. It's great to be here.

I do agree that there should be standards for filtering out bacteria. But I'm wondering why we cannot apply the same standards

as is dictated by for the microbial presence in dehydrated poultry or other compost systems.

MS. OAKLEY: I'm sorry. This is Emily again.

And just really quickly, dehydrated what? I didn't hear that last word.

MS. BAIRD: The dehydrated poultry or livestock standards that has been stated under the NOP guidance is compatible and can be applied the same as a compost.

MS. OAKLEY: Okay. Thank you.

MR. THICKE: All right. Thank you, Sue.

MR. SEITZ: Francis, I had raised my hand. Dan.

MR. THICKE: Oh, Dan. For some reason the order seems to be getting messed up here on my screen. So if I get you out of order, tell me.

Go ahead, Dan.

MR. SEITZ: Sure. There's just an irony here that I just want to mention that in

the absence of standards you sometimes have different certifying agents, agencies certifying certain practices for which there are not yet NOSB or NOP regulations or guidance. And then once you have a certifier that recognizes a practice, then you have vested interests that are following that.

And every -- a number of people have said, well, once you have these vested interests is it fair to somehow put in a requirement afterwards that may limit what they're able to do or prohibit that process from happening?

But to me it's just kind of strange situation that in a sense the certifiers are creating what you might say NOSB and NOP policy through actions that create vested interests here. And I was under the impression, and I'm obviously mistaken, that aquaponics had not yet been certified. But I imagine that there perhaps are not many yet that have been.

So I just want to offer the caution that in the absence of requirement, as more

operations do get certified and you create more vested interest, it becomes harder and harder to actually come up with worthwhile standards in line with the OFPA and the regulations. And do we want a situation where, in essence, a certification practice then is leading the way?

At least that's how I see it from a kind of legal standpoint.

That's it.

CHAIRMAN CHAPMAN: Francis, this is Tom.

MR. THICKE: Go ahead, Tom.

CHAIRMAN CHAPMAN: Is see that Miles wants to --

MR. THICKE: Go ahead.

CHAIRMAN CHAPMAN: I see that Miles wants to say something. Miles. Can you call on him?

MR. THICKE: Okay, sure.

MR. McEVOY: Hi. Yes, the discussion is very, very interesting. In terms of aquaponics it is a little bit challenging in

terms of how the regulations apply there. You couldn't certify an aquaculture operation under the USDA organic standards at this time or apply the USDA organic seal. But there are organic aquaculture products that are in the U.S. market. And these are produced under foreign standards.

For instance, the EU does organic salmon that's in the U.S. market. And as long as they don't use the USDA organic seal we're not, we're not taking any particular action against that. But there are no U.S. standards for organic aquaculture. So you could not do USDA organic aquaponics in terms of the fish part of the operation at the current time.

There were a couple other things that were said. In terms of the EU arrangement, the EU is in the process of updating their regulations. They've been working on this for many years. It is quite a challenging process. And whether or not they're successful at changing the regulations is yet to be seen. They've had many proposals over the years. So counting on

conversations of what's going to happen I think is premature.

And there are similar types of organic operations that are not in soil in northern European countries that are certified organic under the EU standards. And the EU, U.S.-European Union organic equivalency arrangement has no restrictions in terms of hydroponics, so there's no critical variances or differences there.

And then, finally, one of the beauties about the U.S. organic regulations is that it provides a lot of flexibility in operations to develop systems that are, can be compliant with the regulations. And so certifiers and operations have determined ways of certifying organic beekeeping, honey bee production, mushroom production where there aren't any specific standards. And so that diversity of standards or systems is, they're all in compliance with the USDA organic regulations because they, certifiers, ensure that that

happens, and we oversee those certifiers to ensure that any operations that they certify are compliant with the regulations.

So it does at times lead to some differences in terms of systems that certifiers approve. But all those operations are compliant with the regulations. And the diversity is one of the benefits of the way that the system is set up.

So, thank for listening.

MR. THICKE: Thank you, Miles.

We have two people on deck, Steve Ela and then Dan Seitz. Steve is first.

MR. ELA: Sure. I think, I guess, you know, one of the issues I have and, you know, it comes back to kind of the manure issue and manure's supposed to be applied and tilled in, which obviously we can't do in an aquaponics system. But and I agree while we can create filters or there are filters that would, you know, filter out those potential pathogens, conversely, those same filters are going to be

filtering out the "biological activity" of the system.

You know, if we're removing bacteria, pathogenic bacteria, we're also removing the good bacteria. And I think one of our big debates within the whole hydroponic issue is really what is the biological activity of this system? And so I guess I have real concerns if we're, you know, if we're putting in place filters to remove bad bacteria, then we no longer have a biologically active system which, you know, goes against, goes against the standards.

And I'm done.

MR. THICKE: Thank you, Steve.

Dan, you had your hand raised. I think it went down though. Do you still want to speak now?

