

Formal Recommendation
From: National Organic Standards Board (NOSB)
To: the National Organic Program (NOP)

Date: April 2015

Subject: Methionine Annotation Change

NOSB Chair: Jean Richardson

The NOSB hereby recommends to the NOP the following:

Rulemaking Action: X

Guidance Statement:

Other:

Statement of the Recommendation (Motion #1):

Motion to amend the listing for methionine at §205.603(d) as follows:

DL–Methionine, DL–Methionine—hydroxy analog, and DL–Methionine—hydroxy analog calcium (CAS #'s 59-51-8, 583-91-5, 4857-44-7, and 922-50-9) -for use only in organic poultry production at the following maximum average pounds per ton of 100% synthetic methionine in the diet over the life of the flock: Laying chickens – 2 pounds; Broiler chickens – 2.5 pounds; Turkeys and all other poultry – 3 pounds. Motion passed.

Rationale Supporting Recommendation (including consistency with OFPA and Organic Regulations):

The revised annotation allows poultry producers to adjust the amount of Methionine in the feed ration to meet the demands of the birds at different life stages, while still limiting the total amount of Methionine that can be fed over the lifetime of a flock. The previous step down rates approved by the NOSB have lead to evidence of Methionine deficiency in poultry flocks. Deficiency of Methionine leads to poor immune system development, poor feathering, feather pecking and cannibalism. Poultry producers have indicated that development of alternatives to synthetic Methionine have still not reached a stage of commercial availability. OFPA Criteria: Essentiality

Committee Vote:

Motion to accept the amendment as stated above

Motion by: Tracy Favre

Seconded: Jean Richardson

Yes: 10 No: 4 Abstain: 0 Absent: 1 Recusal: 0

Motion passed

**National Organic Standards Board
Livestock Subcommittee
Synthetic Methionine (MET) in Organic Poultry Feed Proposal
Revised January 31, 2015**

Summary of Proposed Action

The Livestock Subcommittee proposes to revise the current allowance of synthetic methionine (MET) to read:

DL- Methionine, DL- Methionine - hydroxy analog, and DL- Methionine - hydroxy analog calcium (CAS #'s 59-51-8, 583-91-5, 4857-44-7, and 922-50-9) - for use only in organic poultry production at the following pounds of synthetic 100% Methionine per ton of feed in the diet, averaged over the life of the flock: Laying chickens - 2 pounds; Broiler chickens - 2.5 pounds; Turkeys and all other poultry - 3 pounds.

The Livestock Subcommittee would also like to propose that the NOP develop guidance for Certifying Agents and industry on how to calculate and verify the use and allowance of synthetic MET expressed as an average: pounds of synthetic 100% Methionine per ton of feed in the diet over the life of the bird.

Introduction

The current organic standards allow for the use of synthetic MET for use only in organic poultry production at the following maximum levels of synthetic MET per ton of feed: Laying and broiler chickens—2 pounds; turkeys and all other poultry—3 pounds.

The allowed rates represent “step down” levels that were recommended by NOSB in April 2010, codified in a final rule on September 19, 2012, and went into effect on October 2, 2012.

NOSB recommended the step down rates in order to balance various interests including: (i) providing for the basic maintenance requirements of organic poultry; (ii) satisfying consumer preference to reduce the use of synthetic MET in organic poultry production; and (iii) motivating the organic poultry industry to continue the pursuit of commercially sufficient sources of allowable natural sources of MET.

However, in the attempt to balance interests, the 2010 NOSB recommendation included an allowance for synthetic methionine expressed as a total maximum limit of pounds of MET per ton of feed, while the Methionine Task Force (MTF) July 2009 petition requested that methionine rates be expressed as an average over the life of the flock. The rates expressed as a maximum limit do not address MET demands when laying chicks first come into production. Further the MTF has brought it to the Livestock Subcommittee’s attention that the step-down for broiler chickens constituted a higher percentage decrease than for other poultry categories.

In the NOP Proposed Rule published in the Federal Register on February 6, 2012, the NOP recognized that on April 8, 2011, the MTF submitted a new petition for revised maximum allowable levels of synthetic MET expressed as an average per ton of feed over the life of the bird as originally requested in the 2009 petition. As stated in the preamble to the Proposed Rule:

“The NOP anticipates that the NOSB will consider this petition at a future meeting. In the meantime, the NOP believes it is necessary to move forward issuing this proposed rule to

address the April 2010 NOSB recommendation. This is necessary to prevent any gap in the allowance of synthetic methionine in the diets of organic poultry due to the current expiration date of October 1, 2012.” (Federal Register/Vol. 77, No. 24/Monday, February 6, 2012 pg. 5719).

