

**National Organic Standards Board
Livestock Subcommittee
Petitioned Material Checklist
Trace Minerals for Aquatic Animals Proposal**

August 6, 2013

Summary of Proposed Action:

The use of synthetic minerals in organic aquatic animal production was petitioned by the Aquaculture Working Group (AWG). The National Organic Program (NOP) allows the use of minerals in organic livestock production as feed additives, under §205.603(d)(2) as "Trace minerals, for enrichment or fortification when FDA approved." The Technical Review (TR) was compiled by the Pesticide Research Institute for the USDA National Organic Program. The Livestock subcommittee determined that the TR is sufficient according to NOSB review criteria for TR's.

Minerals are essential for animals raised on land or in water. Minerals, like carbohydrates, proteins, fats, and vitamins are foundational to good humane animal health. Natural minerals are found in sources that include fish, fish oils, green leafy vegetables, soybean, and many livestock by-products. The commercial availability is a major impediment and concern. Synthetic minerals are mainly produced by chemical methods.

Minerals are petitioned for enrichment and fortification, if FDA approved. The use petitioned is the same use currently used in organic livestock production. The use of petitioned minerals should help reduce the harvesting of our fish populations worldwide. As our fish population declines, its can have a negative impact on individuals of various communities, countries, and cultures.

All of the major standards for organic aquaculture or aquaculture allow the use of synthetic minerals. In the United States, synthetic minerals are NOP approved for use in land-based livestock production. For consistency, the allowance for synthetic minerals is a fair and balanced approach for meeting the essential nutrient demand of minerals in aquatic animal diets, until viable non-synthetic minerals sources are in the market place.

The Livestock Subcommittee has received a petition for the use of synthetic minerals in aquatic animals feed on January 6, 2012. A TR was requested by the LSC- Chair in early January, 2013. The TR was received on June 24, 2013. The TR provided helpful information for the LSC and NOSB to consider in the subcommittee and Board to evaluate as it pertains to synthetic minerals in aquatic animal production.

Evaluation Criteria (see attached checklist for criteria in each category)

	Criteria Satisfied?		
1. Impact on Humans and Environment	X Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
2. Essential & Availability Criteria	X Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
3. Compatibility & Consistency	X Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A

Substance Fails Criteria Category: NA

Subcommittee Action & Vote, including classification proposal (state actual motion):

Classification Motion: Move to classify trace minerals as petitioned for aquatic animals as synthetic

Motion by: C. Reuben Walker

Seconded by: Francis Thicke

Yes: 7 No: 0 Absent: 2 Abstain: 0 Recuse: 0

Listing Motion: Move to list trace minerals as petitioned for aquatic animals on section 205.611 of the National List

Motion by: Francis Thicke

Seconded by: C. Reuben Walker

Yes: 7 No: 0 Absent: 2 Abstain: 0 Recuse: 0

Proposed Annotation (if any): None

Approved by Tracy Favre, Subcommittee Chair, to transmit to NOSB August 6, 2013

**NOSB Evaluation Criteria for Substances Added To the National List
Livestock**

Category 1. Adverse impacts on humans or the environment? Substance: Trace Minerals for Aquatic Animals

Question	Yes	No	N/A	Comments/Documentation (TAP; petition; regulatory agency; other)
1. Is there a probability of environmental contamination during use or misuse? [§6518(m)(3)]	X	X		<p>“When used as petitioned, trace minerals from unconsumed feed pellets have the potential to persist in treated bodies of water, ground water, sediments and bioaccumulate in animal tissues.” But, “Overall, the risk of lethal effects from bioconcentration of the petitioned trace elements is considered to be low.”</p> <p>[See 2013 Trace Minerals TR, pgs. 15-16]</p>
2. Is there a probability of environmental contamination during manufacture or disposal? [§6518(m)(3)]	X	X		<p>Environmental contamination could possibly occur; however, the risks are low when manufacturers exercise good standard operating procedures for minerals production, use, and disposal.</p> <p>[See 2013 Trace Minerals TR, pgs. 18-19]</p>
3. Does the substance contain inerts classified by EPA as “inerts of toxicological concern?” [§6517 (c)(1)(B)(ii)]		X		<p>The petitioned minerals are not requested for use as a pesticide, thus by definition, trace minerals are not inerts.</p> <p>[See 2013 Trace Minerals TR, pg. 13]</p>
4. Is there potential for detrimental chemical interaction with other materials used in organic farming systems? [§6518(m)(1)]		X		<p>No direct interaction between trace minerals and other aquatic animal feed additives were identified. The petitioned trace minerals are chemically equivalent to trace minerals that are used for fortification of organic livestock feed under 7 CFR 206.603.</p> <p>[See 2013 Trace Minerals TR, pgs. 19-20]</p>
5. Is there a toxic or other adverse action of				<p>There is a wide range of potential toxicities</p>