MR. SEITZ: It went down. But I had left it raised before so I don't have anything further to say.

MR. THICKE: Okay. Okay, thank you.

CHAIRMAN CHAPMAN: This is Tom.

MR. THICKE: Go ahead, Tom.

CHAIRMAN CHAPMAN: So, Steve, if there's a filter in place for an aquaponic operation that removes harmful bacteria and then, you know, heat-based composting of manure operations where heat is the mechanism by which harmful bacteria is killed, and then that's allowed as an acceptable input, I guess what's the difference there? Why is one practice deemed acceptable and the other one not?

I mean, you're interacting, those nutrients are then later interacting with biology in the system at a later point, whether it's a heat-composted manure or a --

MR. THICKE: I would jump in, Steve.

CHAIRMAN CHAPMAN: Yep. Go ahead.

MR. THICKE: I would jump in in that I think it's a completely different system. Under composting it's biologically driven and it still feels like it's still unperfected. But then it actually re-cultures and makes a very robust culture of beneficial bacteria at the end

of the process. Whereas this is a mechanical system of filtering out. And you could add back in bacteria afterwards if you wanted, but it's not really an ecologically-based system in my opinion.

CHAIRMAN CHAPMAN: So do we have research that shows that the nutrients that then go into the plant area of the system are not culturing bacteria?

MR. THICKE: In the aquaculture?

CHAIRMAN CHAPMAN: Correct.

MS. OAKLEY: You mean aquaponics?

CHAIRMAN CHAPMAN: Aquaponics, yes.

MR. THICKE: In the aquaponics. I'm sorry, yes, yes, yes. Presumably there could be some. Yes, there could be some. But my understanding is that often in these things when you recirculate them, when they recirculate the water they basically kill the ozone, the microbes because too many harmful bacteria can grow in it. And then they re-inoculate with beneficial organisms. I've heard of those systems where

pathogenic ones get out of control.

So it's really different from composting in my mind.

MR. THICKE: Steve Ela, you had your hand up again?

MR. ELA: Yes, this is Steve Ela.

Well, I was just going to respond as well. I mean, this is Steve.

I think, yes, Tom, I agree with what Francis said. I mean, I think, you know, yes, in what you're asking gets back into the fundamental question that we're going to go into on the containers. And I know a number of the board members and, you know, I believe OTA have proposed that, you know, there have to be (webinar interference) some bacterial action that maybe restarts.

But I'd have a real question if we're talking about a, you know, a system that is diverse and resilient and, you know, really goes with those organic standards in that case.

MR. THICKE: Thank you, Steve.

MR. ELA: Go ahead, Francis.

MR. THICKE: Harriet has her hand up.

MR. ELA: Oh, I'm sorry. Okay.

MR. THICKE: Harriet.

MS. BEHAR: All of this discussion just reinforces that we need a standard. And I, I appreciate Miles', you know, discussion of mushrooms and beekeeping and such. But I would also remind him that the National Organic Standards Board has provided standards for those types of systems of production because we wanted to have that consistency between. And, of course, I believe he knows how much I, I really would love to see the apiculture standards because there really is a huge difference between the various certifiers and what they approve for forage zones and inputs and the whole nine yards.

So, I think actually all this discussion about aquaponics and whether or not it's biological, and animal welfare, and manure, and all those things bring up that it is a unique system of production that would need standards.

And I'm for that discussion. But I think that having an aquaponic standard would come after having an aquaculture standard in place.

I'm done.

MR. THICKE: Thank you. I don't see any hands up.

Tom, did you speak up?

CHAIRMAN CHAPMAN: Yes, I did. But I can stand off. Go with Ashley and then we'll be okay with that.

MR. THICKE: Oh, okay. I see Ashley's hand came up.

MS. SWAFFAR: Yes.

MR. THICKE: Go ahead, yes.

MS. SWAFFAR: Sorry. I'm taking notes here.

So, Harriet, I think that you made some really good points about the standard. And, you know, that just brings that around to the point that all of us made at the beginning of the call as, you know, I'm not sure why the Crops

Committee did bring this forward because it sounds like there's quite a bit of support for aquaponics on this current NOSB board. So I'm just a little maybe wondering why you would bring it forward if you know that the motion might possibly fail to prohibit.

And maybe going forward have you all thought about next steps on aquaponics, after thoughts?

MR. THICKE: Okay. Well, there are several people's hands up. And I have Tom is next and then Emily and then Sue.

Go ahead, Tom.

CHAIRMAN CHAPMAN: So I'm somewhat echoing what Ashley just said. And I agree with Harriet that, yes, standards are needed. And I really was hoping that we would be debating those on this call or talking about what sets of standards would we be putting in place for an operation like an aquaponic operation.

But I'm not really there for a direct prohibition of it without discussing standards.

Given the number of operations already served by it and statements from the program that these operations can be compliant with the program as it's written today.

