

**FORMAL RECOMMENDATION BY THE
NATIONAL ORGANIC STANDARDS BOARD (NOSB)
TO THE NATIONAL ORGANIC PROGRAM (NOP)**

Date: November 19, 2008

Subject: Aquaculture: Fish Feed – Fish Oil and Fish Meal & Related Issues

Chair: Rigoberto Delgado

Recommendation

The NOSB hereby recommends to the NOP the following:

Rulemaking Action: X
Guidance Statement:
Other:

Summary Statement of the Recommendation (including Recount of Vote):

After trying to resolve inherent incompatibilities between terrestrial and aquatic animals, the NOSB realized the need to create an independent set of standards for aquaculture. Based on earlier proposals approved by the NOSB, and presented by the AWG, this recommendation includes regulation related to the feeding of aquatic animals. The recommendation also includes a listing of terms defined. The present recommendation was developed after careful consideration of the nutritional and health needs of aquatic species presented by the Aquaculture Working Group, the panelists selected at the Aquaculture Symposium of November 2007, Public Comment and statements made by the National Organic Program at the Spring 2008 NOSB meeting.

The essence of this recommendation is to allow, by exemption of a prohibited natural material in proposed section 205.612, the feeding of fish meal and fish oil from wild caught fish and other wild aquatic animals if produced from environmentally responsible food grade wild caught fisheries and fed in the following step-wise levels: a maximum combined total of 25% during year 1 through 5 after this regulation is implemented, a maximum combined total of 15% during year 6 through 8, and a maximum combined total of 10% during year 9 through year 10, and a maximum combined total of 5% during year 11 and 12, with the percentages by weight of feed being averages over the production cycle of the aquatic animal.

Additionally, the NOSB recommends that aquatic animals fed wild caught fish meal or oil as a supplement pursuant to proposed 205.612 (see above) must indicate (Fed environmentally responsible wild caught fish) on the label directly beneath or next to the name of the fish.

NOSB Vote: Motion: Hubert Karreman Second: Kevin Engelbert

Board vote: Yes - 13 No- 1 Abstain- 0 Absent - 1

Summary Rationale Supporting Recommendation (including consistency with OFPA and NOP):

At the Spring 2008 NOSB meeting, the National Organic Program stated that wild caught fish could be considered by Board as a viable alternative for fish meal and fish oil based on OFPA. The following sections of OFPA are pertinent to this Recommendation: 2103(11) – definition of Livestock; 2107(a)(6) – periodic residue testing; 2107(c)(1) – allowance of wild seafood to be certified or labeled as organic, 2107(c)(2)(B) – accommodate the unique characteristics of the industries in the United States that harvest and process wild seafood.

Response by the NOP:

**National Organic Standards Board (NOSB)
Final Recommendation
Livestock Committee**

**PROPOSED ORGANIC AQUACULTURE STANDARDS:
Fish Feed and Related Management Issues**

November 19, 2008

Introduction:

For the past three years the NOSB with the assistance of the Aquaculture Working Group (AWG) has been in the process of introducing organic aquaculture standards under the umbrella of the livestock section of the Rule. After trying to resolve inherent incompatibilities between terrestrial and aquatic animals, the NOSB realized the need to create an independent set of standards for aquaculture. Based on earlier proposals approved by the NOSB, and presented by the AWG, this recommendation includes regulation related to the feeding of aquatic animals. The recommendation also includes a listing of terms defined.

Background:

During the discussion and approval of the Aquaculture Working Group's proposed standards for finfish presented at the 2007 Spring meeting of the NOSB, it became clear that there was a need for further analysis and review on the use of wild caught fish meal and fish oil in organic aquaculture. As a result, the language referring to fish meal and fish oil was removed from the AWG document prior to the NOSB approval. In November 2007, the NOSB hosted the Organic Aquaculture Symposium on fish feed and net pens to explore the range and depth of scientific and environmental challenges facing global aquaculture. The NOSB realized the need to implement rule changes to allow for certification of aquatic species, but there was a critical challenge: providing adequate supplies of essential nutrients to a new industry with non existing sources of fish meal and fish oil.

At the Spring 2008 NOSB meeting, the National Organic Program stated that wild caught fish could be considered by Board as a viable alternative for fish meal and fish oil based on OFPA. The following sections of OFPA are pertinent to this Recommendation: 2103(11) – definition of Livestock; 2107(a)(6) – periodic residue testing; 2107(c)(1) – allowance of wild seafood to be certified or labeled as organic, 2107(c)(2)(B) – accommodate the unique characteristics of the industries in the United States that harvest and process wild seafood.

