

**National Organic Standards Board  
Materials Subcommittee Discussion Document  
Marine Materials in Organic Crop Production  
February 12, 2019**

**NOTE:**

The discussion document on Marine Materials in Organic Crop Production was presented at the April 2019 NOSB meeting and is being posted a second time for additional comment. It is identical to the April 2019 version with the exception of the addition of question #8 (page 11).

**SUMMARY:**

At its Fall 2018 board meeting, the NOSB explored a means of addressing the environmental impact of harvesting marine algae<sup>1</sup> for use in organic crop production inputs through a proposed requirement that marine algae under §205.601 (j)(1) aquatic plant extracts and other nonsynthetic uses be certified organic. This discussion document highlights the public comments received, presents the various methods proposed, and puts forth additional discussion questions for stakeholders in anticipation of a fall 2019 proposal.

**BACKGROUND:**

The Organic Foods Production Act National List criteria require, among other things, that materials not be harmful to the environment (7 USC 6517(c)). The NOSB has received extensive public testimony over the past several years regarding overharvesting of many marine algae species and the potential for contamination and harm to ecosystems. Stakeholders have agreed that organic agriculture should not contribute to this problem. The NOSB is exploring the best means of accounting for and minimizing the environmental impact of marine algae used in organic crop production inputs. This discussion document reviews the various methods that have been suggested to achieve that goal in hopes of identifying a proposed change to the standards that will be supported by a diverse organic community.

For detailed information on the relevant areas of the rule, please see the [Material Subcommittee's Fall 2018 Discussion Document](#).

**PUBLIC COMMENT<sup>2</sup>:**

A spectrum of written and oral public comments was received, from support for organic certification, to those stating that marine algae should not be harvested at all for use in organic crop inputs due to negative environmental effects, to those concerned about the feasibility of applying organic certification to a crop input. Despite the range of views, there was broad agreement on the importance of working on this issue.

<sup>1</sup> For the purposes of this document, the term “marine algae” is used to refer to aquatic plants, marine plants, seaweed, and marine vegetation.

<sup>2</sup> For a summary of public comments of NOSB documents on this topic prior to Fall 2018 and for a review of the 2016 Technical Report, please see the [Materials Subcommittee's Fall 2018 Discussion Document](#). These cover issues of overharvesting, selective harvesting, and cultivation.

Authority to Require Certification for an Ingredient in an Organic Crop Input:

Some commenters questioned the authority of the NOSB to require organic certification of a crop input ingredient. One commenter explained that inputs are not under §205.100 which outlines what must be certified. Another said that while they understood the positive intentions of the proposal, they opposed applying §205.207 to crop inputs as they understand that section to apply only to crop outputs.

Some worried about a domino effect that might result in requiring organic certification on a crop input ingredient. One stated:

Marine materials harvested for use as an agricultural input should not be equated to the definition of a wild crop or an agricultural product when its purpose is not for human or livestock consumption. Requiring the certification of crop production materials that are not intended for human or livestock consumption sets a precedent for all agricultural inputs that are marine (or terrestrial) plant-based.

One commenter expressed the sentiment that “certification of inputs has been found to be outside of the scope of the NOP as established by OFPA”. These commenters noted the proposed recommendation would require the certification of “inputs to an input”. One commenter thought this would conflict with NOP’s guidance that inputs cannot be certified. They asked if certification of the input’s formulator would also be required or if it would be deemed sufficient to check the certification of the marine algae ingredient during a Materials Review Organization’s review of a brand name product.

These concerns were answered in detail by another commenter:

...Organic certification under the crop or wild crop standards should be required only of the aquatic plant ingredient within a formulated crop input. Handlers that further process and/or formulate the organic aquatic plants into final crop fertility input products should not be required to be certified.

This approach is similar to livestock feed additives that contain agricultural ingredients, in which the agricultural ingredient must be organic, but the final formulated product is not required to be certified as a processed product. As required by §205.237(a), agricultural ingredients included in the ingredients list for livestock feed additives and supplements must be certified organic. However, there is no requirement that that handlers that use organic agricultural ingredients in the formulation of final feed additive product have to be certified organic.

This approach will avoid complications that might arise from crop fertility inputs being certified organic under NOP, which has historically excluded crop input materials from its scope of certification and enforcement. Crop fertilizers and pesticides are generally considered to be outside of NOP’s scope of organic certification because they are not intended for human or livestock consumption, and therefore do not meet NOP’s definition of “agricultural product” at §205.2. Furthermore, it would be confusing and unrealistic to expect that formulated crop input products meet organic certification for processed products in terms of permitted ingredients and organic product composition requirements.

Clarification on the requirements for labeling crop inputs that contain organic ingredients will also be needed. NOP regulates the term “organic” as it applies to agricultural products, which has historically only included products intended for livestock or human consumption. Thus, NOP does not have enforcement authority over organic claims on fertilizers, soil amendments, and other crop input materials (i.e., fertilizers that are not certified organic can still be marketed as

“organic” and without violating NOP regulations). Certifiers will not be able to use organic claims on crop inputs as a means of verify organic status and must obtain proper organic certification documents for the aquatic plant ingredient to verify organic status.

Several commenters said verifying the organic status of an ingredient is not onerous, and that requiring organic certification of the marine algae ingredient would be similar to the verification of molasses as an organic input. Others explained that §205.207 is already being used to certify marine algae for human food, as livestock feed, and as a crop input ingredient. There are already a number of crop input products on the market that contain a certified organic marine algae ingredient. A manufacturer of organic fertilizers shared support for additional guidance and shared that they use certified organic kelp meal for their products.