Whether or not there's NOSB recommendations for other types of production, those are just recommendations at this point and are not standards. They're not standards until they go through the full rulemaking process and public comment through the Federal Register. And that hasn't occurred for mushrooms or other types of operations.

So, I do hope at some point we can move this conversation forward. I'm curious to know if the Crops Subcommittee would move on to looking at standards for aquaponic operations if this motion fails at the fall meeting, because it seems at that point that there's no consensus to prohibit these practices. These practices are already allowed under the current rules. And that it would be beneficial to provide more, more structure to those rules through individualized

standards.

So that's a question for you guys.

The next piece, though, just a recommendation from my standpoint is, you know, prohibiting a practice already in place is economically costly. And that piece of review that occurs in the later steps beyond the NOP review. Just a fact of life when it comes to rulemaking and that's a piece of the rulemaking review. And so now as we look at these justifications for disallowing these types of production, you know, the Crops Subcommittee should come well researched and cited with research.

If food safety is a concern, you know, I would like to see a lot of that research in citations in the recommendations. And, you know, if there are concerns around how these differ from in-soil production practices, then those should also be well, well cited and outlined in the argument to deploy these practices.

That's it for me.

MR. THICKE: I would like to jump in real quick if I could, in that I think, for example, with animal welfare standards the economic analysis show there would be a huge economic problem for these huge chicken operations that do not have access to outdoors. But the NOSB recommended anyway, took it forward anyway, now it's come up at USDA, but there are consequences sometimes to those kind of things.

And basically why the Crops Committee that wrote the document put that -- opposed aquaponics just simply is that it is hydroponics.

Let me look at my list here. Who is -- Emily is next.

MS. OAKLEY: Yes. Thank you, Francis.

I was actually going to reply to Tom and Ashley about I would not be in favor of trying to propose recommendations to support aquaponics if this did not pass, the prohibition didn't pass in the fall, because in my view with hydroponics I don't think the inclusion of fish in a tank makes the system that much more

innovative or more in keeping with the organic standards.

I think as I said before, on Crops Subcommittee calls the organic principles are based on the understanding that plant nutrients are delivered through the soil. That's why we have so many different standards around cover cropping, crop rotations, manure applications, root conservation, tillage, et cetera. The many things that farmers engage in, many of which are spelled out in the regulations based on the premise that plants grow in the soil and derive their nutrients from the soil.

But for me the fact that fish are added into the system, while it might be an interesting option for other people, does not make it an organic system and does not meet the standard.

So I, I also wanted to point out that in the 2016 April meeting in D.C. there were some standards -- or some statistics, sorry, from the NOP about the number of certified operations

under these different ponic systems and container systems. And as of the 2016 data that Miles gave us, there were only 22 certified aquaponic operations, which is a really incredibly small number of the overall operations that, you know, are certified organic under the USDA.

And I also just wanted to point out the time which is that we have about 40 minutes left in this call. So we might want to start moving towards the container discussion so that we have plenty of time for that as well.

Thanks. I'm done.

MR. THICKE: Thank you, Emily. Good point.

We've got two up. And then maybe we should move to containers after that.

Go ahead, Sue.

MS. BAIRD: Yes.

Thanks, Emily, for that time reminder. So I'll keep this short.

At least for aquaponics I do feel like there is an inherent difference in the delivery

system. I don't feel like we are addressing, or at least in my mind we're not addressing the fish or the fish itself, we are addressing plants that are produced by the fish.

MR. THICKE: Thank you, Sue.

So let's move on to the container production systems. And I just want a little, give a little background here before I read the proposed motion. And that is that the Crops Subcommittee is looking for a compromise in the middle ground between requiring all organic crop production to be in the soil, connected to the Earth's surface, as is the standard in most European countries today.

And a number of the Crops Committee really would prefer that.

On the other hand, we have people on the Crops Committee and on the board in general that would allow 100 percent organic production to be certified organic, 100 percent hydroponic, yes.

So we've come up with a compromise

that we think is in the middle. And I think we can talk about where these pieces came from, but there's three parts to the compromise. And let's see, I'm going to read the motion here.

The proposed motion is that for container production to be certified organic, a limit of 20 percent of the plant's nitrogen requirement can be supplied by liquid feeding. A limit of 50 percent of the plant's nitrogen requirement can be added to the container after the crop has been planted. And the container substrate must be at least 50 percent soil and/or compost by volume.

And for perennials, the soluble nitrogen feeding limit is calculated on an annual basis. And transplants, ornamentals, herbs, and aquatic plants are exempted from these requirements.

It's kind of long. And we can look at all the pieces. But maybe we should, I should just open it up first of all for other comments from other people. If anybody wants to raise

their hand. Or else I can go on.

Steve had his hand up. Go ahead, Steve.

MR. ELA: Yes, so this is Steve.

So I think, you know, what I'm coming down to on this, and I know it's, I know there are, you know, things for us, you know, as you said we have both interests reflected on the board. And that's great, but --

MS. ARSENAULT: Hey, Steve, I think we just lost you. If you could adjust your headset or phone. Yes.

