



INTERNATIONAL FEDERATION OF ORGANIC AGRICULTURE MOVEMENTS

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**IFOAM Aquaculture Group Response to the National Organic Standards
Board Livestock Committee Recommendations for Organic Aquaculture**

Docket number AMS-TM-07-0032; TM-07-05.

Thank you for the opportunity to comment on the USDA NOSB Livestock Committee's recommendations for organic aquaculture.

We, the International Federation of Organic Agriculture Movements (IFOAM) Aquaculture Group, are a professional group of organic aquaculture producers, certification bodies, researchers and other interested parties with many years of experience and understanding in organic aquaculture production and certification. Through a highly democratic process, IFOAM's organic aquaculture standards were developed by members and finalized in 2005 for inclusion in the IFOAM Basic Standards.

IFOAM embraces organic production in all its diversity and recognizes that the species raised and systems used must be appropriate for the region and specific location of production. IFOAM does not place restrictions on specific species or systems in organic aquaculture, but instead places emphasis on how to produce species in a sustainable manner taking into account all aspects of environmental, economic and social dimensions of sustainability. IFOAM also recognizes that different sectors of organic production are at different stages of organic development. Because the organic aquaculture sector is still in its infancy, it is not surprising that

issues such as fishmeal and fish oil sourcing and environmental impacts of net cage operations are much-debated topics. We would like to address these issues and encourage the NOSB to consider options that would encourage innovative research thereby actively influencing more environmentally, economically and socially sound organic aquaculture production.

Sourcing Fishmeal and Fish Oil

Current NOSB Livestock Committee Recommendations:

§ 205.252 Aquaculture feed.

(a) Feeds and feeding practices must meet the minimum nutritional requirements of the aquatic animal. However, fish meal and fish oil produced from wild fish and other wild aquatic animals that do not qualify as provided in this section cannot be used in organic production of aquatic animals.

(b) Use of fish meal and fish oil * and 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 foods 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 may not contain lipids from sources other than fish oil or omega-3 fatty acids produced by organic microorganisms or plants, 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 under § 205.603

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 without limitation according to an Organic System Plan, providing

the meal and oil is produced from aquatic animals of a different genus 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 § 205.605 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 have been produced and handled in accordance

with organic requirements and allowed by the U.S. Food and Drug Administration for inclusion in aquaculture feeds may be used.

(j) Manure from organic terrestrial animals that is composted in compliance with §

205.203 may be used to fertilize aquaculture ponds in an organic production system.

Composted manure must not be applied within 30 days of harvest of aquatic products for

human consumption. Manure, whether composted or not, shall not be applied to aquaculture

production systems other than ponds.

(k) 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 by-products from mammalian or poultry slaughter;
- (4) use feedstuffs extracted with synthetic solvents not approved on the National List;
- (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.

IFOAM Aquaculture Group Suggested Revisions

Under the proposed standards:

§ 205.252 (b), It is not entirely clear what is meant here. Probably better to replace fish meal and fish oil with the words **“aquatic animal feeds”** since all feeds should have minimal impact on the environment. A comparable recommendation in the IFOAM Basic Standards, Aquatic Animal Nutrition Section 9.5 state *“Operators should feed animals efficiently, with minimum losses to the environment”*

§205.252 (c) ‘Aquatic animals must be provided with their natural foods.....’ - **supports the use of fishmeal and oil** in feeds for piscivorous livestock,

§205.252 (e) non-synthetic substances and synthetic substances allowed under § 205.603 may be used as feed additives and supplements - **permits the use of fishmeal and oil** in feeds for piscivorous livestock,

and §205.252 (1)(2) The producer of organic aquatic animals shall not ... 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 - **allows adequate levels of fishmeal and oil** to satisfy the nutritional requirements of piscivorous livestock.

IFOAM Aquaculture Group Comments and Supporting Documentation

The debate over the use of fishmeal and oil in organic aquaculture production has lasted over eight years starting when the first NOSB Livestock Committee organic aquaculture recommendations were released for comment in 1998. During that time, proponents and opponents of its inclusion have tried to argue how fishmeal and oil from wild sources could fall under the 100% organic feed rule for livestock in order for the livestock to be considered organic. The debate should have ended in 2002 with the release of the USDA National Organic Program Final Rule where the Preamble states:

*“Nonagricultural Products as Livestock Feed Ingredients. Some commentators questioned whether non-synthetic, nonagricultural substances **such as fishmeal** and crushed oyster shell needed to be added to the National List to be used in livestock feed. Non-synthetic substances do not have to appear on the National List and may be used in organic livestock feed, provided that they are used in compliance with the FFDCA.” (Department of Agriculture, Agriculture Marketing Service, 7 CFR Part 205, page 262)*