This NOSB proposal addresses the petition submitted by the MTF on April 8, 2011.

Background

The NOSB initiated a review of this substance in 1999, as a result of a petition requesting to add synthetic MET to the National List for poultry. In 2001, the NOSB evaluated a technical advisory panel (TAP) analysis of MET against the criteria provided in the OFPA (7 U.S.C. 6517–6518), and determined that the use of synthetic MET feed supplementation is compatible with a system of organic poultry production. Consistent with the NOSB’s recommendation, the Secretary amended § 205.603 of the National List on October 31, 2003, to allow MET as a synthetic substance for use in organic poultry production until October 21, 2005 (68 FR 61987).

Based upon subsequent NOSB recommendations in March 2005 and May 2008, the Secretary amended the listing for MET to continue the use through October 21, 2008 (70 FR 61217), and again through October 1, 2010 (73 FR 54057). The 2005 and 2008 NOSB recommendations to continue the allowance for MET were informed by updates on the development of allowable natural alternatives, none of which had attained commercial viability. While expressing a strong preference for supplementation with allowable natural sources of MET, the NOSB concluded that terminating the allowance for synthetic MET would disrupt the well-established organic poultry market, and cause substantial economic harm to organic poultry producers. The NOSB and stakeholders agreed that the organic feed sector would continue to research and develop sufficient supplies of allowable organic and natural sources.

On July 31, 2009, the MTF, which is comprised of organic poultry producers, submitted a new petition requesting to extend the allowance for synthetic MET for five years until October 2014. In addition, the MTF proposed that the total amount of synthetic MET in the diet remain below the following levels, calculated as the average pounds of 100% synthetic MET per ton of feed over the life of the bird:

Laying chickens—4 pounds; broiler chickens— 5 pounds; and, turkey and all other poultry—6 pounds.

In consideration of the July 2009 petition and public comments, the NOSB issued two recommendations on April 29, 2010. These recommendations acknowledged a need for the continued allowance of synthetic MET, and conveyed the intent to decrease the amount of synthetic MET allowed in organic poultry production and encourage development of natural alternatives. One recommendation proposed to allow synthetic MET in organic poultry production until October 1, 2012, at the following maximum levels per ton of feed:

Laying chickens—4 pounds; broiler chickens—5 pounds; and turkey and all other poultry—6 pounds.

The NOP codified this recommendation through a National List amendment published in the **Federal Register** on August 24, 2010 (75 FR 51919), and reaffirmed on March 14, 2011 (76 FR 13501).

The second NOSB recommendation from April 2010 proposed reduced maximum levels of synthetic MET after October 1, 2015. The NOSB recommended that the annotation or synthetic MET be revised to read:

For use only in organic poultry after October 1, 2012, at the following maximum levels per ton: laying and broiler chickens—2 pounds per ton; turkeys and all other poultry—3 pounds per ton.

The NOP issued a proposed rule in the Federal Register to amend the National List to reflect the 2010 recommendation on February 6, 2012 followed by a final rule published in the Federal Register on September 19, 2012:

DL-Methionine, DL-Methionine-hydroxy analog, and DL-Methionine-hydroxy analog calcium (CAS #'s 59-51-8, 583-91-5, 4857-44-7, and 922-50-9)—for use only in organic poultry production at the following maximum levels of synthetic methionine per ton of feed: Laying and broiler chickens—2 pounds; turkeys and all other poultry—3 pounds

The amended listing removed the expiration date of 2012 and subjected synthetic MET at rates listed above to review within five years in accordance with the OFPA provision for the sunset of National List substances (7 U.S.C 6517(e)). Synthetic MET for the step-down for laying and broiler chickens – 2 pounds; turkeys and all other poultry – 3 pounds is now subject to a sunset review by the NOSB by 2017.

Relevant Areas in the Rule

7 CFR §205.603(d)(1) - Synthetic substances allowed for use in organic livestock production. As feed additives.

Impact on Industry of Step-Down Rates

Producers are feeding additional levels of protein, commonly soybean meal, in an attempt to meet the MET needs of the birds. This in effect is over feeding numerous amino acids in order to get enough MET into the birds. During the winter months, the birds consume enough feed to meet their needs, but the additional protein in the feed is excreted into the barns causing ammonia levels to rise and blisters on the bird's feet. During the summer months, the birds naturally consume less feed, as their nutritional maintenance requirement is lower, and cannot consume enough feed to meet the necessary level of MET. Producers and certifiers are seeing an increase in feather pecking which can lead to cannibalism, agitation, nervousness, and other behavioral issues. These are animal welfare issues and the organic producers fail to understand why a logical solution cannot be adopted. If the rations could be tailored to the needs of the animal, why would the organic regulations prevent them from doing the right thing for the bird, especially if the overall intake would be at or below the allowed maximum over the course of its life?

