

## NOSB TACKLES SEAWEED & FISH-BASED INPUTS

The ocean is a vast resource where seaweed, fish, and other natural resources are harvested for use in a wide range of agricultural inputs and food ingredients. Seaweed-based soil conditioners and liquid fish fertilizers are common crop production inputs on farms. Kelp and fish meal are common nutritional feed supplements for livestock. Food for human consumption also relies on fish-based oils, edible seaweed, and seaweed derivatives like alginates. Inputs used in the production of certified organic crops, livestock, and processed food products must comply with the National Organic Program (NOP) National List of Allowed and Prohibited Substances.

In recent years, the environmental impact of harvesting seaweed and fish has received increased scrutiny. Extracting natural resources (including terrestrial resources like mined minerals and forest products) will impact the environment to some extent. The Organic Foods Production Act (OFPA) authorizes the National Organic Standards Board (NOSB) to recommend the allowance or prohibition of substances on the National List to ensure that use of input materials in organic production and processing is not harmful to the environment.

### CRITERIA FOR NOSB REVIEW OF INPUT MATERIALS

The organic law and regulations include a number of factors NOSB must consider when making a recommendation on the allowance of an input material. In sum, the conditions that must be met fall into three main criteria:

- 1) The input is **not harmful to human health or the environment**
- 2) The input is **necessary (essential)** for production and processing of organic products because of the unavailability of natural or organic alternatives
- 3) The input is **consistent (suitable)** with organic farming and handling and a system of sustainable agriculture

NOSB uses technical information to inform its evaluation of an input material against this criteria, and publishes its proposal for public comment. Final recommendations to amend the National List of Allowed and Prohibited Substances are submitted to USDA for implementation through rulemaking.

### INPUT APPROVAL VS. ORGANIC CERTIFICATION

Inputs include but are not limited to fertilizers, pest controls, livestock treatments, processing aids, and ingredients. These inputs are used in the production of crops, livestock, or processed food products. These inputs themselves are not *certified organic*, but rather they are *approved for use* in a certified organic production or processing system. The outputs of such system (e.g., apples, milk, granola bars) are what ultimately get certified and labeled as organic.

**Can seaweed be certified organic? YES** – The NOP regulations for crop production and wild-crop harvesting are applicable to any plant or non-animal species (e.g., macroalgae, fungi) harvested from terrestrial or aquatic areas. Certifiers use the NOP regulations as the basis for verifying, inspecting, and certifying cultured and wild crop harvested aquatic plants (Ref: [NOP Policy Memo 12-1](#))

**Can fish be certified organic? NO** – The NOP regulations for livestock production specifically exclude aquatic animals. NOSB has passed recommendations for aquaculture standards but NOP has not yet implemented them. Until aquaculture standards are codified in the NOP regulations, fish and other seafood are not eligible for organic certification.

## NOP REGULATIONS FOR SEAWEED AND FISH-BASED INPUTS

Inputs used in organic production and processing are subject to the requirements of NOP regulations. In general, synthetic substances are prohibited in organic crop and livestock production, and non-synthetic (natural) substances are allowed. Exceptions are codified on the National List (§205.601-205.604). Livestock feed has an additional requirement that agricultural ingredients must be certified organic. Ingredients and processing aids used in further manufacture of food for human consumption must be certified organic unless there is an exception codified on the National List (§205.605-205.606).

NOSB has worked on many topics related to the use of seaweed and fish-based inputs across the National List. Related NOSB Topics are identified in the table below and further explained in the next section.