MR. ELA: Okay. Is that any better?

MS. ARSENAULT: Better. Thank you.

MR. ELA: Okay, thank you.

But it comes down to pushing the envelope a little bit. And I think, you know, we could have straight hydroponic systems, we could have straight soil systems. Where I really, you know, like I hear people saying they can't have any more than, you know, 10 percent soil or compost in the container, yet then I hear other

people testify that theirs, you know, have much higher level, 50 percent, 60 percent, 70 percent soils, and they're doing it very successfully.

So, I see the NOSB in general part of our job is to push the envelope of what is good organics. And I think we, I think we need to push this envelope. And so I support this compromise. It's not what either side wants. But I really feel like we, you know, we push the envelope with antibiotics in tree fruits for fire blight and, you know, that has cost me personally by banning that.

We push the envelope with animal welfare. We push the envelope with other things. And I really feel strongly that we need to, even though this is a compromise I think it's pushing the envelope from straight hydroponics. And I think, you know, the straight soil people are giving up quite a bit as well.

I'm done.

MR. THICKE: Thank you, Steve.

I don't see any other hands up. I

would like to just cover a few of the points, the precedent for them. For example, the 20 percent maximum liquid feed of nitrogen, Chilean nitrate is now on 602 which allows no more than 20 percent of the crop's total nitrogen requirement to come from sodium nitrate. And it's a very soluble material, of course, this sodium nitrate.

And what's true actually is that some of the materials being used in hydroponic production are as soluble. For example, hydrolyzed soybean meal is advertised as completely 100 percent soluble. And the nitrogen level is similar to sodium nitrate at about 16 percent nitrogen. And so we have a precedent of allowing only 20 percent of the nitrogen needs to come from this highly soluble system, organic system.

So that was what the Crops Subcommittee used for the basis for that recommendation.

Unless my screen is not working, nobody's raising their hand. I thought we'd have

all the hands up for this one.

CHAIRMAN CHAPMAN: This is Tom, Francis. I had a question specifically about that.

Chilean nitrate, the precedent, I disagree with your precedent I guess. The precedent that was for the NOP to review, for the NOP to review the substance and propose they get listed as a prohibited natural substance and limited to just 20 percent.

That's not what you're proposing here. You're proposing limiting a practice altogether as opposed to if it was analogous to that situation it would be proper for the Crops Subcommittee to petition, or an individual of the public to petition, or the Crops Subcommittee to propose that soluble soybean extract, or whatever it's called, hydrolyzed soybeans, get added to that same list as a prohibited natural and limited in how much it can be used.

But the precedence isn't around liquid feeding of plants, it's around 1600 substance.

And so the precedence would then be to follow the previous boards and add it as a prohibited substance, not as not prohibit the practice altogether.

That's my thought.

MR. THICKE: I have to disagree, Tom, because soluble nitrogen fertilizers, the synthetics, are not allowed in general. And Chilean nitrate is unusual in that it is soluble. And so that is why it is not -- that's one reason. And also it's a high solvent. But that is a reason for not allowing it.

And it's a very similar kind of a situation where you have this very soluble kind of a material going into the plant, into the hydroponic system. And we use nitrogen because many of the regulations, the European regulations and such, will limit the amount of liquid feeding in general. And that is very complicated, because some nutrients like boron and micronutrients are needed in higher amounts.

So, and nitrogen is kind of an

indicator nutrient in the soil in that if you have nitrogen working in your soil cycling and being produced out of the organic matter, in organic material, then you probably have a very robust kind of a microbiology going on in your soil. And we thought also nitrogen would be easier, one nutrient would be easier for certification and enforcement.

I get that the solubility factor that it doesn't mimic a natural ecology of an organic system that is important that we were looking at.

CHAIRMAN CHAPMAN: So, Francis, I hear you. But the mechanism used wasn't to put a prohibition in the standards for sodium nitrate, it was to put it in the material addressed in 602.

So, I guess I question why the Crops Subcommittee wouldn't consider putting hydrolyzed soybean meal in 602 instead of prohibiting the practice of liquid feeding.

MR. THICKE: I come back to the principle, Chilean nitrate is the only material

really that has been used. Well, now, now I guess the hydrolyzed soybean meal can be used in the soil.

And that's one reason why we also looked at having a maximum amount inputs that could be done, put into the container after the crops was planted because one could still put highly soluble material on the container and then water it into the system. We know that when standards are set that many people will push it right to the limit and find the loophole that will allow them to do something that may not even be intended by the rule.

So this is just to shore it up and to make it as a robust, ecologically-based soil system.

We have two more hands up. Joelle first and then Dave Mortensen.

MS. MOSSO: Yes. Thanks.

I just wanted to kind of go, you know, and have my voice heard here. The Crops Subcommittee is proposing this but we're also

going to be putting a minority view on this document that comes forth. So as a kind of caution, word of compromise, although I do realize and recognize that the soil group has put forth a lot of compromise from what they would necessarily go towards people who may be more inclusive of hydroponic systems.