The IFOAM Basic Standards encourage sustainable use of resources and recommend that *“Feed brought into the operation should be comprised of by-products from organic and wild sources not otherwise suitable for human consumption”* (IBS Section 9.5), for example from trimmings, and cut-off wastes from aquatic species caught and filleted for human consumption (locally sourced where possible). We consider that converting these wastes into highly nutritious food is a suitable use of this resource. Additionally, IFOAM Basic Standards promote

sustainability by recommending that *“Operators should design systems so that the production area comprises the entire food chain with minimal reliance on outside sources”* (IBS Section 9.5). The IFOAM recommendation (IBS Section 9.5), *“Operators should design feed rations to supply most of the nutritional needs of the animal from organic plants and animals appropriate for the digestive system and metabolism of the species”* supports the idea that feeds must be appropriate for the cultured species’ trophic level (for instance, organic low-food-chain species should not be fed fishmeal and oil). The IFOAM Basic Standards do, however, provide an option for the use of non-organic aquatic animal protein and oil (if organic sources are not yet available), as needed for piscivorous species that require it, however it is with restrictive criteria. IBS Section 9.5.1.a. states that *“Operators may use non-organic aquatic animal protein and oil sources provided they are harvested from independently verified sustainable sources.”* The standards for the use of fishmeal and oil from wild fisheries for organic aquaculture must ensure that harvesting will be sustainable and not destructive to the environment.

The sustainable harvest of wild capture fisheries for fishmeal and oil must take the same approach as sustainable harvest for fisheries for direct human consumption. Much work has been done on this front and is based on the United Nations Food and Agriculture Organization’s Code of Conduct for Responsible Fisheries. From this document, certification bodies such as the Marine Stewardship Council, KRAV, Naturland and others are developing sustainable fisheries harvesting standards.

A well-managed fishery is a renewable sustainable resource whose appropriate harvest satisfies the philosophy behind the IFOAM Basic Principles of Health, Ecology, Fairness and Care. We would also urge the use of these resources to be put into perspective with existing terrestrial organic livestock feeds. For example, in 2006 the United States planted approximately 139 million acres of wheat, barley and corn (US National Agricultural Statistics Service). Approximately 60% of this grain is used in terrestrial livestock feeds. Therefore over

80 million acres of United States land is cleared of almost all its plant and animal life and ploughed back to the bare soil to grow crops to feed livestock. This is the case whether the land and animals are organic or non-organic.

Contaminants in feeds are another critical concern for organic aquaculturists and consumers alike. Contaminants are ubiquitous in the air, soil and water, and complete control over restricting the entrance of prohibited substances is impossible and unrealistic in virtually every setting imaginable. Through organic production, we hope to minimize the exposure of our crops and livestock to contaminants by not applying them to our fields or providing them through feed to our animals. Sourcing wild (capture) fisheries for fishmeal and oil low in contaminant levels is possible through 1) appropriate selection of harvest location and 2) processes that fish meal and oil manufacturers can now take to remove known contaminants (R. Nelson, Silvercup Feeds, personal communication). As added insurance, the IFOAM Basic Standards, Section 9.5.1.b. requires that *“Operators may use non-organic aquatic animal protein and oil sources provided they are verified to have contamination levels below limits established by the standard-setting body.”*

Feed formulation must address the nutritional and physiological requirements of the individual species of farmed animal (which, for example, leads to the allowance of fishmeal in organic poultry feeds). We support the limiting of individual ingredients for individual species where a rational case exists (for example limiting the fat or vegetable content of salmon feeds), but arbitrary blanket limits on ingredients such as the previously proposed 12% for fishmeal and oil serve no purpose, encourage the use of higher levels of nutritionally inferior ingredients, and risks negative impacts on animal welfare.

We would urge the NOSB to examine the IFOAM Basic Standards sections on aquatic animal nutrition (IFOAM, 2005), to reconsider the use of sustainable sources of fishmeal and oil, and to give a balanced perspective to the reality of feeding any farmed animal.

Open Water Net-cage* Containment Systems

*(*Note: we recognize that the terms net-pen and net-cage are increasingly used interchangeably, so for this document only, both terms are referring only to floating systems.)*

Current NOSB Livestock Committee Recommendations:

(j) Open water net-pens and enclosures are (not) permitted (at this time.)