The following recommendations are being brought forward in order to maintain organic principles in organic aquaculture through the limited stepped down use of sustainably-sourced wild-caught fish feed as a nonsynthetic feed supplement.

Discussion:

The present recommendation was developed after careful consideration of the nutritional and health needs of aquatic species presented by the Aquaculture Working Group, the panelists selected at the Aquaculture Symposium of November 2007, Public Comment and statements made by the National Organic Program at the Spring 2008 NOSB meeting. The following points summarize the important criteria which guided this recommendation:

- While respecting the current knowledge of the nutritional needs of aquatic animals for fish meal and fish oil, there are feed alternatives which have potential of becoming certified organic. However, the commercial availability of such alternatives is currently an open question.

- Certified organic fish meal and fish oil would be expected to become increasingly available in the future as the certified organic aquaculture industry grows.
- To ensure that diets are nutritionally complete at the inception of USDA certified organic aquaculture, the NOSB proposes that the carcasses, viscera, and trimmings from wildcaught fish be allowed to provide for fish meal and fish oil in a limited, prescribed fashion. This will allow the nascent USDA certified organic aquaculture industry the needed time to establish a critical mass of basic feed resources for itself. OFPA Section 2107(c)(1) supports this.
- The NOSB seeks to encourage the sourcing of fish meal and oil from sources which are managed sustainably and that would otherwise be wasted. For example, the Alaska Pollock fishery is considered to be sustainably managed. Fillets are cut from the fish and oil recovered from the spent carcasses rich in omega-3 fatty acids. This fish oil is then mixed with fuel oil and burned in boilers. This waste is because of high costs to ship the recovered fish oil to the US mainland for inclusion in fish feeds. This is supported by OFPA 2103(11) i.e. use of fish used for food for other fish and by OFPA 2107(c)(2)(B) i.e. accommodate the unique characteristics of the industries in the United States that harvest and process wild seafood.
- The sustainability of wild caught fisheries is paramount.
- Aquatic species for food are considered livestock OFPA 2103(11). Organic systems should promote the natural behaviors of livestock [§ 205.239 (a)]. Many aquatic species require a piscivorous diet to maintain health and this should be the goal of the nutrition provided for such organically managed aquatic animals [§ 205.238(a)(2)]. As a point of clarification, we do not intend this interpretation of the importance of natural behaviors of livestock to extend to a prohibition of indoor operations or net pens in the management of aquatic species which is specifically dealt with in the recommendation on net pens.

Additionally, fish feed derived from terrestrial animal or plant sources, or fresh water fish are not considered an acceptable alternative to marine-based fish for a variety of reasons. Therefore we have also considered the following points in constructing a recommendation:

- Many organic consumers that consume fish may be excluding terrestrial animal sources from their personal diets and do not want to knowingly or unknowingly consume terrestrial animals through fish.
- While some species of aquatic animals may appear to thrive on terrestrial plant sources of feed, the specific composition of their nutritional needs is not completely understood and there is a risk of undermining the health and well-being of these animals. This path would not only be detrimental to the aquatic animals, but could become unsustainable for the industry from an economic point of view. In all likelihood, the end result would be a greater need for supplementation with synthetic amino acids.
- Terrestrial animal and plant-based feeds do not provide the marine-based fatty acids that marine animals need to thrive and that also result in the fatty acid profile, including omega 3's, that consumers expect for their health benefits. While alternative marine feeds, such as aquatic worms and marine algae may provide these fatty acids in the future, their origin is in the marine plankton and they will still need to source marine-based feeds. Standards have not yet been developed for insects and other multi-cellular life forms and there are unresolved questions regarding their agricultural nature
- We believe that Hazard Analysis Critical Control Point (HACCP) will help guide the wise management of certified organic aquatic animals. HACCP is a mandatory program for seafood processors under the U.S. Food and Drug Administration and with additional authority for seafood processors under the National Oceanic and Atmospheric Administration. The program requires the analysis and management of critical processing variables that impact upon the healthiness and safety of seafood products.

