

**National Organic Standards Board
Crops Subcommittee Discussion Document
Wild, Native Fish for Liquid Fish Products
November 19, 2019**

Summary:

The use of fish in crop fertility products has a long history in organic agriculture. Over the past five years, the board has heard from stakeholders about potential negative environmental impacts of harvesting some marine materials for organic production. The purpose of this work agenda item is to assess the impact of harvesting wild, native fish for fertilizer and to ensure that liquid fish and other fish-based fertilizer products used in organic production are not harmful to the environment.

Background:

As part of the most recent sunset review of Liquid Fish Products (LFPs) under Section 205.601(j)(8) of the organic regulations, the subcommittee posed questions to stakeholders asking about the number of products using wild fish harvested solely for fertilizer versus products utilizing fish byproducts. The Board learned that the majority of LFPs use fish byproducts (offal), and some use whole fish harvested to control invasive species. At its Spring 2018 meeting, the Board received testimony that some manufacturers are using wild, native fish harvested exclusively for fertilizer. Consequently, the Crops Subcommittee (CS) requested the development of a [Technical Report \(TR\) on Fish-Based Fertilizers](#) to investigate this further.

Relevant Areas of the Rule:

OFPA Section 6517 [National List] (c) [Guidelines for Exemptions or Prohibitions] (1)(a)(i) and (2)(a)(i) which allows for the prohibition of synthetic or nonsynthetic substances, respectively, that would be “harmful to ... the environment.”

In its initial discussions, the subcommittee considered how any negative environmental impacts associated with harvesting wild, native fish exclusively for fertilizer might be addressed in the regulations. We explored the merits of an annotation to Section 205.601(j)(8) prohibiting the use of wild, native fish harvested solely for the manufacture of those materials, as well as listing wild, native fish harvested solely for fertilizer on Section 205.602. Ultimately, the subcommittee agreed that a prohibition on 205.602 alone would suffice as it would cover any products on 205.601(j)(8). There is no intention to exclude the use of farmed fish or invasive species that are harvested to protect native ecosystems.

Discussion:

In its TR request, the subcommittee asked the following questions:

- 1) During the Spring 2018 public meeting, the Crops Subcommittee asked if there are manufacturers using exclusively wild-caught, native fish to manufacture liquid fish fertilizers and learned that there are. Public testimony suggested that other non-synthetic fish-based fertilizers, such as fishmeal, may also be derived from wild fish harvested solely for fertilizer production.
Is any new information available about the impact of fish fertilizer manufacturing on the sustainability and health of wild, native fish stocks harvested solely for fertilizer production?

- 2) To what extent does the harvesting of wild, native fish exclusively for use as a fertilizer harm the environment?
- 3) Do different methods, locations, and/or frequencies of harvest pose different levels of risk for wild, native stocks?
- 4) Are there any species of wild, native fish for which there are no negative environmental impacts of harvest?
- 5) Are there any fish fertilizer products derived from farmed fish, and if so, are there any negative environmental impacts?
- 6) Are there any fish fertilizer products derived from wild, non-native fish populations, and if so, are there any negative or positive environmental impacts?
- 7) Please describe the environmental impact of using wild, native fish harvested exclusively for fertilizer versus using byproducts or invasive species.
- 8) Please provide universally agreed upon definitions of “wild, native fish”, “wild-harvested”, and “invasive species”.
- 9) Please provide examples of non-regulatory/practice-based approaches (e.g. training, guidance) that should be considered.

The findings of the TR were different from previous public comments. Specifically, the TR states that “based on available data, wild, native fish are not harvested solely for fertilizer production (see Table 1, in 268 Specific Uses of the Substance) (OMRI, 2019a). Rather, fish waste or otherwise unusable material is generally used as the starting material for fish-based fertilizers.” (TR Lines 267-69). This statement is explained below (TR Lines 93-109):

Of the 124 fish-based fertilizers listed by OMRI, 76 percent contained at least some wild fish, 15 percent contained at least some farmed fish, and 27 percent contained fish where it was not possible to tell if a source was farmed or wild (OMRI, 2019a). Products in some cases used various combinations of wild, farmed, and unknown fish. Twelve percent of products contained at least some fish meal, 45 percent contained at least some fish hydrolysate, and 43 percent contained at least some fish solubles. One product contained both meal and solubles and was counted in both groups.

