

National Organic Standards Board
Crops Subcommittee Proposal
NOP Request to Review *Lithothamnion* Classification
August 3, 2021

I INTRODUCTION:

Lithothamnion is a genus of coralline marine red algae containing 103 species, some of which have calcareous deposits within their cell walls. It is sometimes considered a plant in the botanical classification *Rhodophyta* within *Archaeplastida*, but other times is not included in the stricter definition of "plant", *Viridiplantae* [<https://en.wikipedia.org/wiki/Plant>]. In common usage, seaweeds such as *lithothamnion*, kelp, etc. are called plants.

Biology and use

According to The Seaweed Site https://www.seaweed.ie/uses_general/corallinealgae.php :

"A number of crustose, calcareous red algae (Corallinaceae) grow detached in shallow waters and accumulate to form large beds of stone-like algae on the coasts of north western Europe and in the western Mediterranean, México (Baja California), and Brazil. These are collectively known as "maërl", "coral" or "coral sand" in north-western France, Britain and Ireland (Blunden, Binns & Perks 1975). Scientifically, they are also known as "rhodoliths".

"The two most common species in the north-eastern Atlantic are *Phymatolithon calcareum* [apparently a synonym for *L. calcareum*] and *lithothamnion corallioides*, growing from 0-8 m (occasionally to 32 m) in the subtidal of quiet bays with clear Atlantic water off the coasts of Spain, France, England, Scotland, and Ireland, and in the Mediterranean. Similar species form such beds in clear waters throughout the world, such as the Gulf of Mexico, Arctic Canada, Indonesia. The algal thallus is made up of successive layers of calcium (and some magnesium) carbonates, which may account for up to 80% of the wet weight.

Maërl is dredged off the coast of Brittany, at Falmouth in England, in Bantry Bay, Ireland, and in Iceland, dried, ground, and sold as a soil additive, for animal feed supplements, as a water filtration agent, and as a natural anti-osteoporosis remedy. Over 500,000 t are harvested each year from live and dead deposits, although annual amounts are declining, mainly due to the exhaustion of resources, particularly in France.

In Ireland, about 20,000 tonnes of subfossil maërl is harvested from a site in Bantry Bay".

The species *Lithothamnium calcareum* is, besides tricalcium phosphate, often used as food fortification in plant-based milk substitutes to achieve a similar calcium content as a cow milk.

<https://en.wikipedia.org/wiki/Lithothamnion>

A U.S. Food and Drug Administration (FDA) generally recognized as safe (GRAS) notice has been published for seaweed-derived calcium for the intended use: "in foods in general as a source of dietary calcium for food enrichment and fortification purposes at various levels that range up to 4.0 percent." [https://www.cfsanappsexternal.fda.gov/scripts/fdcc/?set=GRASNotices&id=28&sort=GRN_No&order=DESC&startrow=1&type=column&search=GRN%20No%2E%C2%A4DECIMAL%C2%A428]

Harvest

Lithothamnion superpositum [= *lithothamnion crispatum*] is a species found off the coast of South America and is used in calcium-enrichment food products and supplements. It's typically a kiwi- or lemon-sized ball of purplish calcified algae that attaches to seaweed on the ocean floor. According to a manufacturer, "At a certain point, it's washed onto shore in a protected eco-marine park and sustainably hand-harvested."

Certifiers that the NOP consulted provided the following additional information:

- *Lithothamnion superpositum* [sic] [should be *L. calcareum*] algae species have life spans between 50-100 years and appear to favor the volcanic sand/gravel deposits along the coastline shelves near to the shore of Iceland, most concentrated in the West Fjords. During their life span, the algae fronds accumulate seawater minerals, calcifying the fronds. Calcified pieces of the algae break off the live plants, and currents move this material to lower shelves further offshore.
- Harvesting in Brazil is done by dredging dead calcareous skeleton sediment material of *lithothamnion* algae (algae shells), that has detached and accumulated in deposit areas by tide movements, from deep waters off the continental shelf of Brazil. Harvesting in Iceland is done by dredging calcified marine algae from (dead) *lithothamnion* sp. from mines in the sea (100 yards or more offshore, avoiding the live plants) in fjords.
- After harvest, lithothamnion is washed/heat treated, dried, milled, and packaged.

II BACKGROUND:

A *lithothamnion* product was petitioned to be added to the National List in February 2007 (see "Calcium, Seaweed Derived" on the USDA Petitioned Substances webpage). [The petition and NOSB recommendation can be found under "calcium, seaweed derived" at:

<https://www.ams.usda.gov/sites/default/files/media/Calcium%20Seaweed%20Petition.pdf>]

In 2008, the NOSB recommended that "calcium, seaweed derived" did not need to be considered for addition to §205.605(a) "since use of this material is currently allowed through the existing listing of Nutrient Minerals on the National List §205.605(b)."