Previous NOSB deliberations have discussed alternative sources for synthetic MET. The MTF has invested significant time and money seeking viable alternatives for their industry in an effort to meet consumer expectations. High MET corn has production and yield issues. Corn variety trials are ongoing with the hopes this breeding work will be able to develop varieties that supply the appropriate amount of necessary amino acids. Pasture may provide some supplementation during the right conditions, but is certainly not a dependable solution. Other feed grains may have higher MET levels than corn, but have lower overall protein or may be limiting in other

amino acids which makes them improbable solutions. The EU uses corn gluten meal to balance the MET demand since synthetic MET is not allowed, but 5% of their rations do not have to be organic. Organic corn gluten meal is not available to US producers. Fishmeal and crab meal are used by some organic producers, while others are concerned about off flavors. Availability of fish- and crab meal is very low as most of these products are stabilized for transport with non-compliant stabilizers. Many organic consumers are looking for vegetarian based production systems as well. The NOSB Livestock Subcommittee put forth a discussion document on feeding animal byproducts to poultry as an alternative source of MET and while there was a minority that agreed with the proposal, the majority deemed that consumers would be concerned that organic principles would be compromised. Because there is so much interest in finding an alternative to synthetic MET for organic producers, numerous projects around the world are evaluating herbal and insect based sources. However, due to the need for U.S. Food and Drug Administration (FDA) approval, these will be many years out if determined to be suitable alternatives.

Discussion

MET is classified as an essential amino acid because it cannot be biologically produced by poultry and is necessary to maintain viability. MET is required for proper cell development and feathering in poultry. Natural feed sources with a high percentage of MET include blood meal, fish meal, crab meal, corn gluten meal, alfalfa meal, and sunflower seed meal. Synthetic MET is also used in poultry feed. This substance is a colorless or white crystalline powder that is soluble in water. MET is regulated as an animal feed nutritional supplement by the Food and Drug Administration (21 CFR 582.5475). The dietary demand for total MET declines with age for broilers and turkeys, and while there is a decline during the early stages of pullet development, it increases just before laying begins and trails off as the birds age.

The National Research Council (NRC) recommended rates for Methionine are expressed as a percentage of diet:

	% Methionine	MET Per Ton of Feed
Broilers		
0-3 weeks	.50	10.0 lbs
3-6 weeks	.38	7.6 lbs
6-8 weeks	.32	6.4 lbs
Layers (White –Egg laying Strains+		
0-6 weeks If intake is 100g/day	.30	6.0 lbs
6-12 weeks If intake is 120g/day	.25	5.0 lbs
12-18 weeks	.20	4.0 lbs
18 weeks to first egg	.22	4.4 lbs

Source: National Research Council (NRC): Nutrients Requirements for Poultry: Ninth Revised Edition, 1994

+NRC values from NRC: Nutrients Requirements for Poultry: Ninth Revised Edition, 1994 for Brown-egg laying strains, turkeys, and other poultry types.

The current annotation restricts the addition of synthetic MET to no more than 2 pounds per ton (or .1% of total weight) for layers and broilers, and 3 pounds per ton (or .15% of total weight) for

turkeys and all other poultry. While a typical soybean/corn ration does supply some natural sources of MET, that amount plus the amount of synthetic MET which can be added under an organic program, leaves a significant shortfall from the NRC recommended levels for proper animal development. Further, the current annotation does not take into account the fluctuating demands for MET based on the life stage of the birds.

At the April 2014 NOSB meeting in San Antonio, the Livestock Subcommittee brought forth a proposal to revise the annotation for MET, allowing for the maximum average over the life of the flock to be 2 pounds per ton for layers and broilers, and 3 pounds per ton for turkeys and all other poultry. There was considerable debate on whether or not the annotation should be changed. The majority of the discussion surrounded two issues: 1) the question as to whether a change in annotation would decrease the incentive for the poultry industry to develop alternatives to synthetic Methionine; and 2) the concern that since the change in annotation would effectively reset the Sunset date of the material, MET would stay on the National List for an additional 5 years, further than its original Sunset date of 2017. In order to try to seek a solution that would address these concerns, the Livestock Subcommittee elected to send the proposal back to committee for further discussion.