#### Effectiveness of Using Organic Certification to Address Environmental Impact:

There were a broad range of opinions as to whether requiring organic certification is the right means to ensure that the harvest of wild marine algae is not harmful to the environment. Some producers of crop input products using marine algae were satisfied with the status quo, saying that current government standards are sufficient. A manufacturer harvesting marine algae off the coast of Mexico said they are adequately regulated through permits that stipulate the methods and quantities of harvest. Another producer noted that while some government regulations limit harvest rates, no government entities do on-site boat inspections. Government harvest limits and reviews are performed off-site and through paper trail audits, unlike the organic certification process which involves on-boat inspection of harvest locations, among other areas. The producer emphasized that it is not in their interest to over-harvest and in their case, scientists are hired to prepare and implement management plans. Certain producers of rockweed currently certify some of their harvest to the wild crop standard, and one testified that they could expand organic certification to all of their harvest.

A substantial number of residents in Maine expressed reservations about habitat loss, by-catch, frequency of harvest, and re-growth rates with mechanical harvesting of rockweed (*Ascophyllum nodosum*). Some said the term “sustainable harvest” fails to recognize the habitat role of rockweed. A number were affiliated with wildlife refuges and conservation areas, and they asserted that rockweed in particular, cannot meet the criteria for certification under §205.207 because of ecosystem damage caused by large biomass removal. One former wildlife refuge manager said that state and federal officers cannot fully regulate and police mechanized harvest boats. A landowner documented that two different companies harvested rockweed off of his property within 18 months of each other, despite his requests that they not. Some commenters said that organic certification of rockweed pushes harvesters into conservation areas and offered first-hand experiences observing rockweed harvested repeatedly from preserves. Some commenters from Maine requested that rockweed be listed as a prohibited natural on §605.602.

A number of commenters stated that trying to use organic certification would be inadequate to resolve the environmental impact of harvesting. A commenter stated:

Currently, the standards are not detailed enough to meet the needs of the seaweed populations, let alone protecting the ecological community from which they are taken. It may be necessary for the NOSB to develop recommendations for new regulations concerning the wild harvest of marine plant species for use in organic to best ensure that they meet the needs of seaweed populations and the surrounding benthic and trophic communities from which they are taken.

At this time, we are concerned that certifiers that certify seaweed harvest as organic lack the expertise to make the judgement that harvesting is not negatively impacting the ecosystem. If they are using standards of the local states, these fall short, as they were crafted by the industry using heavy lobbying. Therefore, even organic seaweed may still be harvested in a way that alters the ecological balance to an unacceptable degree.

One commenter who supported the reasoning of looking to organic certification as a means of addressing the environmental impact of marine algae harvesting, noted that they agreed:

with the subcommittee's logic of using existing organic certification tools as a means of verifying sustainable production practices. Organic is the strongest and most regulated food system in the world, so it is logical to use our existing standards and verification processes to ensure that crop materials are produced and harvested in a manner that would not be harmful to the environment. Although it is unprecedented for the NOP standards to require organic status of crop input materials, it is not without precedent in other international organic standards. For example, the Canadian Organic Standards require organic status of some crop inputs, such as molasses (shall be organic), alfalfa meal and pellets (shall be organic if commercially available) and oilseed meals (shall be organic if commercially available).

Therefore, in short, it is feasible to require and achieve organic certification of aquatic plants under the existing NOP regulations. Additional complexities lie in the details of whether organic certification is feasible as a solution for achieving the subcommittee's intended sustainability goals, and if so, whether it is feasible for the organic industry to build up sufficient organic supply to accommodate the needs of organic producers.

Additionally, the commenter pointed out that both the crops certification scope and the wild crops certification scope prohibit the destruction of the environment. §205.200 requires that crop producers "maintain or improve the natural resources of the operation" while §205.207(b) requires that wild crops be "harvested in a manner that ensures that such harvesting or gathering will not be destructive to the environment and will sustain the growth and production of the wild crop".

#### Alternatives to Organic Certification to Address Environmental Impact:

It is important to emphasize that despite the diversity of opinions, there was near unanimous support for addressing the environmental impact of marine algae harvesting. This varied from general statements supportive of the concept of sustainable harvesting to specific suggestions for alternative means of verification. In addition to expressed support for requiring organic certification of marine algae ingredients used in organic crop inputs, other actionable positions were: 1) limited or no harvest of marine algae for organic crop inputs, 2) exploring existing third-party standards for "sustainable" harvesting, and 3) annotations to material listings within the National List of Allowed and Prohibited Substances.

1) *Limited or no harvest of marine algae for organic crop inputs* – Some commenters asserted that there is more to be gained from saving than exploiting this resource, and there are populations that are endangered or in decline that cannot be sustainably harvested. Some asked why farmers are using marine algae as a fertilizer and encouraged seeking alternatives that could replace it. Some suggested looking at invasive aquatic plant species as an alternative. Others explained that freshwater algae do not contain the same properties. One commenter suggested that it is more appropriate for organic farmers to source nutrients from waste streams rather than harvesting an input from a wild, native ecosystem. A few recommended allowing only farmed marine algae, particularly farmed kelp, for crop inputs.