<p>the material or its breakdown products? [§6518(m)(2)]</p>	<p>X</p>	<p>X</p>	<p>associated with the various trace minerals. However, comparison of (aquaculture) effluent concentrations to the aquatic toxicity ... and drinking water quality standards for each mineral points to a negligible potential for toxicity under the prescribed use of the substance.”</p> <p>[See 2013 Trace Minerals TR, pgs. 16-17]</p>
<p>6. Is there persistence or concentration of the material or breakdown products in the environment? [§6518(m)(2)]</p>	<p>X</p>	<p>X</p>	<p>According to the 2013 Aquatic Animal TR, pgs. 20-21) the potential may occur. The risk of lethal effects from bioconcentration of the petitioned trace elements is considered low.</p> <p>[See 2013 Trace Minerals TR, pgs. 21-22]</p>
<p>7. Would the use of the substance be harmful to human health or the environment? [§6517 (c)(1)(A)(i); §6517 (c)(2)(A)(i); §6518(m)(4)]</p>		<p>X</p>	<p>Environmental concentrations of trace minerals are unlikely to cause adverse health effects in humans.</p> <p>[See 2013 Trace Minerals TR, pgs. 21-22]</p>
<p>8. Are there adverse biological and chemical interactions in the agro-ecosystem, including biodiversity? [§6518(m)(5)]</p>		<p>X</p>	<p>No reported toxicity has been observed in non-target wildlife or livestock. The authors believe that minerals are unlikely to exhibit toxicity toward the agro-system. Accidental release during production may lead to ecological impairment.</p> <p>[See 2013 Trace Minerals TR, pg. 20]</p>
<p>9. Are there detrimental physiological effects on soil organisms, crops, or livestock? [§6518(m)(5)]</p>		<p>X</p>	<p>Trace elements are required by soil organisms, crops and livestock, so if the usage rates are kept within the requirements for aquatic animals, there should be no detrimental effects.</p>

**NOSB Evaluation Criteria for Substances Added To the National List
Livestock**

Category 2. Is the Substance Essential for Organic Production? Substance: Trace Minerals for Aquatic Animals

Question	Yes	No	N/A	Comments/Documentation (TAP; petition; regulatory agency; other)
1. Is the substance agricultural? [§6502(1)]		X		
2. Is the substance formulated or manufactured by a chemical process? [§6502(21)]	X			Minerals are primarily produced using chemical synthesis and extraction from either natural or reclaimed sources. [2013 Trace Minerals TR, pgs. 13-15].
3. Is the substance formulated or manufactured by a process that chemically changes a substance extracted from naturally occurring plant, animal, or mineral sources? [§6502(21)]	X			See #2
4. Is the substance created by naturally occurring biological processes? [§6502(21)]		X		See #2
5. Is there a natural source of the substance? [§ 205.600(b)(1)]	X	X		There are natural sources -- fish meal being the best source -- but availability of those sources and the resource demands required to use them widely make them unrealistic sources of trace minerals. [2013 Trace Minerals TR, pgs. 24-25].
6. Is there an organic substitute? [§205.600(b)(1)]	X	X		See #5
7. Is there a wholly natural substitute product? [§6517(c)(1)(A)(ii)]	X	X		See #5
8. Are there any alternative substances? [§6518(m)(6)]		X		Trace minerals are essential. Forage fish, wild caught fish, and shrimp are leading alternatives. [See 2013 Trace Minerals TR, pgs. 24-25].
9. Are there other practices that would make the substance unnecessary? [§6518(m)(6)]		X		Trace minerals are essential. The issue of commercially availability and viable alternatives are major impediments. [See 2013 Trace Minerals TR, pgs. 24-25].

NOSB Evaluation Criteria for Substances Added To the National List

Livestock

Category 3. Is the substance compatible with organic production practices? Substance: Trace Minerals for Aquatic Animals

Question	Yes	No	N/A	Comments/Documentation (TAP; petition; regulatory agency; other)
1. Is the substance consistent with organic farming and handling? [§6517(c)(1)(A)(iii); 6517(c)(2)(A)(ii)]	X			Synthetic minerals are consistent with organic farming principles of several organic entities to include (1) European Union, (2) Canadian General Standards Board, (3) Codex Alimentarius, (4) Japan Ministry of Agriculture, Forestry, and Fisheries, (5) International Federation of Organic Agricultural Movements, and (6) NOP. [See 2013 Trace Mineral Aquatic Animals TR, pgs. 11-12].
2. Is the substance compatible with a system of sustainable agriculture? [§6518(m)(7)]	X			See #1.
3. If used in livestock feed or pet food, is the nutritional quality of the food maintained with the substance? [§205.600(b)(3)]	X			
4. If used in livestock feed or pet food, is the primary use as a preservative? [§205.600(b)(4)]		X		
5. If used in livestock feed or pet food, is the primary use to recreate or improve flavors, colors, textures, or nutritive value lost in processing (except when required by law)? [§205.600(b)(4)]		X		
6. Is the substance used in production, and does it contain an active synthetic ingredient in the following categories: [§6517(c)(1)(B)(i); copper and sulfur compounds		X		
toxins derived from bacteria		X		
pheromones, soaps, horticultural oils, fish emulsions, treated seed, vitamins and minerals	X			
livestock parasiticides and medicines		X		
production aids including netting, tree wraps and seals, insect traps, sticky barriers, row covers, and equipment cleansers		X		