<b>TABLE 1: REGULATIONS FOR SEAWEED AND FISH USED AS INPUTS</b>	<b>SEAWEED</b> (including any macroalgae and derivatives)	<b>FISH</b> (including any seafood and derivatives)
<b>CROP PRODUCTION INPUTS</b> (e.g. fertilizers, soil amendments, pest and disease controls)	<p><b>Seaweed is allowed provided that it has not been synthetically processed and no prohibited additives.*</b>  <i>[See NOSB Topic #1,2]</i></p> <p><b>If used as a fertilizer or soil amendment, seaweed may be extracted with potassium hydroxide or sodium hydroxide per §205.601(j)(1).*</b>  <i>[See NOSB Topic #3,4]</i></p>	<p><b>Fish is allowed provided that it has not been synthetically processed and no prohibited additives.*</b>  <i>[See NOSB Topic #5]</i></p> <p><b>Liquid fish products may be pH adjusted with sulfuric, citric or phosphoric acid per §205.601(j)(8).</b>  <i>[See NOSB Topic #6]</i></p> <p><b>Squid byproducts from food waste processing may be pH adjusted with sulfuric, citric or phosphoric acid per §205.601(j)(10)</b>  <i>[See NOSB Topic #7]</i></p>
<b>LIVESTOCK PRODUCTION INPUTS</b> (e.g. feed additives, medical treatments, external pest control)	<p><b>Seaweed is allowed provided that it has not been synthetically processed and no prohibited additives.*</b></p> <p><b>If used as a livestock feed ingredient, seaweed must be <u>certified organic</u>.**</b></p>	<p><b>Fish is allowed provided that it has not been synthetically processed and no prohibited additives.*</b></p>
<b>INGREDIENTS &amp; PROCESSING AIDS IN FOOD FOR HUMAN CONSUMPTION</b> (including dietary supplements and any other organic processed products)	<p><b>Seaweed and any derivatives must be <u>certified organic</u>, <u>except</u> for certain substances that are listed on the National List:</b></p> <ul style="list-style-type: none"> <li>- <b>Agar-agar</b> <i>[See NOSB Topic #8]</i></li> <li>- <b>Carrageenan</b> <i>[See NOSB Topic #9]</i></li> <li>- <b>Alginates</b> <i>[See NOSB Topic #10]</i></li> <li>- <b>Alginic acid</b> <i>[See NOSB Topic #11]</i></li> <li>- <b>Kelp</b> <i>[See NOSB Topic #12]</i></li> <li>- <b>Pacific Kombu seaweed</b> <i>[See NOSB Topic #13]</i></li> <li>- <b>Wakame seaweed</b> <i>[See NOSB Topic #14]</i></li> </ul>	<p><b>Fish and any derivatives must be <u>certified organic</u>, <u>except</u> for certain substances that are listed on the National List:</b></p> <ul style="list-style-type: none"> <li>- <b>Fish oil</b> <i>[See NOSB Topic #15,16]</i></li> </ul> <p>(Note: Gelatin and Beta-carotene Color may also be sourced from fish or algae, respectively.)</p>

\* **Note about non-synthetic crop and livestock inputs:** Materials that are classified as “non-synthetic” according to NOP Instructions on Classification of Materials are allowed unless they are specifically listed on the National List as a prohibited substance. No such listings for non-synthetic seaweed or fish-base inputs appear on the National List, so they are allowed without needing NOSB review or NOP rulemaking.

\*\* **Note about livestock feed:** Agricultural ingredients in livestock feed are not subject to NOSB review and do not have individual listings on the National List. There is an overarching requirement at §205.237(a) that all agricultural products in organic livestock feed must be certified organic, and this includes kelp. NOP has explicitly classified kelp as an agricultural substance in [NOP Guidance 5027](#).

## NOSB TOPICS

NOSB has had many work agenda topics related to the development of recommendations for the allowance or prohibition of seaweed and fish-based inputs used in organic production and processing. Most of these topics are routine Sunset Reviews of current listing on the National List which is required every 5 years to ensure continued compliance with OFPA criteria. Other topics may emerge from petitions or other NOP-directed or NOSB-requested work agenda items.

### #1: Marine Materials in Crop Production

The NOSB Materials Subcommittee is evaluating the environmental impact of harvesting marine materials (seaweed, kelp, macroalgae) to ensure that the use of these materials in seaweed-based fertilizers is not harmful to the environment. Despite the generic “marine materials” title, this NOSB topic is focused only on seaweed materials and has not included fish.

This topic has been on the NOSB Materials Subcommittee work plan since 2018, although the topic originated from the Crops Subcommittee in 2015 during its Sunset Review for Aquatic Plant Extracts (See NOSB Topic #3), when concerns were raised about the increase in global harvesting of seaweed and the accelerated potential for destruction of marine ecosystems.

To more fully examine the sources, species, harvest methods, and specific usage of marine plants and algae in organic production and processing, NOSB commissioned a Technical Report. The [Technical Report](#) was completed and published in 2016. A [discussion document](#) posted for the fall 2016 NOSB meeting addressed the 9 separate listings for marine materials on the National List (Crops and Handling), and posed questions about the nomenclature of marine plant/algae on the National List, the need to specify uses or harvesting guidelines of certain species, and whether further NOP guidance is needed.