Others noted that organic crop inputs containing marine algae are widely used by growers and include dried, liquid, and whole, unprocessed formulations. Some coastal growers use marine algae as a mulch. One commenter described that:

It is not uncommon for organic farmers in New England to acquire seaweed from local municipalities that collect it from public beaches after storms. This “everybody wins” situation would not seem to present significant risk to adjacent aquatic ecosystems. Moreover, it seems unlikely that a municipality would bother with organic certification in order to ensure that organic farmers would be able to use the seaweed.

2) *Exploring existing third-party standards for “sustainable” harvesting* – Quite a few commenters suggested looking to third party sustainability standards to “explore the opportunity of integrating aspects of other standards or references into the NOP regulations or guidance”. This could result in “identifying certain other standards as equivalent to NOP for the purposes of ensuring sustainable harvest of aquatic plants for use in crop inputs”. An annotation could allow for “multiple options of third-party verifications, including organic”. One commenter recommended that “a better alternative to organic certification for aquatic plant input materials may be phasing in a requirement that NOSB should consider establishing a goal of marine materials be sourced from third-party verified and/or certified sustainable fisheries in 10 years”.

As one public commenter noted, however, the term “sustainable harvest” has different meanings across stakeholder groups. For example, some third-party standards focus on vegetative regrowth, but “because of the many roles that marine algae play in the ecosystem, standards should not be based on the level of disturbance that can sustain a harvest (recovery of biomass), but on recovery of ecosystem function and structure”.

3) *Annotations to material listings within the National List of Allowed and Prohibited Substances* – Rather than requiring that marine algae ingredients in crop inputs be certified organic, one commenter recommended adopting the language at §205.207 and annotating the relevant listings. As such, annotations would be made under §205.601 (j)(1) for synthetic inputs and under §205.602 for nonsynthetic inputs:

Marine algae should be listed on §205.602, prohibited nonsynthetic crop inputs, with the annotation, “unless harvested from a designated area that has had no prohibited substance, as set forth in §205.105, applied to it for a period of 3 years immediately preceding harvest and harvested in a manner that ensures that such harvesting or gathering will not be destructive to the environment and will sustain the growth and production of the population of the species”.

Another commenter supported “the development of guidelines for seaweed harvested for fertilizer production, similar to compost, where certifiers verify that the product is made according to the NOP rules” and suggested that “this could be managed with the development of an annotation for seaweed under §205.601 (j)(1)”.

#### Need for Guidance:

Any requirement for organic certification of marine algae input ingredients would have to be accompanied by NOP guidance on how to apply the standards to a marine environment. It was observed that the wild crop standards do not define what is meant by “not destructive to the environment”. Suggestions included strengthening the interpretation of §205.207 through guidance developed with marine biology experts. Others noted that a certifier’s ability to determine if a harvest is destructive to the environment depends on his/her knowledge of marine ecology. One harvester and

manufacturer of rockweed products for livestock feed and soil conditioners believes that the current standards “leave too much room for individual interpretation by certifying agents that are not necessarily qualified to assess the health of localized or coastwide marine environments”. Several commenters illustrated that contaminants in the ocean are more mobile, presenting unique challenges to certifying that the crop hasn’t come in contact with prohibited substances. Some specific suggestions included requiring documentation of the locations, inputs, and methods of harvest. Guidance should make clear that conservation areas should not be harvested.

A commenter provided the following specific examples of how to expand guidance through “Marine Algae Harvest Guidance”:

Documentation should occur before and after each marine algae harvest for all biodiversity: the seaweed itself, the bycatch from the harvest, and the wildlife that use seaweed as perches for hunting and cover from predators. For the seaweed, documentation of the three-dimensional structure in the seaweed bed (clump density, clump height, clump biomass, and branching) should be conducted. For bycatch, the harvester simply should record how much they had. For wildlife, documentation should include a survey of birds and marine mammals using the seaweed.

In looking to other standards, one commenter suggested a “working group could determine whether existing [...] standards align 100% with the national organic standards, and if not, which elements may need to be added or modified in order to ensure ocean-sources inputs meet NOP standards”. Recommendations could then be about “how to integrate [other] standards, plus any additional elements, into NOP standards, guidance, or instruction”.

Another commenter noted that “the health of vertebrate wildlife (birds and fish species) also depends on seaweed beds”. They suggest guidance should elucidate how wildlife is maintained when marine algae bed harvesting occurs. They recommend “an independent estimate of bird and other wildlife use of seaweed beds before and after harvest in each harvest area” in order to “verify that wildlife is being “maintained” in the harvest area”. Additionally, they recommend field staff with marine biology training perform the certification of marine algae.

#### Feedback on the Discussion Document Questions:

The fall 2018 Discussion Document sought input on four questions. Extensive comments were received on the first question regarding the feasibility of requiring all seaweed harvested for use in organic crop production to be certified to the wild crop standards, and these are discussed above. There were limited responses on the question to certifiers currently certifying marine materials to the wild crop standard asking how they verify that biodiversity is conserved and how wildlife are maintained in the harvest areas, with the exception of one certifier who provided extensive information, including a link to their process for [Certifying Sea Vegetables](#) (an excerpt of which can be found in the Appendix). Mixed comments were reported as to the difficulty of listing species on a label, with some saying it would be challenging and others saying it is possible and already being done. There was widespread support to develop a working group for additional guidance on wild cropped and farmed marine algae and to clarify the definition and measurement of “not destructive to the environment”. There seemed to be limited potential to replace marine algae with freshwater materials for crop production inputs due to the particular properties of marine species.