Since that time, the Livestock Subcommittee has spent a considerable amount of time studying the issues around Methionine; in particular, the commercial availability and/or development status of any non-synthetic alternatives to synthetic MET. The Subcommittee also sought to understand the impact the stepped down rates have had on animal welfare and what role outdoor access has on naturally available sources of MET, i.e., insects and worms that might be foraged by pastured chickens. The Subcommittee received input from a variety of stakeholders in organic poultry production, including both smaller and larger producers, university researchers, poultry nutritionists and agronomists. While there was some debate around the timeline for commercial availability of non-synthetic alternatives, there was consensus that as long as consumers have the expectation of all vegetarian diets for poultry (laying hens, in particular) MTH will continue to be a major issue. There are currently no acceptable alternatives to synthetic MET. And from most, the feedback was that the likelihood of newly developed materials being commercially available before the 2017 Sunset of MET is highly unlikely.

Since the implementation of the new step-down rates for MET went into effect in 2012, public oral and written comments from organic poultry producers generally expressed an observed decrease in overall animal welfare. Therefore, during this information gathering stage, the Subcommittee sought to understand the impact on animal welfare that the stepped down rates of Methionine were having on both large- and small-scale producers. In general, the responses were mixed. However, there emerged a trend that flocks on the lower rates of MET had an increased tendency to demonstrate more stress related issues, including feather pecking and cannibalism. In discussion with stakeholders who provided input, the availability of outdoor access did not seem to have a significant impact on this trend. In some cases, a statistically significant increase in animal mortality was observed at the restricted MET rates.

The levels of MET put forth in this proposed annotation change reflect the Livestock Subcommittee's understanding of the minimum average levels of MET that organic producers need in order to effectively balance the nutritional needs of their flocks with consumer preference for vegetarian poultry diets.

Under this proposal, producers will have an increased liability to document feeding rates to confirm compliance with the regulation. Certifiers will have to develop tracking systems with producers and their feed mills to verify compliance. Larger poultry operations change the

rations frequently to keep cost down by only feeding to meet the bird's needs. These operations will have detailed records on flock age, size, and feed rations fed on a daily basis. However, it will be somewhat complicated if a pullet flock is transferred to for egg production to another farmer who is with another certifier. All the feed documentation will have to follow as well. Smaller operations often feed the same ration throughout the life cycle of the bird and therefore would never feed more than the average. Certifiers have indicated that mechanisms can be developed with their clients, suitable to verify compliance with the regulation. They are in part motivated by the behavioral issues being reported by their inspectors during this first season under the new cap. The NOP may need to issue Guidance Documents or Instructions to certifiers to clarify how verification can be obtained. Certifiers affiliated with the Accredited Certifiers Association (ACA) often work together and help each other gain consistency in areas like this. This could also be a part of the annual training for certifiers conducted by the NOP and ACA.

The NOSB Livestock Subcommittee is unsure of how certifiers will handle a situation if the flock goes out of production prior to the average being below the regulatory cap. We are uncertain as to whether this would be a noncompliance that must not be repeated or a willful violation indicating civil penalties.

Calculating MET allowances average over the life of the flock will result in the following:

- Feed rations can better adjust to the naturally changing demands of the bird. Poultry farmers will have more flexibility to appropriately adjust diets for stage of life, seasonality, breed, etc.;
- Overall usage of MET will likely be lowered. Producers can only add MET to the average cap, not consistently add MET at the maximum rate. Feedback from industry indicate that given the flexibility to adjust MET rates as appropriate, the total actual average MET usage may be below the maximum cap;
- Farmers and nutritionists will still be only marginally capable of meeting the bird's basic needs. The organic poultry industry will continue to have a tremendous incentive to actively evaluate novel sources of MET. With continued research and the development of effective alternatives proven to meet the demands of the organic poultry sector, the NOSB Livestock Subcommittee believes that MET can eventually be eliminated from organic production.

Current listing on the National List:

DL-Methionine, DL-Methionine-hydroxy analog, and DL-Methionine-hydroxy analog calcium (CAS #'s 59-51-8, 583-91-5, 4857-44-7, and 922-50-9)—for use only in organic poultry production at the following maximum levels of synthetic methionine per ton of feed: Laying and broiler chickens—2 pounds; turkeys and all other poultry—3 pounds.

The regulations currently express a total maximum limit of pounds of MET per ton of feed. Consistent with the petition from July 2009 and April 2011, this proposal requests that MET rates be expressed as an average per ton of feed over the life of the flock.

Recommended Committee Action & Vote

Motion to accept the following amendment at §205.603(d):

DL–Methionine, DL–Methionine—hydroxy analog, and DL–Methionine—hydroxy analog calcium (CAS #'s 59-51-8, 583-91-5, 4857-44-7, and 922-50-9) -for use only in organic poultry production at the following maximum average pounds per ton of 100% synthetic methionine in the diet over the life of the flock: Laying chickens – 2 pounds; Broiler chickens – 2.5 pounds; Turkeys and all other poultry – 3 pounds.