- As a result of the proposed step-wise reduction of oil in feed as well as the sourcing of oil from fisheries with the lowest levels of contaminants and treating oil to remove contaminants (supported by 2107(a)(6) – periodic residue testing), there will be more farmed fish with substantially reduced levels of contaminants relative to wild or conventionally produced fish.
- In the terrestrial livestock sections of the regulation, certified organic livestock must consume 100% certified organic feed, and slaughter by-products are expressly prohibited. The biology and dietary needs of the vast majority of fish require piscivorous inputs (see above). Organic consumers may or may not want to consume certified organic fish that have been fed sustainably-sourced wild fish. In order to achieve the greatest consumer awareness, we propose that any certified organic fish which has been fed environmentally responsibly wild caught fish at any point in their life be clearly labeled as such.

Regulatory Framework

Under OFPA:

§ 2102. (7 U.S.C. 66011 PURPOSES). It is the purpose of this title-

- (1) to establish national standards governing the marketing of certain agricultural products as organically produced products;
- (2) to assure consumers that organically produced products meet a consistent standard; and
- (11) LIVESTOCK – The term “livestock” means any cattle, sheep, goats, swine, poultry, equine animals used for food or in the production of food, fish used for food, wild or domesticated game, or other non-plant life.

Clearly, Congress considers “fish used for food” to be within the authority of this statute.

§ 2107. (a) IN GENERAL.—A program established under this title shall

(6) require periodic residue testing by certifying agents of agricultural products that have been produced on certified organic farms and handled through certified organic handling operations to determine whether such products contain any pesticide or other nonorganic residue or natural toxicants and to require certifying agents, to the extent that such agents are aware of a violation of applicable laws relating to food safety, to report such violation to the appropriate health agencies;

§ 2107. (c) WILD SEAFOOD.

(1) IN GENERAL. Notwithstanding the requirement of section 2107(a)(1)(A) requiring products be produced only on certified organic farms, the Secretary shall allow, through regulations promulgated after public notice and opportunity for comment, wild seafood to be certified or labeled as organic.

(2) CONSULTATION AND ACCOMMODATION. In carrying out paragraph (1), the Secretary shall-

(A) consult with-

- (i) the Secretary of Commerce;
- (ii) the National Organic Standards Board established under section 2119;
- (iii) producers, processors, and sellers; and
- (iv) other interested members of the public; and

(B) to the maximum extent practicable, accommodate the unique characteristics of the industries in the United States that harvest and process wild seafood.

At the time of the implementation of the regulation, the NOP excluded aquatic animals from organic livestock production because there was no aquaculture production provisions provided.

NOSB Vote:

Moved: Hubert Karreman

Second: Kevin Engelbert

Yes: 13 No: 1

Abstentions: 0 Absent: 1

Recommendation

This recommendation is intended for rulemaking and to augment the previous recommendation on aquaculture approved by the NOSB in April 2007.

§ 205.2 TERMS DEFINED

Livestock Any cattle, sheep, goat, swine, poultry, equine, or aquatic animals used for food or in the production of food, fiber, feed or other agricultural-based consumer products; wild or domesticated game; or other non-plant life, except such term shall not include bees for the production of food, fiber, feed, or other agricultural-based consumer products.

§205.105 Allowed and prohibited substances, methods, and ingredients in organic production and handling.

- (a) Synthetic substances and ingredients, except as provided in §205.601, §205.603, §205.609 or §205.611;
- (b) Nonsynthetic substances prohibited in §205.602, §205.604, §205.610 or §205.612;

§ 205.237 Terrestrial Livestock feed.

§ 205.238 Terrestrial Livestock Health Care Practice Standard

§ 205.239 Terrestrial Livestock Living Conditions

§ 205.252 Aquatic Animal feed.

- (a) Feeds and feeding practices must meet the minimum nutritional requirements of the aquatic animal.
- (b) Use of aquatic animal feeds must minimize the environmental impact of released nutrients on receiving waters and adjoining ecosystems as documented in the Organic System Plan.
- (c) Aquatic animals must be provided with their natural nutrients consistent with the need to optimize health and growth of the aquatic animal. This includes live foods and the sources of ingredients in formulated feeds as allowed in the rule.
- (d) Feeds for aquaculture products for human consumption must contain lipids from fish oil or other omega-3 sources produced by microorganisms or organic plants to meet the nutritional requirement of specific lipids for the particular aquatic species, except that other lipids from organic sources may be provided in feeds for aquatic animals that have a specific dietary requirements for such ingredients to the extent necessary to meet the minimum requirement for that lipid in that aquatic animal.