#### Other Comments:

A number of commenters advised a phase-in period to allow adequate time for input producers to come into compliance for any requirement of organic certification or third-party standards. A commenter

remarked that the rule requiring that livestock be fed organic kelp allowed for a twelve-month phase-in, and a phase-in for any rule requiring organic certification of marine algae should be at least as long. Another suggested examining commercial availability to ascertain an appropriate phase-in period.

## **DISCUSSION:**

The goal of this work agenda item is to find the most effective and realistic means of addressing a complicated issue. No single solution will be satisfactory to all, nor will it be able to resolve all areas of conflict. Despite of the different opinions, there is consensus on the importance of ensuring that marine algae harvesting “maintains or improves the environment”. The NOSB aims to bring a proposal forward this fall with a recommendation for meeting the environmental impact criteria.

### Questions of Jurisdiction:

As noted in the previous section, there were some concerns 1) that it would be difficult for certifiers to verify organic claims for marine algae in crop inputs in the absence of NOP purview over fertilizer products and 2) about precedent setting.

Marine algae are currently treated as an agricultural “crop” for livestock feed and human consumption, and they are being certified to the wild crop or crops standard in each instance. Indeed, in some cases the same boat may harvest the same species of marine algae for both certified organic livestock feed and for non-certified crop inputs. As a point of clarification, any NOSB recommendation would only require that the marine algae *ingredient* be certified organic, not the entire crop input or product. Labels would list the certified organic marine algae ingredient(s). Certifiers and Material Review Organizations would look for the marine algae ingredient’s organic certificate to accompany a product and could also use the Organic Integrity Database to verify production. Certifiers would perform the verification of agricultural ingredients in fertilizers the same way they already do for agricultural ingredients in livestock feed additives.

Several stakeholders cautioned that requiring organic certification of marine algae ingredients in organic crop inputs could lead to a similar requirement in other crop input materials. To be clear, that would not be the intention nor the focus of any proposal to require organic certification of marine algae ingredients; nor is the objective to remove tools or inputs from farmers. Opting for organic certification would use an existing standard and verification process to meet the requirement that already exists, namely that materials not be harmful to the environment.

Environmental implications form part of the NOSB's criteria when examining new petitioned synthetic materials for potential inclusion on the National List and when reviewing the continued listing of materials during the sunset process. Indeed, the issue of environmental impact in marine algae harvesting came to the NOSB's attention during the 2015 sunset review process.

The proposed requirement of organic certification for marine algae ingredients is a means of addressing conflicts over the environmental impact of harvesting these species, but it does not necessarily follow that organic certification would be the right mechanism to account for environmental impact in other crop inputs.

The environmental impact of natural materials used in organic production receives comparatively little consideration simply because they do not undergo the same review process as synthetic materials. Yet

the regulations specifically allow for the prohibition of natural materials "if the use of such substances would be harmful to human health or the environment" (7 USC 6517(c)). From this we understand that natural inputs should also minimize environmental impact. Natural input materials should not be exempt from deliberations of environmental impact simply because they do not go through a petitioned material and subsequent sunset review process.

There are few crop input ingredients that are themselves living organisms harvested directly from wild native ecosystems. The question posed by the NOSB of petitioned materials--are there any adverse impacts on biodiversity--arguably assumes a unique accountability when those input materials themselves (in this case, marine algae) form part of the biodiversity of a wild native ecosystem.

#### Identifying the Right Tool to Address Environmental Impact:

The status quo does not provide a means of verifying that marine algae inputs are not harmful to the environment. Can either the crop or wild crop organic standards adequately define, measure, and verify that through guidance? Should all or part of a third-party verification standard be adopted through an annotation? Should an annotation be developed that stipulates how marine algae should be harvested to meet the wild crop standard but without the requirement of certification?

Throughout the NOSB's Discussion Documents on this issue, numerous commenters have suggested that there may be some species, regions, and/or harvest methods for which a limited or prohibited harvest should be recommended. While this could inform future NOSB work, that is not within the capacity of this current discussion document and proposal effort. Additionally, a small number of commenters said that marine algae harvests are "sustainable" without further action. In the absence of a universally agreed upon definition, measurement, and enforcement of sustainable harvest in marine algae, making claims related to the term are difficult to support.

There are several independent non-profit organizations with third party certification services and ecolabels that certify "sustainable seaweed". Much of the focus has historically been on fisheries<sup>3</sup>, though recent efforts have launched marine algae certification programs. The first two listed below certify both farmed and wild harvested marine algae, while the third certifies only farmed marine algae. Excerpts from these standards can be found in the Appendix.

1. The **Marine Stewardship Council** (MSC) has traditionally focused on standards for seafood products; however in 2017, MSC and the Aquaculture Stewardship Council (ASC) launched "a joint standard for environmentally sustainable and socially responsible seaweed production" under the [ASC-MSC Seaweed Standard](#). These standards contain 31 performance indicators under five principles: sustainable wild populations; environmental impact; effective management; social responsibility; community relations and interactions.

Sustainable wild populations: Seaweed harvesting and farming must be conducted in a manner that does not lead to depletion of the exploited wild populations. For depleted populations, harvesting operations must be conducted in a manner that demonstrably leads to their recovery. Where appropriate, stock status, harvest strategy, and the genetic impact of the assessment site on the wild stock are also assessed.