I did want to make sure that, you know, the public heard as well as the larger NOSB that a minority view does exist. I think it's reflective of the diversity that we see within the all stakeholders of the organic system. And I think we should be speaking about that in addition to just what we're bringing forth, especially in regards to that we're bringing forth the Crops Subcommittee neighboring forces proposal, potential proposal. And there's a good likelihood that in the larger context of the NOSB it will not pass and status quo will be maintained.

So I do think rationales are great to be heard. I also think that we need to be

cognizant of that as well.

MR. THICKE: Thank you, Joelle.

Dave Mortensen.

MR. MORTENSEN: Yes. I, you know, this issue of how much of the liquid fertility would be delivered, you know, we've been having probably, well certainly since the Denver meeting and way before that. For those that are not new on the board like I am, this has been discussed in great detail.

One of the things that was pointed out, I believe at the Denver meeting, and certainly has been on a number of the phone calls was, and I don't know that it's helpful to say I'm pro this or pro that group or whatever, but the point was made that we shouldn't be bringing forth regulations on the liquid feeding side that are not any more restrictive than are the regulations on soil-based systems.

I think that was the logic that led us collectively to be discussing a compromise that limits the liquid feeding in a way that's

consistent with limitations on feeding of crops in the soil and not putting in there, you know, handcuffing liquid-based systems. So that at least in terms of the threshold, that's where we were coming from with that. At least that's how we settled in on that as a group.

The -- What was the second thing I was just thinking in response to Joelle comments? I, it's left me for the moment, so I'll come back.

But at least on the first part, that, that issue of this threshold was it was a compromise that was deliberately set and debated based on the comments by some that we shouldn't be putting undue restrictions on the liquid-based systems. And that's what their point of view reflects.

I guess, actually, the second point was that actually on one of our recent calls, I think it was two subcommittee calls ago, the point was made that don't, don't have a proposal come forward that doesn't have multiple layers of motions in the proposal. And that was one of the

reasons why this proposal has multiple motions and why it is that they're ordered in a way that we're looking for identifying where we have common ground and consensus and get to more issues where we have less agreement on those.

So, again, a deliberate attempt was made to come forward with a multi-motion proposal. And that's why it looks the way it does.

CHAIRMAN CHAPMAN: I have a question for Dave. This is Tom.

MR. THICKE: Go ahead, Tom.

CHAIRMAN CHAPMAN: From what I heard from what Francis read, and maybe I'm wrong, but it was about container, the 20 percent nitrogen input would be limited to container production, so it would not be applied to field crops. And so it's not what you're saying that it's held equally across the board.

So, did I mishear, Francis, the way you read the proposed motion?

MR. THICKE: There was some, there was

a motion that is written. It's not written for in-ground. Although there's been discussion about that, that some have said we could have the same standard for in-ground that we have for container production.

And it's very true that many soils are getting a lot of liquid feed and would not be able to meet this standard. And so I think that's something we may want to look at in the future is should a standard like this be applied for in-ground growing? And, of course, that would allow you would want to give time for those growers to get their soils in shape and working so that they could meet that standard.

However, it's true with containers that you have more flexibility because you're creating your own substrate, unlike if you have a 40-acre field out there that's very sandy and has very little organic matter. To change that field is very difficult and takes time. But a container, you're creating your substrate on the spot and so you could more easily meet a standard

than the field grower.

Next we have Harriet and then Emily.

MS. BEHAR: Okay. So, this container standard was to allow some production but recognize that biological activity in the soil is where we prefer to see most of the nutrient transfer to plants occur. And I, I'm hoping that the minority opinion will have something to us in a timely manner so we would have chance to look at it in time to have some discussion before our proposals are due to put up on the docket.

So that's just asking the minority to, you know, work with us and try to get something to us soon.

This is also a lot kind of based again on the European Union. I guess I'm just going to reiterate again that we're not just pulling this out of a hat or being arbitrary in our dislike of hydroponic operations carrying the organic seal. This is kind of something that is seen around the world as an issue. And we, we are trying to recognize that there are operations currently

here in the U.S. that are doing hydroponic and are certified as organic.

But there's a question of how that all happened and why that all happened. So, I understand there may be some economic impact.

The other thing that I have been doing is talking with compost makers. And my understanding is that the weight or the bulk density of the compost that might be required in a 50 percent soil or compost based substrate would be too heavy to make it practical.

And I specifically was talking with Purple Cow Organics, and then with some other people. I was at a field day where people were talking about compost and making compost. And then this is, and also John Biernbaum from the University of -- from Michigan State who was on the Task Force, the Hydroponics Task Force, have all told me that producing nutritionally balanced and acceptable compost can be done so they have less bulk density and less weight. This is not rocket science. It can be done right now.

And so I think at least that issue I hope we can not continue to talk about that because there is compost that can be used.