Motion by: Tracy Favre

Seconded by: Jean Richardson

Yes: 6 No: 2 Abstain: 0 Absent: 0 Recuse: 0

Motion to adopt the following resolution:

Resolution: The National Organic Standards Board is committed to the phase-out of synthetic methionine for organic poultry production, and encourages aggressive industry and independent research on natural alternative sources of methionine, breeding poultry that perform well on less methionine, and management practices for improved poultry animal welfare.

Motion by: Tracy Favre

Seconded by: Colehour Bondera

Yes: 8 No: 0 Abstain: 0 Absent:0 Recuse: 0

Further Clarification of the Proposed Amendment

Under this recommendation, producers would be able to exceed the above levels in a particular formulation, provided that there was an offsetting formulation below the level, such that the average inclusion rate of 100% synthetic MET over the entire life cycle of the flock was below the allowed maximum level.

Reference is specifically made to 100% synthetic MET, as some forms of synthetic MET (e.g. the liquid form Alimet) are not 100% MET. The maximum pounds as shown above is based on the 100% synthetic MET equivalent so that a consistent standard can be applied to all organic operations, irrespective of the form of MET they are using (e.g. wet vs. dry).

Approved by Tracy Favre, Subcommittee Chair, to transmit to NOSB February 17, 2015

Methionine Minority Opinion

Submitted February 25, 2015

Note: The minority opinion members are Colehour Bondera and C. Reuben Walker. The minority opinion was written AFTER the NOSB-LS voted in support of the synthetic methionine proposal on Tuesday, February 17, 2015..

The minority opinion and majority opinion agree to the commitment by the National Organic Standards Board (NOSB) to the phase-out of synthetic methionine for organic poultry production and encourage aggressive research on natural sources of methionine, as well as research into breeding poultry that perform well on less methionine.

However, the minority opinion will (1) outline points of opposition; (2) cite where the oppositions are in the recommendation, and (3) offer reasonably and humane alternatives.

The outline points of opposition and citations where the oppositions are in the majority recommendation are:

1. There is no science or sufficient evidence for changing the current Step down Method on the record from 2 pounds of synthetic methionine/ton of feed for layers and broilers and 3 pounds of synthetic methionine/ton of feed for turkeys and other poultry.
2. The majority opinion changes the amount of synthetic methionine for broilers from a maximum of 2 pounds/ton to an average of 2.5 pounds/ton per ton over the life of the flock. However, there is no strong scientific evidence or case at the writing of this document to support this change.
3. The use of averaging has been voted down by previous NOSB livestock committees and all previous NOSBs, and it is being petitioned again without new scientific information. In addition, averaging raises serious enforcement problems.

The Methionine Task Force (MTF) or someone should provide feeding schedules showing synthetic methionine levels at the various stages of life.

Conversely, by the majority opinion raising the allowance of synthetic methionine for broilers from 2.0 pounds/ton to an average of 2.5 pounds/ton, the expectation is that during early stages of life the levels of synthetic methionine would increase considerably. The later life stages – at least for broilers – require less methionine, but consume more food, thus amount of synthetic methionine in the early stages of life can be quite high – perhaps as much as 2-4 times the limit of 2.5 pounds/ ton.

In essence synthetic methionine will increase beyond 2.5 pounds/ton and possibly greater than 8 or more pounds of synthetic methionine/ton. This is NOT the intent of previous NOSB boards. Why? It does NOT step down the use of synthetic methionine in a fashion that encourages aggressive research on natural sources of methionine, NOR meet consumer expectation of phasing out the use of synthetic methionine, NOR encourage research into breeding poultry that perform well on less synthetic methionine as stated in the majority opinion of this proposal.

For the sake of transparency, the MTF and/or the LS should supply some real examples showing how the diets will be balanced over the lifetime of the birds and move toward the phasing out of the use of synthetic methionine in organic poultry diets.

Also, the majority is changing one of the three organic poultry categories without scientific rigor

or strong justifications while changing a previous NOSB Step-Down recommendation that has been vetted through the NOSB and National Organic Program (NOP) Rule Making processes. The dissenting opinion believes that the previous Boards' intentions must be upheld. Thus, the dissenting opinion seeks a fairer and balanced consensus by offering a few recommendations that focus on the Step-Down or Modified Step-Down and Phasing-Out approach of synthetic methionine RATHER than Modified Step-Up approach that the majority is seemingly proposing.