In 2018 the Materials Subcommittee began its work in earnest to evaluate environmental impacts and consider whether restrictions on harvesting seaweed for use in fertilizers is warranted. The NOSB Materials Subcommittee posted a [discussion document](#) for the fall 2018 meeting that explored a potential requirement for marine plants to be certified organic when used in crop inputs, and a number of alternative approaches such as: limiting or prohibiting harvest of certain marine algae; exploring other existing third-party standards for sustainable harvesting; or adding annotations to material listings on the National List to require sustainable harvesting.

In spring 2019, the Materials Subcommittee presented another [discussion document](#) on the approach of requiring organic certification of marine algae ingredient in crop inputs, attempting to address the concerns raised at the previous meeting. The discussion document also puts forth additional discussion questions for stakeholder feedback. In fall 2019, the Materials Subcommittee presented the same [discussion document](#) from spring 2019 with one additional discussion question.

There was also an [Expert Panel](#) on Marine Materials at the fall 2019 NOSB meeting, composed of two scientists (Dr. Allison Schmidt, *Dalhousie University*, and Dr. Nichole Price, *Bigelow Laboratory for Ocean Sciences*), one harvester (Dr. Rahul Ugarte, *Acadian Seaplants Ltd.*), and one certifier (Chis Grigsby, *Maine Organic Farmers and Gardeners Association [MOFGA] Certification Services*) who each presented technical information to the Board.

A wealth of technical information about seaweed harvesting has been submitted from scientists and industry through public comments, technical reports, and an expert panel. Still, many questions remain unanswered about globally-representative data, extent of existing legal oversight, and feasibility of various solutions.

In its closing remarks at the fall 2019 meeting, the Materials Subcommittee continued to express interest in a requirement for organic certification of marine materials used in crop inputs, but only if: 1) NOP can commit to establishing a task force to develop more specific guidelines for organic production and certification of marine materials; and 2) the requirement is paired with an ample implementation time period. The subcommittee will

also consider the option of narrowing its focus only on the species that are more highly used. There was agreement across the board with general sentiments about the importance of protecting the environment, but conflicting opinions about how to move forward with this particular issue. Some board members identified a need for information that is more globally representative, as much of the discussion thus far is focused on Maine and Nova Scotia. There are outstanding questions about the logistics and practicality of organic certification of marine production systems.

Overall, NOSB has expressed an interest in taking a slow and careful approach to this complex issue. A clear path forward is not yet apparent. The spring 2020 NOSB Meeting agenda does not include this topic.

## #2: Laminarin

Laminarin is a **brown seaweed extract** manufactured by an acid-base reaction. In 2013, it was petitioned for allowance as a pre-harvest pesticide to stimulate the plants' natural disease defense mechanisms. A [Technical Report \(2015\)](#) was commissioned to clarify the whether the extraction and purification process resulted in a synthetic material, and to examine the environmental effects of seaweed harvest and processing.

At the fall 2015 meeting, NOSB made a [final recommendation](#) to classify the substance as “non-synthetic” and allow its use. No further rulemaking action is needed to permit a non-synthetic substance in crop production. On the question of environmental impact, NOSB stated that “the potential impacts are similar to many other non-synthetic inputs used in organic agriculture that are harvested or mined from the earth and sea,” and ultimately voted that the substance satisfied OFPA criteria for not harming the environment (9 yes, 3 no, 2 abstain).

## #3: Aquatic Plant Extracts – Sunset Review §205.601(j)(1)

Aquatic plant extracts are currently listed on the National List at §205.601(j)(1) as allowed as plant or soil amendments for organic crop production: *Aquatic plant extracts (other than hydrolyzed) – Extraction process is limited to the use of potassium hydroxide or sodium hydroxide; solvent amount is limited to that amount necessary for extraction.*

The last Sunset Review was conducted in 2015 when NOSB approved it for relisting but only by a slim margin ([NOSB Final Recommendations on Crop Sunset Reviews, starts on Page 21](#)). On a motion to remove the listing, the votes were 5 to remove, 6 to keep, and 3 abstentions. NOSB indicated concerns around overharvest of seaweed for this purpose but acknowledged aquatic plant extracts are still necessary for organic production of organic fruits and vegetables. Comments about the environmental impact concerns were very regional in nature. At the time, NOSB indicated it would be requesting a Technical Report to examine the environmental impact of harvesting certain species of aquatic plants.