It is worth noting that in Table 1, fish harvested for meal, oil, and solubles were not considered to be harvested solely for fertilizer production. The majority of fish-based fertilizers derived from the wet reduction process contain solubles—a material that is sometimes considered a byproduct of the process. A few products contain meal, but they do not also include fish oil; therefore, only a portion of the saleable fish biomass is utilized specifically for fertilizer and one cannot say that the fish were harvested exclusively for fertilizer use. An analogous example would be beef cows raised for steaks, ground meat, renderings and leather; those animals were not raised exclusively for any single one of those materials. Furthermore, only 2 percent of products contained fish meal that was derived from fish harvested specifically for wet reduction. The remaining 10 percent of products containing fish meal are derived from fish waste that undergoes further processing.

Table 1 in the TR states that of OMRI listed products, 43.5% are derived from market fish waste, 3.2% from bycatch and mortality, 31.5% from meal, oil, and solubles, 12.9% from market fish waste and bycatch/mortalities, 8.9% from market fish waste, meal, oil, and solubles, and 0% from fish sources specifically and exclusively for fertilizer.

The TR is extensive and goes on to answer the questions posed by the CS. While the amount of fish harvested globally for fertilizer is not available due to limited data, the TR addresses the generally negative impacts of commercial fishing on many wild, native stocks. The TR states:

Production of fish-based fertilizers could, to a small degree, drive demand for fish harvested for meal, oil, and solubles production. Fish-based fertilizers are unlikely to create demand for fish waste that drives fish harvesting rates for human consumption. The extent that harvesting wild, native fish for use as a fertilizer harms the environment is small compared to the primary uses of fish because of the difference in scale (Lines 319-23).

The TR goes on to explain that:

While none of the fish species known to be harvested for fish reduction purposes and which are incorporated into fish-based fertilizer products are threatened or endangered species (see Table 2), their population dynamics are not understood in many cases. It is also difficult to ascertain the effect of removing biomass, even from a sustainable fishery, considering that these species may be a food source for other species. Meal and oil fish can be critical to the function of entire ecosystems; for example, Pacific thread herring (*Opisthonema libertate*) and Pacific anchoveta (*Cetengraulis mysticetus*) are critical links in the Gulf of California, transferring energy through the food web and controlling the organization of these ecosystems (Hernandez-Padilla et al., 2017). (TR Lines 342-49)

The TR discusses some species used for meal/oil that have experienced documented declines, though not always exclusively as a result of over-fishing. It addresses the effects of large-scale harvesting on fisheries and ecosystems, though it notes the relationship to fish used in fertilizer is scale-dependent. Harvest methods, location and timing, and gear are discussed. The use and impacts of farmed fish for fertilizers is also explained.

Discussion Questions:

- 1) Given the results of the TR indicating that there are no species of wild, native fish harvested exclusively for use in LFPs, please provide feedback on any next steps the subcommittee should take on this issue.
- 2) The TR outlines the wet reduction process for fish meal, oil, and solubles and states that solubles are a byproduct of meal (solid phase) and oil (liquid phase) production. Because of the multiple products derived, it did not consider fertilizers using them to be from fish harvested exclusively for fertilizer. Please comment.
- 3) Please provide any additional information you may have to help answer the TR questions, particularly:
 - During the Spring 2018 public meeting, the Crops Subcommittee asked if there are manufacturers using exclusively wild-caught, native fish to manufacture liquid fish fertilizers and learned that there are. Public testimony suggested that other non-synthetic fish-based fertilizers, such as fishmeal, may also be derived from wild fish harvested solely for fertilizer production. Is any new information available about the impact of fish fertilizer manufacturing on the sustainability and health of wild, native fish stocks harvested solely for fertilizer production?

- Do different methods, locations, and/or frequencies of harvest pose different levels of risk for wild, native stocks?
- Please provide examples of non-regulatory/practice-based approaches (e.g. training, guidance) that should be considered.

Vote in Subcommittee

Motion to accept the Wild, Native Fish for Liquid Fish Products discussion document

Motion by: Emily Oakley

Seconded by: Harriet Behar

Yes: 7 No: 0 Abstain: 0 Absent: 1 Recuse: 0

Approved by Jesse Buie, Subcommittee Chair, to transmit to NOSB November 21, 2019