- (e) Aquaculture feeds must be composed of feed ingredients that are certified organic, except that nonsynthetic substances and synthetic substances allowed by § 205.611 and § 205.612 may be used as feed additives and supplements.
- (f) Aquaculture feeds may include fish meal and fish oil derived from organically raised aquatic animals or algae according to an Organic System Plan, providing the meal and oil is produced from aquatic animals of a different family than the aquatic animal being fed.
- (g) Silage and lipids produced from organic fish that is enzyme-processed, or produced with acids and bases that are organically certified or approved in § 205.611 for fish emulsion or other purposes, may be certified organic and incorporated into organic aquaculture feeds without limitation.
- (h) Organic aquaculture feeds may include meals and oils containing essential fatty acids produced by processes allowed in organic production.
- (i) Nutritional pigment compounds that appear on 205.611 or are organically produced and allowed by the U.S. Food and Drug Administration for inclusion in aquaculture feeds may be used.
- (j) The producer of organic aquatic animals shall not:
- (1) incorporate or introduce any type of antibiotic or hormone in feeds, the water supply, or the environment;
 - (2) provide feed supplements or additives in amounts above those needed for adequate nutrition and health maintenance of the species at its specific stage of life;
 - (3) feed mammalian or poultry slaughter products to aquatic animals;
 - (4) use feedstuffs extracted with synthetic solvents not approved on 205.611;
 - (5) use feed, feed additives, and feed supplements in violation of the U.S. Federal Food, Drug, and Cosmetic Act; or
 - (6) use any genetically modified organism, or any organism produced by any other excluded method provided in § 205.2 Terms defined, or product thereof, as a feed ingredient.
- (k) Fish meal or fish oil may not be sourced from any fishery classified by relevant state/provincial, national, or international fisheries authorities as follows: “at risk of reduced reproductive capacity;” “suffering reduced reproductive capacity;” “harvested outside precautionary limits;” “over-exploited;” “depleted;” “overfished;” “overfishing is occurring;” or any other comparable classification, or at significant risk of those conditions within the next recruitment cycle.
- (l) For fish meal and fish oil from wild fish used in organic feeds, levels of unavoidable residual environmental contaminants, including persistent bioaccumulative toxins (PBTs) and mercury, cadmium, lead, arsenic and tin must be less than or equal to the lowest levels found in commercially available fish meal and fish oil, provided, however, that the comparable products are classes of fish meal and fish oil allowed in this section, and do not include those produced with volatile organic solvents not allowed under § 205.611. Fish oil must be treated with activated carbon, which may include synthetic activated carbon, or any process using water as a solvent, for removal of contaminants.
- (m) Supplementation of fish meal and fish oil from other non-organic aquatic feed products not specifically allowed in this section is prohibited.

§ 205.300 Use of the term, “organic.”

§ 205.301 Product composition.

(a) *Products sold, labeled, or represented as “100 percent organic.”* A raw or processed agricultural product sold, labeled, or represented as “100 percent organic” must contain (by weight or fluid volume, excluding water and salt) 100 percent organically produced ingredients. If labeled as organically produced, such product must be labeled pursuant to §205.303.

(b) *Products sold, labeled, or represented as “organic.”* A raw or processed agricultural product sold, labeled, or represented as “organic” must contain (by weight or fluid volume, excluding water and salt) not less than 95 percent organically produced raw or processed agricultural products. Any remaining product ingredients must be organically produced, unless not commercially available in organic form, or must be nonagricultural substances or nonorganically produced agricultural products produced consistent with the National List in subpart G of this part. If labeled as organically produced, such product must be labeled pursuant to §205.303.

1) Aquatic animals (and their products) that have been fed environmentally responsible wild caught fish meal or oil as a feed supplement pursuant to 205.612, and that are used as ingredients, must indicate (Fed environmentally responsible wild caught fish) next to the name of the fish.

(e) Livestock feed.

(1) A raw or processed livestock feed product sold, labeled, or represented as “100 percent organic” must contain (by weight or fluid volume, excluding water and salt) not less than 100 percent organically produced raw or processed agricultural product.

(2) A raw or processed terrestrial livestock feed product sold, labeled, or represented as “organic” must be produced in conformance with §205.237.

(3) A raw or processed aquatic animal feed product sold, labeled, or represented as “organic” must be produced in conformance with §205.252

§ 205.303 Packaged products labeled “100 percent organic” or “organic.”