<sup>3</sup> For example, see The Monterey Bay Aquarium's Seafood Watch list of recommended Eco-Certifications for specific farmed and wild fish. These include ASC, Naturland, Global Aquaculture Alliance Best Aquaculture Practices, Canada Organic, MSC, and FishWise. For example, [FishWise](#)'s vision is promoting "the health and recovery of ocean ecosystems by providing innovative market-based tools to the seafood industry, supporting sustainability through environmentally and socially responsible business practices".



Environmental impacts: Seaweed harvesting and farming activities must allow for the maintenance of the structure, productivity, function, and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the activity depends. Seaweed operations must also adhere to criteria related to habitat, ecosystem structure and function, species status, species management, waste management and pollution control, energy efficiency, disease and pest management practices, and introduced species management.<sup>4</sup>

2. **Friend of the Sea** launched a sustainable marine algae harvesting and farming certification program in 2016 that reviews an operation's: "management system; legal compliance; biomass and Environmental Impact Assessment; water monitoring; air emissions monitoring; waste management; chemicals and hazardous substances; energy management; social accountability; and traceability".
3. The **Maine Seaweed Exchange** has a Seaweed Farmer Certification for farmed marine algae.

At least three international certification bodies provide specific marine algae standards. Others, like [Japan](#), set standards for farmed marine algae<sup>5</sup>. Excerpts from these standards can be found in the Appendix.

1. **The Soil Association** [Organic Seaweed Standards](#) cover both farmed and wild harvested marine algae (see page 8 for the standards on wild harvested marine algae).
2. The **European Commission** [Regulation 710/2009](#) sets "conditions for the aquatic production environment and impacts on other species".
3. **Canadian Organic Standards** has standards set out in its "[Organic production systems : aquaculture - general principles, management standards and permitted substances lists](#)".

The suggestion that the NOSB require certification to an existing third-party certification system raises questions of jurisdiction. The challenge of adopting a third-party standard rather than simply adapting from it is that they cover the social and economic tiers of "sustainability", such as working conditions and wages, which are beyond NOP purview. For the purposes of organic production, "sustainable" harvest in marine environments addresses environmental impact. Additionally, any third party would need to be both impartial and expert in ocean sustainability. Concern has been raised by some in the conservation community that existing third-party standards don't take an ecosystem-wide perspective.

There were several suggestions for adopting annotations to §605.601 (j)(1) and §605.602. These included 1) adapting and/or elaborating the wild crop standard wording at §605.207 and 2) looking to the various third-party standards to identify and adopt sustainability benchmarks. Any annotation wording would need to be feasible for Material Review Organizations (MROs) to assess. The challenge arises in making an annotation enforceable and verifiable without accompanying certification. Who would perform on-site/on-boat inspections of each harvester's operation to measure and substantiate that their harvest and management procedures met the annotation criteria without a certification process?

Opting for organic crop certification employs a tool already at our disposal for verification. As one NOSB member noted in the fall 2018 board meeting discussion, the only way to ensure compliance with environmental standards is regulatory action.

<sup>4</sup> The Aquaculture Stewardship Council. "The ASC-MSC Seaweed Standard". Accessed on January 25, 2019. [https://www.asc-aqua.org/wp-content/uploads/2017/06/BC2146\\_ASC-MSC\\_A4\\_6pp\\_ARTWORK\\_LRES.pdf](https://www.asc-aqua.org/wp-content/uploads/2017/06/BC2146_ASC-MSC_A4_6pp_ARTWORK_LRES.pdf).

<sup>5</sup> See: JONA Organic Standards, "Section 8 Organic Macroalgae Standards", pg. 40 [http://www.jona-japan.org/form/JONA\\_Standards.pdf](http://www.jona-japan.org/form/JONA_Standards.pdf).

The fall 2018 Discussion Document presented a recommended proposal to require that marine algae ingredients in organic crop production inputs be certified organic to the wild crop standard under §205.207. Based on public comments, that language has been modified to the following (proposed language changes are underlined):

§205.601 (j) As plant or soil amendments.

(1) Aquatic plant extracts (other than hydrolyzed) –Extraction process is limited to the use of potassium hydroxide or sodium hydroxide; solvent amount use is limited to that amount necessary for extraction. Marine algae ingredients must be certified organic.

and

§205.602 Nonsynthetic substances prohibited for use in organic crop production.

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

(j) Marine algae -- unless certified organic.

Note that the term “marine algae” in any annotation would be clearly defined to avoid confusion about the differences with the more general term used in §205.601 (j)(1), “aquatic plants”. Moreover, it was proposed by commenters that organic certification could occur under either the wild crop or crops standard.

#### The Role of Guidance:

Regardless of the recommended action, guidance is necessary. Guidance could borrow from multiple standards to improve organic certification or for an annotation. The excerpts from the Appendix: Other Certifier and Third-Party Marine Algae Standards can provide a starting reference. The [Materials Subcommittee’s Fall 2018 Discussion Document](#) offered some guidance evaluation questions and parameters obtained from public comments.

In the case of requiring organic certification, guidance is needed to explain what is meant by “not destructive to the environment and will sustain the growth and production of the wild crop” (§605.207 (b)) and “maintain or improve the natural resources of the operation” (§205.200). With an annotation not tied to certification, guidance would be required to define and provide measurement tools for environmentally “sustainable” harvesting.

Some said certifiers don’t typically have the skills needed to certify marine algae to the wild crop standard. There are certifiers already doing this; however, there is undoubtedly a need for additional guidance and explanation as to how to apply the standards to a marine environment. Certifiers should be qualified through adequate training and education.