The [Technical Report](#) was completed and published in 2016. A [discussion document](#) posted for the fall 2016 NOSB meeting addressed the 9 separate listings for marine materials on the National List (Crops and Handling), and posed questions about the nomenclature of marine plant/algae on the National List, the need to specify uses or harvesting guidelines of certain species, and whether further NOP guidance is needed.

To address nomenclature questions for the crop listing, NOSB's Crops Subcommittee presented a [proposal](#) in spring 2017 to limit the §205.601(j) listing of aquatic plant extracts to only brown seaweed. Public comments revealed that aquatic plant input products also use green and red algae, so the proposal was sent back to subcommittee to re-examine its approach to the issues. [[Read OTA's Comments](#)]

Since 2018, there has been extensive discussion within the Materials Subcommittee about the environmental impact of harvesting aquatic plants for use in crop fertilizer products. [See NOSB Topic #1]

For the spring 2020 NOSB Meeting, the Crops Subcommittee presents its [Sunset Summary and Request for Comments on Aquatic Plant Extracts \(starts on Page 27\)](#).

#### **#4: Brown Seaweed Extract (with Sulfuric Acid)**

In 2014, Brown Seaweed Extract was petitioned for use as a fertilizer. The specific petitioned formulations are manufactured in a three-step process whereby 1) seaweed is harvested and extracted w/tap water whose pH is lowered to a 3.5 minimum by adding a low concentration of sulfuric acid, 2) the mixture is centrifuged to separate seaweed insoluble from liquid extract, and 3) potassium hydroxide is added to adjust the pH of the liquid extract to near neutral.

At the fall 2015 meeting, NOSB unanimously passed a [final recommendation](#) to classify the petitioned substance as synthetic and to prohibit its use in organic production. The reason for prohibition is cited as “Because OFPA prohibits the use of any fertilizers containing synthetic ingredients, Brown Seaweed as petitioned cannot be added to the National List.” On the question of environmental impact, the NOSB recommendation indicates that the substance satisfied OFPA criteria for not harming the environment.

#### **#5: Wild, Native Fish in Liquid Fish Products**

The NOSB Crops Subcommittee is evaluating the use of wild, native fish harvested for use in fertilizer to ensure that liquid fish and other fish-based fertilizer products used in organic crop production are not harmful to the environment. This is a new NOSB topic being presented for the first time on the spring 2020 Meeting agenda.

This topic evolved out of the Sunset Review for Liquid Fish Products in 2018 (See NOSB Topic #6), when concerns around the harvesting of wild fish exclusively for organic fertilizer production prompted NOSB to collect more information on how much this happens, and whether additional restrictions would be needed so that growth in organic production does not negatively impact wild fish stocks. NOSB requested development of a Technical Report on the composition, usage, and sourcing of fish-based fertilizers.

The [Technical Report](#) was completed and released in 2019. The report found that wild, native fish are not harvested solely for fertilizer production, and that fish waste or otherwise unusable material generally is used as the starting material for fish-based fertilizers.

For the spring 2020 NOSB meeting, the NOSB Crops Subcommittee presents a [Discussion Document on Wild, Native Fish for Liquid Fish Products](#) that includes the following questions for stakeholder feedback on any next steps the subcommittee should take on this issue.

#### **#6: Liquid Fish Products – Sunset Review 205.601(j)(8)**

Liquid fish products are currently listed on the National List at §205.601(j)(8) as allowed as plant or soil amendment for organic crop production: “*Liquid fish products—can be pH adjusted with sulfuric, citric or phosphoric acid. The amount of acid used shall not exceed the minimum needed to lower the pH to 3.5.*” A [Technical Report](#) was commissioned in 2006 for Liquid Fish Products.