I'm done.

MR. THICKE: Thank you, Harriet.

And I wanted to quickly interject on this topic that about the percent, 50 percent and 20 percent, that the USDA Hydroponics Task Force, the subcommittee that was following the 2010 recommendation, made that recommendation.

The first recommendation is that all organic crops should be grown in the soil. And then they said if that is not going to be the case then under containers that there should be a limit, a 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.

So those recommendations come directly also from the USDA Hydroponics Task Force.

Emily, you were next. And then we have Ashley and Scott and Sue.

MS. OAKLEY: Thank you. I just wanted to make a clarification to something you had mentioned earlier, Francis, that I think the word you said that there might be many soil systems that are applying a large amount of liquid fertility.

And I think I obviously can't speak as an expert to this, but of the many, many family-scale organic farms that I visited, I would say that I have not visited any in which liquid fertility added either through fertigation or feeding after the crop has been planted forms a large percentage of the crop's fertility needs.

Maybe in a desert environment or in some sandy or some suboptimal conditions people are applying large amounts of liquid fertility in the soil. But I think the whole notion of the organic regulations and principles are that we work to build our soil over time.

As a farmer, the two things that I tell people who come to my farm for tours or who see me at the farmers' market and have question

is that our two biggest challenges organically are weed control and building up soil fertility. Those are things that take the longest amount of time and the things that we have the long view on.

So, I do think that there are a majority of organic farmers going in the soil who are working on building soil fertility over time and not relying on outside inputs in liquid form for their crops' needs.

But I also just wanted to say that I don't know if people remember at the spring meeting in Denver one of the blueberry container growers who spoke, I believe from Chile, I asked him a question about his ability to incorporate a 50 percent soil or compost into his containers. And he said that, yes, he thought that he would be able to do that.

And I know subsequent people testified that that might not be possible for them. But I, I agree with this notion that Steve brought up that we want to push people to be adhering to the

standards. And the principle of organics, as I've said many times before, is based on soil.

So I hope that if we have an agreement that we can agree on with the 50 percent soil/compost in the container, that even some of these liquid inputs that people are concerned about needing in large quantities would be diminished because the plant would be getting a good percentage of its needs from the soil or compost within the container.

And that's it. Thanks.

MR. McEVOY: Francis, Tom, point of clarification.

MR. THICKE: Yes.

MR. McEVOY: On the Task Force, the Hydroponics Task Force they didn't have any recommendations, just a number of different ideas that were within the two different subcommittees of that Task Force. And the one subcommittee that was looking at kind of the pro soil component, they did have that idea. But there were many other ideas that were in that report.

But there were no recommendations from the Task Force.

MR. THICKE: Okay. Yes, Miles, perhaps that was right, it wasn't a formal recommendation. But it was stated as I quoted it.

MR. McEVOY: Yes, it was an idea that was in one part of the report. And there are many other ideas in there.

MR. THICKE: Okay. Next I had Scott.

MR. RICE: Okay.

MR. BRADMAN: After Scott, this is Asa again. I can't raise my hand on the computer.

MR. THICKE: Okay, that's good.

MR. RICE: Yes, this is Scott.

I, I just wanted to touch back on the -- to clarify that this would be speaking specifically the limitation of liquid feeding is specific to container, or is it for across the board for all producers? I think I'm hesitant to have, you know, two different standards on that. And if we're going to be limiting that feeding,

then there's a portion of our community who grow in the soil who have not been necessarily paying as close attention to this as maybe the hydroponic growers.

And just to keep that in mind as we set limitations.

And then, secondly, also a concern I've expressed before is that we, we create a threshold in terms of that 50 percent soil or compost. But perhaps that's not necessarily serving the function or the purpose in these particular systems but just maybe a check box. Just keep that in mind as we bring this up.

MR. THICKE: Okay, thank you, Scott.

Asa.

MR. BRADMAN: This is Asa.

I think on this proposal I kind of fall a little bit closer to where Joelle is on the requirements here. I mean, I would like to see more flexibility in it.

I mean, I've said before I'm not opposed to hydroponics but I'd like to see it

done in a way that's, you know, consistent with good ecologic and, you know, principles and, again, minimizing carbon footprints, minimizing use of synthetic pesticides, that sort of thing. And I kind of transfer that to the container arena as well.

And, again, a limitation of 20 percent on external feeding, I'm not sure if that would really apply to perennials. And, again, if the materials are really -- if we all agree that they're certified organic, I don't think the limitation should be there in the way that they're listed here.

Again, I know there's other issues with container production and concerns about erosion. And I think there are good points there. And I'd like to see more discussion and evaluation of that.

But I guess I want to I guess see a little bit more flexibility here.

MR. THICKE: Okay. Thank you, Asa.

Next we have Sue Baird. And then --

MS. BAIRD: Yes. Hi.

MR. THICKE: Go ahead.

MS. BAIRD: Can you hear me?