Take Away #1: The minority opinion seeks to offer recommendations that should help lead to the phasing-out of synthetic methionine in organic poultry production in a Modified Step Down approach.

These approaches thereof should allow for the scientific experimentation on alternatives to synthetic methionine, prevent severe hardship on existing organic poultry producers, provide greater expectation for new organic poultry producers, meet consumer expectations of phasing out the use of synthetic methionine, and respect the tenor and intent of previous NOSB board and current NOSB desire to phase-out the use of synthetic methionine in organic poultry diets.

Take Away #2: There is no scientific or strong justification for increasing broiler synthetic methionine levels and not addressing layers, turkeys, and other poultry.

There are two (2) methionine documents that NOSB-LS will be addressing at this meeting. The two (2) methionine documents are:

1. A Methionine Petition Proposal – The petition seeks to average and increase the use of synthetic methionine over the life of the bird with no step down or phase out plan.
The majority proposal:
 - a. Proposes allowance of an average of 2 pounds/ton of synthetic methionine for layers over the lifetime of the birds, resulting in increases in synthetic methionine the diet during different life stages,
 - b. Propose increases synthetic methionine at certain times in broilers diets from 2 pounds/ton to an average of 2.5 pounds/ton over the life of the birds without stating the scientific or strong evidence to support the change, and
 - c. Allows an average of 3 pounds/ton of synthetic methionine for turkey and other poultry of resulting in increases in the diet during different life stages.
2. The Sunset Methionine Proposal of 2017 – Since the NOSB cannot annotate materials on the National List at sunset, unless the petition is adopted by the Board, the current listing for methionine would be voted up or down.

The majority opinion at this time does not reveal how much synthetic methionine will be fed beyond the 2 pounds/ton synthetic methionine for layers, 2.5 pounds/ton of synthetic methionine for broilers, and 3 pounds/ton of synthetic methionine for turkeys and other poultry. Therefore, the levels can rise to levels of 6-8 pounds per ton or higher. In essence, this will be no step down, no modified step down, but a means to negate the LS intent of the phase-out of synthetic methionine for organic poultry production to encourage aggressive research on natural sources of methionine, as well as research into breeding poultry that perform well on less methionine.

Also, the current petition before the Board amends the current listing for synthetic methionine to allow increases in the feeding of synthetic methionine at different (presumably younger) stages of poultry's lives. Why? Because the language proposes averaging without any specific calculations of allowable levels during starter, grower, laying, and finishing life stages. Realistically, under the majority proposal, the stages of life as outlined in the National Research Council (NRC) for Poultry for layers, broilers, turkeys, ducks, geese, and other poultry could be exceeded. Thus, we could see the levels of synthetic methionine fed poultry increase from the current 2 pounds/ ton to possibly 6-8 or more pounds/ ton during the younger stage of poultry's lives. Conversely, these stages of live of the birds could be a few days or few weeks. Moreover, the lack of specific allowable delineated levels (lowest to highest) makes the enforceability of the proposal almost impossible and/or time consuming or burdensome. Previous NOSB board has not approved the averaging approach for synthetic methionine.

The majority opinion science or evidence supporting the need for increased synthetic methionine consumption (above currently allowable levels) during specific phases of life is not provided; nor how the passage of the proposal will promote the phasing out of synthetic methionine as stated in the proposal resolution. Is synthetic methionine necessary for animal welfare?

The claim has been made that the use of synthetic methionine is essential for the welfare of poultry. This claim is not supported with established measures of animal welfare and data separating the impact of synthetic methionine from that of management choices. It is not supported by the research results reported by the Methionine Task Force (MTF) in its 2009 petition. The European Union (EU) does not allow the use of synthetic methionine in organic poultry, but does require more space per bird, fewer birds per house, and more access to the outdoors (European Union, 2008). Significantly, the EU also requires that poultry be of slow-growing breeds or be slaughtered at an older age. The contribution of all these factors to the welfare of poultry has been documented. Studies show that reduced stocking rates (both density and group size), outdoor access, and slower-growing birds (who use the outdoors more effectively), but not synthetic methionine and cysteine, have a positive impact on the welfare of poultry (Kjaer and Sorensen, 2002).

Goldstein, 2014 of the Mandaamin Institute submitted to the NOSB evidence that synthetic methionine "up-regulates production of growth hormone insulin-like growth factor I (IGF-1)." However, Jacob, 2015, disputed this claim. Further discussion and research on this issue will probably continue.

The majority proposal says, "there emerged a trend that flocks on the lower rates of methionine had an increased tendency to demonstrate more stress related issues, including feather pecking and cannibalism. No peer-reviewed research has been cited to support this opinion.