#### **CONCLUSION:**

While this is a new way of looking at a wild harvested crop input, that does not mean it is outside of the scope or purview of the NOSB. Organic agriculture is about more than simply limiting the use of synthetic ingredients. Farmers and consumers rely on the NOSB and the NOP to affirm the environmental integrity of organic production, including inputs used. Although finding a middle ground is always challenging, failing to do so will not resolve this issue. There are strong reasons for using the existing instrument of organic certification for marine algae ingredients; nevertheless, the NOSB is interested in obtaining further suggestions from stakeholders.

## **DISCUSSION QUESTIONS:**

1. If you are not in support of requiring organic certification, what approach do you support? Please describe the method for defining, measuring, and most importantly, enforcing, that the harvest would not be destructive to the environment under an alternative approach.
2. Some existing wild harvest marine algae standards from other certifiers and third-party entities are listed in the Appendix. Please comment on strengths in these standards that could be adapted for NOP guidance. Please identify areas of weakness or areas that are not covered.
3. What existing certification or private standards to support marine algae harvest sustainability have not been included in this document or the Appendix that can help inform the NOSB's understanding of the current work being done?
4. How many crop input products approved for use in organic production currently contain certified organic marine algae ingredients?
5. Are there any crop input products utilizing or developing farmed marine algae?
6. Are there enough certifiers able to offer certification services to meet the needs of the crop fertilizer markets if organic certification were required? If organic certification were required of marine algae ingredients, what would be an appropriate phase-in time to allow markets to meet the demand?
7. The NOSB hopes to convene an expert panel at the fall 2019 board meeting to include a marine algae harvester for crop inputs, scientist, conservationist, and certifier, among others. What are some questions that could be posed to help identify the issues and solutions?
8. What are the standards for evaluating environmental harm? For example, what measures of community biodiversity and marine algae species characteristics (density, maximum height, girth, area) could be collected pre- and post-harvest? How soon must these variables return to baseline to avoid environmental harm?

### **Vote in Subcommittee:**

Motion to accept the marine materials in organic crop production discussion document

Motion by: Emily Oakley

Seconded by: Harriet Behar

Yes: 5 No: 0 Abstain: 0 Absent:0 Recuse: 0

**Approved by Emily Oakley, Subcommittee Chair to transmit to NOSB, May 20, 2019**

## **Appendix of Excerpts from Other Certifier and Third-Party Marine Algae Standards:**

*Note: This is not intended to be an exhaustive list and is meant to provide examples and references to some existing marine algae certification standards.*

This Appendix includes:

- A. Soil Association organic seaweed standards Version 1.0 – January 2016
- B. European Commission Regulation (EC) No 710/2009 of 5 August 2009
- C. Canadian General Standards Board: Organic production systems Aquaculture – General principles, management standards and permitted substances lists
- D. The ASC-MSC Seaweed Standard
- E. Friend of the Sea Certification Criteria Checklist For Seaweed Products: Seaweed Harvesting and Farming
- F. MOFGA Sea Vegetable Supplement

### **A. Soil Association organic seaweed standards Version 1.0 – January 2016<sup>6</sup>**

SP c. Sustainable harvesting of wild seaweed

1. You must harvest wild seaweed without significant impact on the aquatic environment.
2. You must put in place measures that ensure seaweed regeneration, taking into account:
  - a. harvesting technique
  - b. minimum sizes
  - c. minimum ages
  - d. reproductive cycles or
  - e. size of remaining seaweed.
3. You must keep records that demonstrate:
  - a. the history of harvesting activity for each species in named beds
  - b. that the seaweed harvested is wild seaweed and that it is harvested according to these standards
  - c. that where you harvest seaweed from a shared or common harvest area, the total harvest complies with these standards.
4. Your records of harvest estimates and sources of potential pollution must provide evidence that you are managing the harvesting areas sustainably with no long-term impact.

### **B. European Commission Regulation (EC) No 710/2009 of 5 August 2009<sup>7</sup>**

#### **CHAPTER 1a Seaweed production**

*Article 6a*

#### **Scope**

<sup>6</sup> Soil Association. “Soil Association organic seaweed standards Version 1.0 – January 2016”. Accessed on January 25, 2019. <https://www.soilassociation.org/media/5250/sa-seaweed-standards.pdf>.

<sup>7</sup> European Commission. “Commission Regulation (EC) No 710/2009 of 5 August 2009 amending Regulation (EC) No 889/2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007, as regards laying down detailed rules on organic aquaculture animal and seaweed production”.

This Chapter lays down detailed production rules for the collection and farming of seaweed. It applies *mutatis mutandis* to the production of all multi-cellular marine algae or phytoplankton and micro-algae for further use as feed for aquaculture animals.

#### *Article 6b*

##### **Suitability of aquatic medium and sustainable management plan**

1. Operations shall be situated in locations that are not subject to contamination by products or substances not authorised for organic production, or pollutants that would compromise the organic nature of the products.
2. Organic and non-organic production units shall be separated adequately. Such separation measures shall be based on the natural situation, separate water distribution systems, distances, the tidal flow, the upstream and the downstream location of the organic production unit. Member State authorities may designate locations or areas which they consider to be unsuitable for organic aquaculture or seaweed harvesting and may also set up minimum separation distances between organic and non-organic production units.

Where minimum separation distances are set Member States shall provide this information to operators, other Member States and the Commission.