The last Sunset Review was conducted in 2018. At the spring 2018 meeting, NOSB posed several questions for public comment regarding the harvesting of fish species for use in liquid fish products. Ultimately at the fall 2018 meeting, NOSB unanimously approved it for relisting ([NOSB Final Recommendations on Crop Sunset Reviews, starts on page 20](#)). Despite wide support for continued allowance of liquid fish fertilizers, concerns around the environmental impact of harvesting wild fish exclusively for organic fertilizer production prompted NOSB to pursue a separate work agenda item on this subject. [See NOSB Topic #5]

## #7: Squid Byproducts

NOSB received a petition to add squid products to the National List for use as a fertilizer. A [Technical Report](#) was commissioned and published in January 2016. The [NOSB Final Recommendation on Squid Byproducts](#) was passed in spring 2016 (votes were 11 in favor and 4 against). On the question of environmental impact, NOSB's intent was only to allow squid from the processing waste stream; the proposal was not intended to allow the use of whole squid in the manufacture of fertilizers.

NOP completed final rulemaking on December 27, 2018 to implement the NOSB Recommendation. Squid byproducts are now currently listed on the National List at §205.601(j)(10) as allowed as plant or soil amendment for organic crop production: *Squid byproducts—from food waste processing only. Can be pH adjusted with sulfuric, citric, or phosphoric acid. The amount of acid used shall not exceed the minimum needed to lower the pH to 3.5.*

## #8: Agar-agar – Sunset Review §205.605(a)

Agar-agar is currently listed on the National List at §205.605(a) as an allowed non-synthetic substances in organic processed foods. Agar-agar is derived from **red seaweed**. The last [Technical Report](#) was completed in 2011.

The last Sunset Review was conducted in 2016 when NOSB unanimously approved it for relisting ([NOSB Final Recommendations on Handling Sunset Reviews](#), starts on Page 2). On the question of environmental impact, NOSB stated that the “Technical Report indicated limited evidence of effects on biodiversity; All marine materials on the National List, including agar-agar, are currently being reviewed as a group by the Handling Subcommittee. Included in the review is the consideration of sustainable harvesting.” This topic is not currently an active work agenda item for the Handling Subcommittee; The Materials Subcommittee is only looking at seaweeds used in crop production.

## #9: Carrageenan – Sunset Review §205.605(a)

Carrageenan is currently listed on the National List at §205.605(a) as an allowed non-synthetic substances in organic processed foods. Carrageenan is derived from **red seaweed**. A [Technical Report](#) was completed in 2011 and a Limited Scope Technical Report on Human Health was completed in 2016. See also NOSB Topic #17 regarding nomenclature of marine materials on the National List.

The last Sunset Review of carrageenan was conducted in 2016 when NOSB voted to remove the listing due to a lack of essentiality for processing organic products and the availability of alternatives ([NOSB Final Recommendations on Handling Sunset Reviews](#), starts on Page 4). On the question of environmental impact, NOSB concluded that “The probability of environmental contamination during manufacture, use, misuse, or disposal of such substance; there may be negative impacts on the environment from harvesting wild seaweed. Indications are that most of this species of seaweed is now farmed, and some farming methods are more sustainable and ecologically sound than others.”

Despite the NOSB recommendation, NOP renewed the listing because it found sufficient evidence in public comments to NOSB that carrageenan continues to be necessary for handling agricultural products because of the unavailability of wholly natural substitutes.

## #10: Alginates – Sunset Review §205.605(b)

Alginates are currently listed on the National List at §205.605(b) as an allowed synthetic substance in organic processed foods. Alginates are alkali-extracted from the cell walls of **brown seaweed**.

Alginates have been approved for use in organic foods since the National Organic Program rule was published in 2000. A 2015 [Technical Report](#) detailed the production of, use of, and alternatives to alginates. See also NOSB Topic #17 regarding nomenclature of marine materials on the National List.

The last Sunset Review was conducted in 2018 when NOSB unanimously approved it for relisting ([NOSB Final Recommendations on Handling Sunset Reviews](#), starts on Page 12) despite its conclusion that “issues of sustainable harvesting of seaweeds, disturbances of marine ecology through their harvesting, and bioaccumulation of contaminants such as heavy metals and radioactivity should be accounted for in the review of this material.”

### **#11: Alginic acid – Sunset Review §205.605(b)**

Alginic acid (CAS #9005-32-7) is currently listed on the National List at §205.605(b) as an allowed synthetic substances in organic processed foods. Alginic acid is derived from **brown seaweed** through alkali treatment and acid precipitation. A [Technical Report](#) was completed in 2015. The listing for alginic acid used to appear on §205.605(a) as a non-synthetic, but was reclassified to §205.605(b) as a synthetic based on an NOSB Recommendation from fall 2015 and was implemented through NOP final rulemaking on December 27, 2018. See also NOSB Topic #17 regarding nomenclature of marine materials on the National List.