Take Away #3: If the current of synthetic methionine is voted down, organic poultry producers will still be able to use synthetic methionine in organic poultry diets. Why? Because there is another methionine proposal with a current sunset date of October 2, 2017 for synthetic methionine. At this point, the NOSB would consider the national listing for this material. The majority proposal does not provide adequate scientific support or justification to propose a drastic change in the allowance of synthetic methionine in feed.

Table 1. General History of Methionine and NOSB

1999	1st petition submitted.
2001	Technical Advisory Panel (TAP) review.
2001	NOSB determines that synthetic methionine is not consistent with organic agriculture but approves it for interim use , until October 21, 2005, by the organic poultry industry to allow the phasing out of their use. <i>(14 synthetic, 0 natural, 0 abstaining; 14 approve, 0 prohibit, 0 abstaining)</i>
2003	USDA adds methionine to NL until October 21, 2005.
2005	2nd Petition - Methionine Task Force (MTF) petitions for continued inclusion on NL.
2005	1st Expiration Date Extension - NOSB votes to extend expiration date to October 21, 2008.
2007	3rd Petition - MTF petitions to remove the expiration date.
2008	2nd Expiration Date Extension - NOSB votes to extend expiration date to October 1, 2010.
2009	4th Petition - MTF petitions to extend the allowance for synthetic MET for five years until October 2014. In addition, the MTF proposed that the total amount of synthetic MET in the diet remain below the following levels, calculated as the average pounds per ton of 100% synthetic MET over the life of the bird: Laying chickens—4 pounds; broiler chickens—5 pounds; and, turkey and all other poultry—6 pounds.
2010	NOSB votes to (1) allow synthetic MET in organic poultry production until October 1, 2012, at the following <u>maximum levels</u> per ton of feed: Laying chickens—4 pounds, broiler chickens—5 pounds, and turkey and all other poultry—6 pounds; and (2) allow reduced <u>maximum levels</u> of synthetic MET after October 1, 2012, the following <u>maximum levels</u> per ton: laying and broiler chickens—2 pounds per ton; turkeys and all other poultry—3 pounds per ton. Note: Averaging was not approved by NOSB.
2010-2011	The NOP codified the first recommendation through a National List amendment published in the Federal Register (FR) on August 24, 2010 (75 FR 51919), and reaffirmed on March 14, 2011 (76 FR 13501).
2011	5th Petition - MTF petitions to change the limits from pounds per ton of feed to average pounds per ton of feed over the lifetime of the birds.
2012 ¹	The NOP issued a proposed rule in the Federal Register to amend the National List to reflect the 2010 recommendation on February 6, 2012 followed by a final rule published in the Federal Register on September 19, 2012. The amended listing removed the expiration date and put methionine back into the sunset cycle (2017 sunset.) NOP acknowledges MTF petition.
2013	Fall 2013 NOSB meeting canceled. Methionine proposal carried over to 2014.
2014 ²	The LS proposes to allow synthetic methionine at the following maximum average pounds per ton of 100% synthetic methionine in the diet over the life of the flock: Laying and broiler chickens – 2 pounds; Turkeys and all other poultry – 3 pounds.
2014 ³	Expiration Date Consideration - <i>Some NOSB members want an expiration date. NOSB sends proposal back to LS. Chair indicates that the subcommittee could bring back two motions –one for the variable rate and one for the expiration date.</i>

¹ <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5104939>.

² <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5106664>.

³ <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5107796>, pages 1562-1615.

Realistic Phase-Out Date is Needed

The resolution of the current LS proposal vote was 8-0 in the commitment to phase out synthetic methionine. The resolution is laudable. It is consistent with previous LS committee and NOSB boards for the desire to phase out of organic poultry production the use of synthetic methionine. If, as the resolution in the majority proposal states, the NOSB is committed to a phase-out of synthetic methionine, then it is essential that a phase out date be attached or a phase-out plan be outlined. It is only by adopting into regulation a phase-out plan that includes endpoints to each phase that the Board can adopt further step-down requirements.

If the Board put this listing back into sunset, a petition would be required to effect the changes that the majority resolution is proposing. Who would petition? What is the process for petitioning? These unknowns are unacceptable.

Recommendation Option #1

The minority opinion suggests that the listing be changed to read:

DL–Methionine, DL–Methionine—hydroxy analog, and DL–Methionine—hydroxy analog calcium (CAS #'s 59-51-8, 583-91-5, 4857-44-7, and 922-50-9)—for use only in organic poultry production at the following pounds of synthetic 100% Methionine per ton of feed in the diet: Laying and broiler chickens – 2 pounds; Turkeys and all other poultry – 3 pounds. Until December 31, 2019.