(b) Agricultural products in packages described in §205.301(a) and (b) must:

(1) For products labeled “organic,” identify each organic ingredient in the ingredient statement with the word, “organic,” or with an asterisk or other reference mark which is defined below the ingredient statement to indicate the ingredient is organically produced. Water or salt included as ingredients cannot be identified as organic.

(i) For aquatic animals fed wild caught fish meal or oil as a feed supplement pursuant to 205.612 must indicate (Fed environmentally responsible wild caught fish) on the label directly beneath or next to the name of the fish.

§ 205.306 Labeling of livestock feed.

(a) Livestock feed products described in § 205.301(e)(1), (e)(2) and (e)(3) may display on any package panel the following terms:

(1) The statement, “100 percent organic” or “organic,” as applicable, to modify the name of the feed product;

- (2) The USDA seal;
- (3) The seal, logo, or other identifying mark of the certifying agent which certified the production or handling operation producing the raw or processed organic ingredients used in the finished product, *Provided*, That, such seals or marks are not displayed more prominently than the USDA seal;
- (4) The word, “organic,” or an asterisk or other reference mark which is defined on the package to identify ingredients that are organically produced. Water or salt included as ingredients cannot be identified as organic.

(c) Livestock feed products described in § 205.301(e)(1), (e)(2) and (e)(3) must:

- (i) On the information panel, below the information identifying the handler or distributor of the product and preceded by the statement, “Certified organic by...,” or similar phrase, display the name of the certifying agent that certified the handler of the finished product. The business address, Internet address, or telephone number of the certifying agent may be included in such label.
- (ii) Comply with other Federal agency or State feed labeling requirements as applicable.

§ 205.308 Agricultural products in other than packaged form at the point of retail sale that are sold, labeled, or represented as “100 percent organic” or “organic.”

(a) Agricultural products in other than packaged form may use the term, “100 percent organic” or “organic,” as applicable, to modify the name of the product in retail display, labeling, and display containers: *Provided*, That, the term, “organic,” is used to identify the organic ingredients listed in the ingredient statement.

- (1) If fish is labeled as “organic” and fed wild caught fish meal or oil as a feed supplement pursuant to 205.612, the label, display and display containers must indicate (Fed environmentally responsible wild caught fish) directly beneath or next to the name of the fish.

(d) Livestock feeds produced in accordance with the requirements of this part must be labeled in accordance with the requirements of § 205.306.

§ 205.609 Synthetic substances allowed for use in organic aquatic plant production.

[Reserved]

§ 205.610 Nonsynthetic substances prohibited for use in organic aquatic plant production.

[Reserved]

§ 205.611 – Synthetic substances allowed for use in organic aquatic animal production.

In accordance with restrictions specified in this section the following synthetic substances may be used in organic aquatic animal production:

- a) **As disinfectants, sanitizer, and medical treatments as applicable.**
- b) **As topical treatment, external parasiticide or local anesthetic as applicable.**
- c) **As feed supplements—None.**
- d) **As feed additives.**

(e) As synthetic inert ingredients as classified by the Environmental Protection Agency (EPA), for use with nonsynthetic substances or synthetic substances listed in this section and used as an active pesticide ingredient in accordance with any limitations on the use of such substances.

(f) Excipients, only for use in the manufacture of drugs used to treat organic livestock when the excipient is: Identified by the FDA as Generally Recognized As Safe; Approved by the FDA as a food additive; or Included in the FDA review and approval of a New Animal Drug Application or New Drug Application.

(g)–(z) [Reserved]

§ 205.612 Nonsynthetic substances prohibited for use in organic aquatic animal production.

The following nonsynthetic substances may not be used in organic aquatic animal production:

(a) Fish meal and fish oil from wild caught fish and other wild aquatic animals, *Except* if produced from environmentally responsible food grade wild caught fisheries and fed in the following step-wise levels: a maximum combined total of 25% during year 1 through 5 after this regulation is implemented, a maximum combined total of 15% during year 6 through 8, and a maximum combined total of 10% during year 9 through year 10, and a maximum combined total of 5% during year 11 and 12, with the percentages by weight of feed being averages over the production cycle of the aquatic animal.

(1) fish meal and fish oil may not be stabilized with synthetic stabilizers unless allowed on §205.611

(b) Feed from forage fisheries

(c) –(z) [Reserved]