The last Sunset Review was conducted in 2019 when NOSB unanimously voted to remove the listing due to a lack of essentiality for processing organic products ([NOSB Final Recommendations on Handling Sunset Reviews](#), starts on Page 12). In the subcommittee review preceding the full board vote, the subcommittee identified concerns in the public comment about potential over-harvesting and impacts on local ecosystems, although these concerns were not a determining factor in final NOSB decision to remove the listing. NOP has not yet begun rulemaking to implement this recommendation.

### **#12: Kelp – Sunset Review §205.606(k)**

Kelp is currently listed on the National List at §205.606(k) as an allowed thickener and dietary supplement in organic processed foods only when certified organic forms are not commercially available. See also NOSB Topic #17 regarding nomenclature of marine materials on the National List. A dedicated Technical Report has not occurred since its pre-NOP technical advisory panel report in 1995, although kelp is generally addressed in the [Marine Plants and Algae Technical Report \(2016\) \(Crops and Handling\)](#) along with 8 other substances.

The last Sunset Review for the §205.606 listing of kelp was conducted in 2015 when NOSB approved it for relisting ([NOSB Final Recommendations on Handling Sunset Reviews \(starts on Page 49\)](#)). On a motion to remove, the votes were 4 to remove, 8 to keep, and 2 abstentions. Questions of environmental impact were not raised or documented in the subcommittee proposal of final NOSB recommendation.

For the spring 2020 NOSB Meeting, the NOSB Handling Subcommittee presents its [Sunset Summary and Request for Comments on Kelp \(starts on Page 73\)](#).

### **#13: Pacific Kombu seaweed – Sunset Review §205.606(r)**

Pacific Kombu seaweed is currently on the National List at §205.606(r) as an agricultural substance allowed for use in organic processed foods only when the product is not commercially available in organic form. See also NOSB Topic #17 regarding nomenclature of marine materials on the National List. A dedicated Technical Report has not occurred, although kelp is generally addressed in the [Marine Plants and Algae Technical Report \(2016\) \(Crops and Handling\)](#) along with 8 other substances.

The last Sunset Review was conducted in 2019 when NOSB approved it for relisting by a vote of 9-3 with 1 abstention and 1 absence ([NOSB Final Recommendations on Handling Sunset Reviews](#), starts on Page 25). Commercially available certified organic forms are not available, but some members of NOSB want to see these materials being certified organic under the wild crop standard. On the question of environmental impact, the NOSB stated, “As a marine material, use of Kombu seaweed is part of an ongoing discussion focused on environmental concerns about the harvesting and use of marine algae and related materials, and whether standards preventing overharvesting are needed to protect ocean environments.” This topic is not currently an active work agenda item for the Handling Subcommittee; The Materials Subcommittee is only looking at seaweeds used in crop production.

#### **#14: Wakame seaweed – Sunset Review §205.606(v)**

Wakame seaweed (*Undaria pinnatifida*) is currently on the National List at §205.606(v) as an agricultural substance allowed for use in organic processed foods only when it is not commercially available in organic form. A dedicated Technical Report has not occurred, although kelp is generally addressed in the [Marine Plants and Algae Technical Report \(2016\) \(Crops and Handling\)](#) along with 8 other substances.

The last Sunset Review was conducted in 2019 when NOSB approved it for relisting by a vote of 9-3 with 1 abstention and 1 absence ([NOSB Final Recommendations on Handling Sunset Reviews](#), starts on Page 26). Commercially available certified organic forms are not available, but some members of NOSB want to see these materials being certified organic under the wild crop standard. On the question of environmental impact, the NOSB stated, “As a marine material, use of Wakame seaweed is part of an ongoing discussion focused on environmental concerns about the harvesting and use of marine algae and related materials, and whether standards preventing overharvesting are needed to protect ocean environments.” This topic is not currently an active work agenda item for the Handling Subcommittee; The Materials Subcommittee is only looking at seaweeds used in crop production.

#### **#15: Fish Oil – Sunset Review §205.606(e)**

Fish oil is currently on the National List at §205.606(e) as an agricultural substance allowed for use in organic processed foods only when it is not commercially available in organic form. It is used as a nutritional supplement to increase the content of omega-3 fatty acids in a variety of food products. The listing reads: *Fish oil (Fatty acid CAS #'s: 10417-94-4, and 25167-62-8)—stabilized with organic ingredients or only with ingredients on the National List, §§205.605 and 205.606.* A [Technical Report](#) was completed in 2015.