Benefits of the phase out are:

1. Negate the need to using *average over the life of the birds*. The averaging is too variable from farm to farm, thus leading to feeding methionine back to in the range of 6 to 8 or more pounds/ton.
2. It honors previous NOSB boards' intent of phasing out the use of synthetic methionine.
3. Satisfy consumer preference for phasing out methionine in poultry diets. The approach should help spur creative management approaches, breed selection, alternative methionine sourcing, and creating a demand for feed manufacturers to market, etc.
4. Provide a means for signaling NOSB intention of phasing out the synthetic methionine
5. It helps to spur research on alternatives and provide time for updates, if additional time is beyond December 31, 2019 is needed, then another phase-out date can be recommended. **The approach has been used previously by NOSB boards and while averaging have been denied. See table 1.**

Recommendation Option #2

Cap the levels of synthetic methionine for new organic poultry operations in productions after 2015. Some modified schedule could be adopted. The following is just one example, and grandfathering of existing operations at a different level has also been considered. The grandfathering issue and phase out can be developed by the LS and brought back for a vote in the fall of 2015.

Step #1: Grandfather in all organic poultry operations in production prior to 2015 by capping synthetic methionine at modified step down rate. A change in ownership and expansion of an existing structure are excluded. Table 2 and 3 give examples.

Table 2. Cap levels of synthetic methionine for grandfathered organic poultry operations prior to 2015 without averaging.

Poultry Level	Methionine Level	2010	2015	>2020
		Lbs./Ton	Lbs./Ton	Lbs./Ton
Layers	.20	4	3	2.25
Broilers	.25	5	4	3
Turkeys and all Other Poultry	.30	6	5	3.75

Table 3. Cap levels of synthetic methionine for new organic poultry operations in productions after 2015 without averaging.

Poultry Level	Methionine Level	2010	2015	2020	2025	2030	2035	2040 Phase Out
		Lbs./Ton	Lbs./Ton	Lbs./Ton	Lbs./Ton	Lbs./Ton	Lbs./Ton	Lbs./Ton
Layers	.20	4	3	2.25	1.69	1.27	.95	End
Broilers	.25	5	4	3	2.25	1.70	1.30	End
Turkeys and all Other Poultry	.30	6	5	3.75	2.80	2.20	1.65	End

Benefits of the Modified Step Down

1. Provide a more gradual (25% rather than a 50%, 60%, and 50%) reduction for layers, broilers, and turkeys and other poultry, respectively and eventual reduction in synthetic methionine over time,
2. Allows time more time for independent and on-farm research efforts,
3. Allow more time for natural alternatives explorations,
4. Negate the need to using *average over the life of the birds*. The existing averaging is too variable from farm to farm, thus leading to feeding methionine back to in the range of 6 to 8 or more pounds/ton,
5. It honors previous NOSB board's intent of reducing the use of synthetic methionine in a step-down manner,
6. Help satisfy consumer preference for phasing out methionine in organic poultry diets. The approach should help spur creative management approaches, breed selection, alternative methionine sourcing, and creating a demand for feed manufacturers to market, etc., and
7. It conforms to the majority unanimous vote of 8-0 in this proposal for a possible approach to phasing out synthetic methionine in a humane manner.

Conclusion

The minority opinion and majority opinion members **BOTH** agree to the commitment by the NOSB to the phase-out of synthetic methionine for organic poultry production and encourage aggressive research on natural sources of methionine, as well as research into breeding poultry that perform well on less methionine. The minority opinion seeks to address the issue of synthetic methionine in a way (1) to encourage more independent research, (2) keep the organic poultry industry strong, (3) meet consumer expectations, and (4) honor previous NOSB boards' decisions to phase out synthetic methionine and not approve the averaging of synthetic

methionine in organic poultry production.

References

EC regulation No. 889-2008, Article 12.

<http://www.ams.usa.gov/AMSV1.0/getfile?dDocName=STELPRDC5104939>.

<http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5106664>.

<http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5107796>, pages 1562-1615.

Kjaer, J. B., & Sorensen, P. (2002). Feather pecking and cannibalism in free-range laying hens as affected by genotype, dietary level of methionine+cystine, light intensity during rearing and age at first access to the range area. *Applied Animal Behavior Science*, 76(1), 21-39.

Jacob, J. 2015. Personal communication. Letter sent to NOSB-LS committee.

Walter Goldstein. 2014. Letter to National Organic Standards Board dated November 26, 2014. Pgs. 5-9.