MR. THICKE: Yes.

MS. BAIRD: Am I on? Okay.

I wanted to address first of all Sue's contention that we are here to push the limit. And I'm not sure that I agree with that totally. I think we're here to enforce regulations and to make sure that our, our proposals adhere to the regulations.

She specifically cited the use of the streptomycin antibiotics in production, and that had been clearly from the beginning stated there would be no antibiotics in organic production. So I'm not sure that this -- that point really applies here.

The second point I wanted to point out, this goes back, and I may be wrong, but I think historically that the limitation on Chilean nitrate is not so much on the use of the liquid nitrogen flowing and being added into the system,

but I should have looked this up but I really think that historically it was a result of the concern for that batch that only lives in the Atacama Desert. And they were addressing the environmental issue more than they were the use of the nitrogen being added to the soil.

Again, that's just in the back of my mind. I did not research that, and I apologize for that.

Thirdly, Harriet states that she had John Biernbaum. I would really like to see some of his research. Because when she quoted him, she said that (unintelligible) intended for containers. And she also quoted that --

MS. ARSENAULT: Sue, this is Michelle. We're losing you a bit. If you could get closer to your phone. Thanks.

MS. BAIRD: Okay. Can you hear me better now?

MS. ARSENAULT: Much better. Thank you.

MS. BAIRD: I'm sorry.

The quotes that she quoted when she sent the email said that they were working on a compost that would be lighter and could be doable for container growing. Also stated that large media companies are working on composts that would weigh less to make it be able to work, and she said specifically for legal marijuana growing industry.

I would like to see some real research that says that these lighter composts are doable for containers before I would feel comfortable in dictating a 50 percent soil or compost in the container growing.

That's it.

MR. THICKE: Thank you, Sue.

I just suggested that you look, I sent a couple of files from John Biernbaum that went into quite a bit of detail on that. You might find that in your inbox.

MS. BAIRD: Oh, thank you.

MR. THICKE: Next was Ashley.

MS. SWAFFAR: Hey, guys. Sorry.

I just wanted to go over some things that Harriet had said that feels like a minority opinion seeing that we've about got that finalized we think. Maybe by the end of the week we could get you kind of what, what we're thinking on that.

And then I just want to say, you know, I can't support limiting that 20 percent nutrient and then requiring 50 percent soil or compost. There's a lot of container producers that can't get anywhere near that. And, you know, I really support the systems that they have and feel that they are inclusive of our organic standards.

So I can't support the system -- or, sorry, I can't support this, your motion.

MR. THICKE: Thank you, Ashley.

Lisa is up next, and then Harriet, and then Emily.

MS. DE LIMA: I'm on the same page as where Asa was. Looking at the different requirements I'm not ready to -- I mean I'm open to hydroponics and so I don't think I could get

behind this.

But I know we don't have time on this call since we've got 10 minutes left. But I think there's some other areas that we haven't really gotten a chance to talk about where we might find more commonality like just, example, artificial lighting, and then dealing with containers and, you know, what the requirements would be around recycling those containers and those kind of topics.

I know we're getting down to the wire having to get things into the program if we want to do something, if we want to do something this fall. But I would like to see, I'm just wondering if you guys have discussed any of that on the crops calls?

MR. THICKE: We have, Lisa. And we have some, some suggested proposals in the works that we could bring forward on those issues.

MS. DE LIMA: Okay. Thank you.

MR. THICKE: Okay. Thank you, Lisa. Harriet was up next, and then Emily.

MS. BEHAR: Yes. And so thank you, Francis, for bringing up the information from John Biernbaum. And I was -- but since that has come out I have talked directly with compost makers who can produce compost in, you know, eight weeks, ten weeks that would -- at least that's what they tell me.

And I could, I have the person's card who said that to me. And I can ask him to send us more information on that. But I believe it's not a difficult technology to do.

And then in answer to Joelle, yes, the Crops Committee has a discussion document that addresses artificial light, recycling of the pots and the vegetative matter and the substrate, as well as -- what's the third? I have a third thing in there. Somebody help me.

Francis, what else did I have in my proposal, my discussion document? Sorry. It's a long call.

MR. THICKE: Sorry, I was distracted.

Oh, you were also talking about

mulching systems; correct?

MS. BEHAR: That's right. The use of petroleum-based mulches that don't get removed at the end of one season. Many of these container systems lay down the woven petroleum-based landscape clothes and leave those down for many years and completely cover many acres. So I've tried to address that situation as well.

I'm done.

MR. THICKE: Okay. Thank you, Harriet.

Emily.

CHAIRMAN CHAPMAN: Francis, this is Tom. May I be after Emily?

MR. THICKE: Sure.

MS. OAKLEY: Pardon? Did somebody say something?

MR. THICKE: Emily, you're next, yes.

MS. OAKLEY: Sorry. The call, I got dropped out of the call but I'm back on. So, sorry about that.

Is it my turn?