The last Sunset Review was conducted in 2019 when NOSB approved it for relisting by a vote of 11-0 with 2 abstentions and 1 absence ([NOSB Final Recommendations on Handling Sunset Reviews](#), starts on Page 12). Because there are no aquaculture standards under the National Organic Program, it is not possible to require organic certification of fish or fish oil, and therefore organic alternatives remain absent. In the public comment during the sunset review, several interest groups questioned the environmental impact from overfishing, prompting NOSB to develop a separate work agenda item on this issue (See NOSB Topic #16).

#### **#16: Fish Oil annotation change**

The NOSB Handling Subcommittee is evaluating the use of fish harvested for its oil to ensure that fish oil used as an ingredient in organic food is not harmful to the environment. This is a new NOSB topic being presented for the first time on the spring 2020 Meeting agenda. This topic evolved out of the Sunset Review for Fish Oil in 2019 (See



NOSB Topic #15), when environmental and conservation concerns were raised about the harvesting of fish directly for their oil.

For the spring 2020 NOSB meeting, the NOSB Handling Subcommittee presents a [Discussion Document on Fish Oil Annotation Change](#). The Handling Subcommittee is proposing new restrictions informed by classifications used the National Oceanic and Atmospheric Administration (NOAA) and United Nations Food and Agricultural Organization (FAO). The Handling Subcommittee proposes the following new annotation (**bold text is new**) and presents several questions for stakeholder feedback.

§205.606 (e) Fish oil (Fatty acid CAS #'s: 10417-94-4, and 25167-62-8) - stabilized with organic ingredients or only with ingredients on the National List, §§205.605 and 205.606. **Sourced from fishing industry by-product only. Where within NOAA's jurisdiction, only from fish species and regions not listed on NOAA's current "Overfishing" or "Overfished" list. Where outside NOAA's jurisdiction, only from fish species and regions not listed on FAO's "Overexploited," "Depleted," or "Recovering."**

## #17: Nomenclature of Marine Algae Listings on National List

This topic is a result of a [discussion document](#) posted for the fall 2016 NOSB meeting that addressed the 9 separate listings for marine materials on the National List (Crops and Handling), and posed questions about the naming conventions of marine plant/algae on the National List, the need to specify uses or harvesting guidelines of certain species, and whether further NOP guidance is needed. (See NOSB Topic #3 for crop listing).

To address nomenclature questions for the handling listing, NOSB's Handling Subcommittee presented a [proposal](#) in spring 2017 to clarify and annotate the marine algae listing on §205.605-606 through use of Latin binomials (**bold text is new**):

§205.605 Nonagricultural (nonorganic) substances allowed as ingredients in or on processed products labeled as "organic" or "made with organic (specified ingredients or food groups)."

(a) Nonsynthetics allowed:

Acids (Alginic; ...). **Derived from brown seaweeds, class Phaeophyceae**

Agar-agar. **Derived from red seaweeds, class Rhodophyceae**

Carrageenan. **Derived from red seaweeds, class Rhodophyceae.**

(b) Synthetics allowed:

Alginates. **Derived from brown seaweeds, class Phaeophyceae.**

§205.606 Nonorganically produced agricultural products allowed as ingredients in or on processed products labeled as "organic."

(d) Colors derived from agricultural products-must not be produced using synthetic carriers and solvent systems or any artificial preservative.

(2) Beta-carotene extract color derived from carrots or algae (pigment CAS 1393-61-1).

**Derived from green algae, class Chlorophyceae.**

(l) Kelp – for use only as a thickener and dietary supplement. **Derived from *Macrocystis pyrifera*, *Laminaria digitata*, *Laminaria saccharina* and *Laminaria cloustoni*.**

(t) Seaweed, Pacific Kombu, **derived from *Laminaria japonica*, class Phaeophyceae**

(x) Wakame Seaweed (*Undaria pinnatifida*)

The Subcommittee's proposal also recommended that NOP develop guidance to clarify the term "kelp" as used in organic production and wild harvesting. The proposal was ultimately referred back to subcommittee for further work. This topic is not currently an active work agenda item for the Handling Subcommittee.