3. An environmental assessment proportionate to the production unit shall be required for all new operations applying for organic production and producing more than 20 tonnes of aquaculture products per year to ascertain the conditions of the production unit and its immediate environment and likely effects of its operation. The operator shall provide the environmental assessment to the control body or control authority. The content of the environmental assessment shall be based on Annex IV to Council Directive 85/337/EEC <sup>(21)</sup>. If the unit has already been subject to an equivalent assessment, then its use shall be permitted for this purpose.
4. The operator shall provide a sustainable management plan proportionate to the production unit for aquaculture and seaweed harvesting. The plan shall be updated annually and shall detail the environmental effects of the operation, the environmental monitoring to be undertaken, and list measures to be taken to minimise negative impacts on the surrounding aquatic and terrestrial environments, including, where applicable, nutrient discharge into the environment per production cycle or per annum. The plan shall record the surveillance and repair of technical equipment.
5. Aquaculture and seaweed business operators shall by preference use renewable energy sources and re-cycle materials and shall draw up as part of the sustainable management plan a waste reduction schedule to be put in place at the commencement of operations. Where possible, the use of residual heat shall be limited to energy from renewable sources.
6. For seaweed harvesting a once-off biomass estimate shall be undertaken at the outset.

#### *Article 6c*

##### **Sustainable harvesting of wild seaweed**

1. Documentary accounts shall be maintained in the unit or premises and shall enable the operator to identify and the control authority or control body to verify that the harvesters have supplied only wild seaweed produced in accordance with Regulation (EC) No 834/2007.
2. Harvesting shall be carried out in such a way that the amounts harvested do not cause a significant impact on the state of the aquatic environment. Measures shall be taken to ensure that seaweed can regenerate, such as harvest technique, minimum sizes, ages, reproductive cycles or size of remaining seaweed.
3. If seaweed is harvested from a shared or common harvest area, documentary evidence shall be available that the total harvest complies with this Regulation.

4. With respect to Article 73b(2)(b) and (c), these records must provide evidence of sustainable management and of no long-term impact on the harvesting areas.

### **C. Canadian General Standards Board: Organic production systems Aquaculture – General principles, management standards and permitted substances lists<sup>8</sup>**

#### 7.2 Wild crops

7.2.1 An organic wild crop shall be harvested from a clearly defined area or production unit in accordance with this standard. Documented evidence that prohibited substances have not been used for at least 36 months before the harvest of an organic crop shall be available.

7.2.2 The operator shall prepare an organic plan (see 4.1, 4.2 and 4.3) that includes:

- a) a detailed description of production areas and harvest methods. If wild crops are harvested from a shared or common area, records shall be available to demonstrate that the total harvest complies with this standard;
  - b) management practices that preserve wild species and avoid disturbance of the environment;
- and
- c) a record-keeping system that meets the requirements of 4.4.

7.2.3 Harvesting shall be carried out in such a way that the amounts harvested do not cause significant impact on the state of the environment. Measures shall be taken to ensure that crops can regenerate. Examples of such measures include harvest techniques and tools, minimum sizes, ages, reproductive cycles or size of remaining crops. Evidence of sustainable management and of no long-term impact on the harvesting areas shall be provided.

7.2.4 The production zone for wild crops shall be situated in locations where water is not subject to contamination by products or substances not authorized for organic production, or pollutants that would compromise the organic nature of the production.

### **D. The ASC-MSC Seaweed Standard<sup>9</sup>**

Certified seaweed operations must be well-managed, environmentally sustainable and socially responsible.

If you decide to begin the audit process, an accredited third party conformity assessment body (CAB) will provide an assessment team to independently score your farm or wild harvest operation to some or all of the 31 performance indicators (PIs) that make up the ASC-MSC Seaweed Standard.

<sup>8</sup> Canadian General Standards Board- Standards Council of Canada. “Organic production systems Aquaculture – General principles, management standards and permitted substances lists”, pg. 23. CAN/CGSB-32.312-2018. Accessed on January 25, 2019. [http://publications.gc.ca/collections/collection\\_2018/ongc-cgsb/P29-32-312-2018-eng.pdf](http://publications.gc.ca/collections/collection_2018/ongc-cgsb/P29-32-312-2018-eng.pdf).

<sup>9</sup> The Aquaculture Stewardship Council. “Get certified! Your guide to the ASC-MSC Seaweed Standard audit process”, pg. 8. Accessed on January 25, 2019. <https://www.asc-aqua.org/wp-content/uploads/2017/11/Get-Certified-Guide-Seaweed.pdf>.

The number of PIs scored depends on the type of seaweed production system that you use. Your CAB will explain exactly which of the PIs will be scored for your operation.

Table 1: List of performance indicators

Principle 1 Sustainable wild populations

PI 1.1 Stock status

PI 1.2 Harvest strategy

PI 1.3 Genetic impact on wild stock

Principle 2 Environmental Impacts

PI 2.1 Habitat

PI 2.2 Ecosystem structure and function

PI 2.3 ETP species

PI 2.4 Other species

PI 2.5 Waste management and pollution control

PI 2.6 Pest(s) and disease(s) and management

PI 2.7 Energy efficiency

PI 2.8 Translocations

PI 2.9 Introduction of alien species

Principle 3 Effective management

PI 3.1 Legal and/or customary framework

PI 3.2 Decision-making processes

PI 3.3 Compliance and enforcement

Principle 4 Social responsibility

PI 4.1 Child labour

PI 4.2 Forced, bonded or compulsory labour

PI 4.3 Discrimination

PI 4.4 Health, safety and insurance

PI 4.5 Fair and decent wages

PI 4.6 Freedom of association and collective bargaining

PI 4.7 Disciplinary practices

PI 4.8 Working hours

PI 4.9 Environmental and social training

Principle 5 Community relations and interaction

PI 5.1 Community impacts

PI 5.2 Conflict resolution

PI 5.3 Rights of indigenous groups

PI 5.4 Visibility, positioning and orientation of farms or water-based

PI 5.5 Identification and recovery of substantial gear

PI 5.6 Noise, light and odour

PI 5.7 Decommissioning of abandoned production units

## **E. Friend of the Sea Certification Criteria Checklist For Seaweed Products: Seaweed Harvesting and Farming**<sup>10</sup>