MR. THICKE: Yes, it is your turn.

MS. OAKLEY: Sorry about that.

I just wanted to not put anybody on the spot, but if there's anybody that hasn't spoken and wants to, there are a couple of people in particular who we haven't heard from on the container proposal in particular, or potential proposal in particular. And I was just wanting to give them the chance to weigh in if they wanted to.

A-dae and Ashley, I don't want to put you on the spot, so if you don't want to weigh in, please don't. But I also just wanted to be sure that you had a chance to share your thoughts if you wanted to.

And I'm done.

MR. THICKE: Okay. No more hands are up.

I just wanted to, I usually get a real quick -- Oh, Tom, I'm sorry. Yes, go ahead.

CHAIRMAN CHAPMAN: Yes. Yes, thanks.

So I mean mine somewhat dovetails with

what Emily was asking for. But I did hear Ashley and I thought she, she opposed it from the comments I heard earlier.

But it sounded like for me, again, we don't -- there's not enough votes here to pass this concept as it's written, from what I heard from the discussions. So my question back to the Crops Subcommittee is what's the plan?

Are you going to bring this forward as is? Or will you guys, you know, take it back and consider something that could get the consensus of the board?

And if it's not, then what's the plan, you know, following if this does not pass at the board level?

MR. THICKE: Well, the Crops Committee will certainly talk about what happened today. There seems to be a difficulty that there doesn't seem to be a middle ground that's acceptable. It seems that on the hydroponics side that there doesn't seem to be much give. And the soils advocates have gone from growing in the ground to

reaching a compromise position.

So, it looks like we have to compromise and support hydroponics. And some of us at this point can't do that. But we'll look back at what has been talked about and see what we can come up with.

I just wanted to clarify something. Miles said that the Hydroponics Task Force did not make a recommendation.

I guess that's correct. I -- that's probably a legal thing. Because I just came back and, quote, they said "we suggest a 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." And they gave a lot of reasons for it.

So, they didn't make an official recommendation but they certainly strongly suggested it.

CHAIRMAN CHAPMAN: Francis, that was one subcommittee of the Task Force; correct? Not

the full Task Force?

MR. THICKE: That is right. I thought I mentioned, that was the one side the soils side of the Task Force; exactly.

And that's where we're back to this thing again where we really don't seem to have a middle ground. We seem to have two sides here. And, frankly, as I said, I think the soils group is compromising to a great degree. But I don't see any sense of compromising on the part of the hydroponics advocates.

CHAIRMAN CHAPMAN: Yes. So, Francis, real quick.

MR. THICKE: We have to keep it -- Yes?

CHAIRMAN CHAPMAN: Yes, real quick, we have four minutes. We can take a few comments but then you'll need to wrap it up from there because we do need to stop at 3:00 o'clock sharp.

MR. THICKE: Sounds good, Tom. Thank you.

Steve, go ahead.

MR. ELA: Sure. And I think, Tom, I was just going to echo what Francis said. I mean, I wish, I wish we could see a compromise that would be passable. And it seems like there really are two sides on this, and some people in the middle, but it's a tough one.

I mean, I, I don't think any of us have seen a compromise that, you know, that a 10-person majority of the board supports that. And so it's real enigma. And I'm not sure how we -- I'm still very uncomfortable that we don't, that we continue with the status quo because I think we have certifiers that don't certify operations, and certifiers that do. And that was not the point of the NOP.

But I think I'm, you know, I'd sure like to see what the compromise is that, you know, ten people can support because I just, like Francis said, it's just not -- it hasn't popped up yet. If it had, I think we would, you know, a lot of us would, would go for it because we need to crack this nut somehow.

Carry on.

MR. THICKE: Thank you, Steve. Thank you.

And just to summarize, the Crops Subcommittee will certainly look at everything we've just talked about today and see, and see what we can do to try to find some ground that we can all agree on.

I'll turn it over to you, Tom. You can wrap it up.

CHAIRMAN CHAPMAN: Yes. Thank you, Francis. I appreciate your time, the time of the Crops Subcommittee, and all the members here, as well as the public listening in.

Clearly this is not an easy subject to resolve. This has been on the board's agenda since 1995 in some form or another since the board's been meeting. So it's not surprising that it's difficult to find compromise. And I do appreciate the Crops Subcommittee's hard work in attempting to find something to bring forward.

With that, we'll conclude this

meeting. Again, thanks everyone for participating. And again, this was just a forum to facilitate a public discussion of the full board, a transparent discussion of the full board. Any formal notes or whatnot will not appear in the forum but will occur in the subcommittee to bring proposals going forward for the full board to consider. And at that time they would be available to the public for comment.

And we look forward to hearing your comments and taking this discussion further at the full board meeting in the fall.

Thank you, everybody. This meeting is now adjourned.

(Whereupon, at 2:59 p.m., the web conference was adjourned.)

T

C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Web Conference

Before: USDA National Organic Standards Board

Date: 08-14-17

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