Since the 2008 NOSB recommendation, the NOP has received questions about whether USDA organic regulations allow the certification of *lithothamnion*. Organic certification allows organic handlers to use ingredients in organic products without the content counting as part of the 5 percent nonorganic ingredient component. The NOP previously informed a certifier that *lithothamnion* is a nonagricultural product and therefore cannot be certified organic. Since then, the NOP has learned that two certifiers certify *lithothamnion* under the wild crop portion of the USDA organic regulations. Additionally, seven operations are certified to handle organic *lithothamnion*, identified in the Organic Integrity Database as: "*Lithothamnium*," "*Lithothamnion superpositum*," "*Lithothamnion* sp.," "*Lithothamnion*," and "*Lithothamnion calcareum*." Certifiers did not clarify how an agricultural determination was made.

In March 2021, the NOP sent a [memo to the NOSB](#) requesting that the NOSB address the classification of collected *lithothamnion* as "agricultural" or "nonagricultural" and if it may be certified as a "wild crop" under the USDA organic regulations.

III RELEVANT AREAS OF THE RULE:

Related definitions from section 205.2 of USDA organic regulations:

Agricultural product. Any agricultural commodity or product, whether raw or processed, including any commodity or product derived from livestock, that is marketed in the United States for human or livestock consumption.

Nonagricultural substance. A substance that is not a product of agriculture, such as a mineral or a bacterial culture, that is used as an ingredient in an agricultural product. For the purposes of this part, a nonagricultural ingredient also includes any substance, such as gums, citric acid, or pectin, that is extracted from, isolated from, or a fraction of an agricultural product so that the identity of the agricultural product is unrecognizable in the extract, isolate, or fraction.

Wild crop. Any plant or portion of a plant that is collected or harvested from a site that is not maintained under cultivation or other agricultural management.

According to NOP Guidance 5033, the decision tree 5033-2 should be used to determine whether a substance is classed as Agricultural or Nonagricultural under the NOP. In this case, the substance is collected *lithothamnion*; that is, *lithothamnion* as harvested, before any processing.

IV DISCUSSION:

The Decision Tree for Classification of Agricultural and Nonagricultural Materials for Organic Livestock Production or Handling (NOP 5033-2), step 1, asks, “Is the substance a mineral or bacterial culture as included in the definition [above] of nonagricultural substances in section 205.2 of USDA organic regulations?”

The answer is not simple. Harvested *lithothamnion* consists of dead parts of an algae, harvested for their mineral content. Further, it is not a product of agriculture. Note that an example in decision tree 5033-2 classifies kelp, which is somewhat similar, as agricultural. However, the NOSB feels that the classification turns on the fact that kelp is harvested live, whereas dead parts of *lithothamnion* are harvested as a mineral. Thus, the answer is yes, thereby classifying *lithothamnion* as nonagricultural.

Can a nonagricultural substance be classified as organic? Perhaps, if it is a wild crop.

Is *lithothamnion* a wild crop? [Guidance 5022](#) (National Organic Program wild-crop harvesting practice standard) states, “Eligible species can be plant or other non-animal species, such as mushrooms, kelp, or seaweed, that are fixed to a defined location by a species part, such as a root, holdfast, mycelial thread, rhizoid, or stolon.” Based on the definition and guidance above, and allowing for common usage of the word, “plant”, the NOSB determines that *lithothamnion* is not a wild crop, because it is not a live plant or part of a live plant, and is not fixed to a defined location.

Lithothamnion is similar to diatomaceous earth, peat, or limestone—originally living tissues that after death are accumulated into deposits that can be mechanically harvested.

V RECOMENDATION:

Based on the above considerations, *lithothamnion* is classified as a nonagricultural substance. According to NOP Guidance 5022 lithothamnion is not a wild crop since it is not fixed to a defined location by a species part, therefore it cannot be certified organic.

Vote in Crops Subcommittee:

Motion to classify *lithothamnion* as a nonagricultural substance

Motion: Brian Caldwell

Seconded by: Amy Bruch

Yes:- 8 No: 0 Abstain: 0 Absent: 0 Recuse: 0

Motion that *lithothamnion* does not meet wild crop criteria and is not eligible to be certified to the wild crop standard.

Motion: Brian Caldwell

Seconded by: Steve Ela

Yes: 8 No: 0 Abstain: 0 Absent: 0 Recuse: 0

Approved by Rick Greenwood, Crop Subcommittee Chair, to transmit to NOP August 6, 2021.