### 3 - Biomass and Environmental Impact Assessment

3.1 In case of seaweed harvesting activity, an assessment of the status of the seaweed and its biomass by appropriate research institutes or other recognised institutions unconnected to any harvesting and/or processing industries must be undertaken and it must conclude that the seaweed is not overexploited nor endangered. [The auditor must make reference to the biomass studies (title, date, author).]

3.2 This requirement applies to all harvesting operations and to those farming operations producing more than 20 tonnes per year. An EIA or equivalent assessment of the harvesting or farming activity has been carried out with a positive outcome by the presiding authority or by other recognized independent institute or laboratory. [The auditor must check whether an independent environmental impact assessment or equivalent was carried out. The auditor must specify the title, date, author and significant conclusions of the inspected EIA or equivalent document. \*In case the Organisation is not compliant for 3.1, it must alternatively be compliant to 3.2 and sub requirements.]

3.3 In case of non compliance with 3.2, farming activities producing more than 20 tonnes per year must alternatively be compliant with the following requirements:

3.3.1 sea-based systems must not imply removal of rocks, corals or other obstructions leading to damage to the coastal ecosystem;

3.3.2 sea-based systems must not imply removal of competitive grasses or predators leading to damage to the coastal ecosystem;

3.3.3 large scale sea-based farms must not influence coastal water movement in a detrimental way. Protection from erosion or other positive impacts would not constitute a non-compliance with this requirement;

3.3.4 any multiuser conflict must have been solved positive and allow other users access to the sea and to the shore.

3.3.5 a careful assessment of potential impacts must precede the introduction of any non-native species.

3.3.6 removal of mangroves for farming purposes is prohibited. In case removal has occurred, a reforestation program must fully compensate the mangroves degradation occurred and caused by the seaweed farming activity.

3.3.7 carrying capacity must have been independently evaluated, considering in particular the potential impact of nutrients removal. [The auditor must acquire documented information and evidence (text, photos, official documents to be annexed to the audit report) of the environmental conditions of the ecosystem prior to the installation and assess whether the site has led to a negative impact on the ecosystem.]

3.4 In case of farming operations of less than 20 tonnes each per year, but more than 20 tonnes on a regional or national level, a regional or national level independent assessment must prove compliance with requirements 3.3 and sub. The study cannot be older than 5 years. [The auditor must make reference to the regional or national level assessment. The auditor must run sample onsite checks at small scale producers and produce / report evidence of compliance.]

<sup>10</sup> Friend of the Sea. “Certification Criteria Checklist For Seaweed Products: Seaweed Harvesting and Farming (Latest update: 19/03/2014)” pgs. 7-9. Accessed on January 25, 2019. <http://www.friendofthesea.org/public/news/en%20-%20checklist%20fos%20seaweed%2019032014.pdf>.



**F. MOFGA Sea Vegetable Supplement<sup>11</sup>**

Part 2. WILD CRAFTED SEA VEGETABLES – Wild Crafted sea vegetables are sea vegetables harvested from natural growing areas along ocean coastline. Wild crafted sea vegetables must meet the wild crafting requirements of the NOP rule.

Wild Crafted Sea Vegetable Variety	Harvest Method	Site Locations (harvest area) (Please include each site on the Harvest Area Form.)*
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\*Include maps and a Landowner Affidavit, if applicable for each site. On each harvest area map designate harvest areas, boundaries, buffer zones, and sources of possible contaminants and prohibited materials.

Part 3. GROWING AREA DESCRIPTION: Cultured and/or Wild Crafted Sea Vegetables

3.1. Describe the natural environment of the harvest area. List any rare or endangered terrestrial or aquatic plants or animals that occur in the harvest area. Lists of rare or endangered plants and animals are available from MNAP or MDIFW.

3.2. Describe methods used to prevent negative impact to the harvest area and monitoring procedures used to verify lack of impact on the aquatic ecosystem, water quality and biodiversity.

3.3. How do your harvest practices ensure the health, sustained growth, and long-term viability of the wild crop(s)?

3.4. Approximately what percentage of the wild crop is harvested at each harvest? Are you aware of other harvesters working the same area?

3.5. List harvester training provided including frequency of trainings and the procedures used to ensure your collectors harvest crops in accordance with answers provided above.

3.6. What procedures are in place to prevent contamination from adjoining land/water use or other sources of contamination?

3.7. Describe your record keeping system for wild crop area management, monitoring, harvest and sales.

<sup>11</sup> MOFGA Certification Services LLC. “Sea Vegetable Supplement” pgs. 3-4. Accessed on January 25, 2019. [https://mofgacertification.org/wp-content/uploads/Crop\\_2019\\_SeaVegetableSupplement.pdf](https://mofgacertification.org/wp-content/uploads/Crop_2019_SeaVegetableSupplement.pdf).