IFOAM Aquaculture Group Suggested Revisions:

(j) Open water net-cages and enclosures are permitted where water depth, current velocity, direction, and other factors act to adequately disperse metabolic products in order to minimize accumulation of discharged solids on the sediments under net-cages. However, water currents should not cause fish to expend excessive energy to swim and be unable to consume feed. Monitoring shall be employed to ensure that the natural assimilative capacity at the site and adjoining waters is not exceeded. Facility managers shall take all practical measures to prevent transmission of diseases and parasites between cultured and wild aquatic animals. Use of multiple species of aquatic plants and animals to recycle nutrients must be included in every Organic System Plan for net-cages. Except as may be provided in § 205.601 or § 205.602, chemical treatment of biofouling organisms on nets is not allowed. Any open water net-cage or enclosure site must not have prohibited substances, as listed in § 205.105, applied for at least one year prior to beginning organic management.

IFOAM Aquaculture Group Comments and Supporting Documentation:

The IFOAM Basic Standards do not make specific reference to net-cage operations, instead relying on the General Principle 9.1 that *...“organic aquaculture production reflects the diversity of species and production methods.”* Still IFOAM Aquaculture Standards require that *“Operators shall take adequate measures to prevent escapes of introduced, or cultivated species and document any that are known to*

occur” (IBS Section: 9.2.2), and that *“Operators shall take verifiable and effective measures to minimize the release of nutrients and waste into the aquatic ecosystem”* (IBS Section 9.2.3) as these standards are relevant for any type of aquaculture system, not only net-cage operations.

Like all food production systems, an open water net-cage system for farmed fish clearly has an impact on the environment, but if appropriately sited, managed and fallowed, the effects are minimal. A report by the Scottish Executive on the Scottish salmon farming industry concluded: *“impacts on the seabed are ‘insignificant in terms of the total coastal resource’ and ‘except in a few enclosed waters, enrichment by fish farm nutrients is too little, relative to natural levels, to have the alleged effects [changes in the number, species or toxicity’s of phytoplankton blooms]”*

Ref - Scottish Executive, 2002, Review and Synthesis of the Environmental Impacts of Aquaculture

A comprehensive (five year) study by the Scottish Association for Marine Science concluded: *“we were not able to detect any clear environmental impact of medicine usage, or indeed any other farm activities, beyond the local scale”*

Ref - Scottish Association for Marine Science. 2005. Ecological effects of sea lice medicines in Scottish Sea Lochs. 222p

All farming systems are ‘open’. A timely reminder is the ongoing global alert for new cases of avian flu transported by migrating wild birds (and the recent infection of one of the UK’s most biosecure poultry units). Terrestrial farms are open to wild animals, animal-borne and airborne pests and diseases in exactly the same way as aquatic farms, and can transfer diseases and parasites from wild to farmed animals and vice-versa. Terrestrial farms are continually subjected to a cocktail of chemicals from wet and dry deposition, and they also release large amounts of solid, liquid and gaseous wastes into the surrounding environment. There are concerns for the impact on wild salmonids from sea lice and escapees. The risks are real, and this is the most troublesome aspect of open-water systems. Whether

they are acceptable for an organic system or not must be judged against the impact of terrestrial farms on terrestrial wildlife.

Major improvements in net cage operations in recent years suggest that these systems, while still high risk, are worthy of considering for organic aquaculture certification. At issue is a proven track record of demonstrated environmental responsibility therefore, in addition, implementing a conversion period (similar to required terrestrial crop conversion periods) could possibly be used to demonstrate the operator's commitment to environmental protection (including water quality, benthic substrate, containment of cultured organisms, biodiversity protection) of the site. The IFOAM Basic Standards Section 9.1.2 requires that "The conversion period of the production unit shall be at least one life cycle of the organism or one year, whichever is shorter" and IBS Section 9.1.3 requires that "Operators shall ensure that conversion to organic aquaculture addresses environmental factors, and past use of the site with respect to waste, sediments and water quality."

Open-water net-cage farming systems are currently used for the organic production of salmon, cod, tilapia, seabass, sea-bream, sea-trout, basa catfish and cobia. If adequately sited and run at a defined intensity, there is no clear reason that they should not qualify as organic operations in the US as they do in Europe or elsewhere. With a push toward increased offshore production of food fish in the US, these systems are likely to continue to develop and improve. At the maximum stocking density permitted by the existing European organic aquaculture standards, the fish take up a maximum of 1% of the space in the pen (2% for some species of fish). The pen floats in the fish's natural environment. The biodiversity surrounding an open water fish farm is much closer to pre-farm levels than that of a terrestrial farm, and overall we consider that these systems are appropriate under the IFOAM Basic Standards for Organic Production.

Respectfully submitted,



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