

National Organic Standards Board
Handling Subcommittee Petitioned Material Proposal
Ethiopian Pepper
July 17, 2018

Summary of Petition

The petition requests to add non-organic Ethiopian pepper to the National List at §205.606, and to allow its substitution when an organic alternative is unavailable.

Summary of Review:

Specific Uses of the Substance:

The petitioners noted that they use Ethiopian pepper, *Xylopia aethiopica* (Dunal) A. Rich, in their hot sauces: African Hot Pepper Sauce; Chipotle Pepper Sauce; and Chili Pepper Sauce. Ethiopian pepper is quite pungent and slightly bitter, comparable to a mixture of cubeb pepper and nutmeg. This fruit is often smoked during the drying process, resulting in an attractive smoky-spicy flavor. No other spices give the same bitter, yet aromatic, flavor.

Action of the Substance:

X. aethiopica is a slim, tall tree of about 60–70 cm in diameter that can reach up to 15 to 30 m tall, with a straight stem and a slightly stripped or smooth bark. The fruits are rather small and look like twisted bean-pods. When dry, the fruit turns dark brown, cylindrical, 2.5 to 5 cm long and 4 to 6 mm thick. The contours of the seeds are visible from outside. Each pod contains 5 to 8 kidney shaped seeds of approximately 5 mm in length. The hull is aromatic, but not the seeds.

Manufacture:

X. aethiopica is native to the lowland rainforest and moist fringe forest in the savanna zones of Africa, but largely located in West, Central and Southern Africa. These trees are widely distributed in the humid forest zones of West Africa especially along rivers in the drier area of the region. In tropical and highlands of Africa (from Ethiopia to Ghana), both species *X. aethiopica* and *X. striata* occur and are used for local cooking. In South America, a third species, *X. aromatica* (burro pepper), has found similar applications among Brazilian Indios. The tree prefers high rainfall areas and well-drained soils. While *X. aethiopica* thrives in the forest regions, the tree can also be found in transitional zones. Loamy and sandy loamy soils are conducive for the cultivation of the plant. The plant can successfully be intercropped with other staple food items in the first four years. Propagation is easily accomplished by seeds. Seedlings are transplanted to the field within three to five months after sowing. The plant grows rapidly the first three years. Trees are planted eight meters apart. In West Africa, the tree flowers twice per year, in March to July and in October to December. Fruiting takes place in December to March and June to September. Harvesting time runs from February to May and again from August to October. The fruits are harvested with the inflorescence. After picking, the fruits are sun-dried for four to seven days. After drying, the fruits are removed from the inflorescence stalks. Fruits should not be dried on the ground, but on a protective cloth, net, screen or shelving system to minimize any microbial contamination. Typical fruit yields are about two to three metric tons per annum per hectare.

Category 1: Classification

1. Substance is for: X **Handling** _____ **Livestock**

2. For HANDLING and LIVESTOCK use:
- Is the substance **Agricultural** or **Non-Agricultural**?
Describe reasoning for this decision using NOP 5033-2 as a guide:

The petition is for Ethiopian peppers as an ingredient in a product. There are no chemical processes involved that would change its structure as an Ethiopian pepper.

Category 2: Adverse Impacts

1. What is the potential for the substance to have detrimental chemical interactions with other materials used in organic farming systems? [§6518(m)(1)]

There is little potential for the substance to have detrimental chemical interactions with other materials used in organic farming systems.

2. What is the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment? [§6518(m)(2)]

There is little information about toxicity or mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment.

3. Describe the probability of environmental contamination during manufacture, use, misuse or disposal of such substance? [§6518(m)(3)]

There is little information regarding environmental contamination during manufacture, use, misuse, or disposal of Ethiopian peppers.

4. Discuss the effect of the substance on human health. [§6517 (c)(1)(A)(i); §6517 (c)(2)(A)(i); §6518(m)(4)].

There are instances of Ethiopian pepper powder being rejected by the EU for having unsafe levels of aflatoxins and ochratoxins during testing at entrance laboratories in European countries.

5. Discuss any effects the substance may have on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock. [§6518(m)(5)]

There are no effects on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms.

6. Are there any adverse impacts on biodiversity? (§205.200)

No, there are no known adverse impacts on biodiversity.

Category 3: Alternatives/Compatibility

1. Are there alternatives to using the substance? Evaluate alternative practices as well as non-synthetic and synthetic available materials. [§6518(m)(6)]

There are no known substitutes for Ethiopian pepper.

Category 5: Additional criteria for agricultural substances used in handling (review of commercial unavailability of organic sources):

1. Is the comparative description as to why the non-organic form of the material /substance is necessary for use in organic handling provided?

The petition stated there is no organic form of Ethiopian pepper on the market. However, there is a possibility of wild crop certification of Ethiopian pepper that has not been fully explored. The petitioner described the Ethiopian pepper as “de facto organic” in that the Ethiopian pepper is hard to grow commercially because it is grown in the wild. The petitioner stated, “The Ethiopian peppers grow in the lowland rainforests in the savanna zones of West Africa. Because of the unique environment in which this wild-crafted plant lives, it is not something that lends itself to cultivation by organic growers. It is a plant that is by nature “de facto organic. We have contacted farmers about growing this in such a way that it could be certified. However, the growing conditions necessary combined with the small volume of use make it impossible to find a commercial grower for this substance.”

2. Does the current and historical industry information, research, or evidence provided explain how or why the material /substance cannot be obtained organically in the appropriate **form** to fulfill an essential function in a system of organic handling?

No, there is little to no current or historical industry information, research, or evidence provided to explain how or why the material/substance cannot be obtained organically in the appropriate form to fulfill an essential function in a system of organic handling.

3. Does the current and historical industry information, research, or evidence provided explain how or why the material /substance cannot be obtained organically in the appropriate **quality** to fulfill an essential function in a system of organic handling?

There is no current and historical industry information, research, or evidence provided to explain how or why the material/substance cannot be obtained organically in the appropriate quality to fulfill an essential function in a system of organic handling.

4. Does the current and historical industry information, research, or evidence provided explain how or why the material /substance cannot be obtained organically in the appropriate **quantity** to fulfill an essential function in a system of organic handling?

There is little current or historical industry information, research, or evidence provided explaining how or why the Ethiopian substance cannot be obtained organically in the appropriate quantity to fulfill an essential function in a system of organic handling.

5. Does the industry information about unavailability include (but is not limited to) the following?:
Regions of production (including factors such as climate and number of regions);

Ethiopian pepper is native to the rainforests of West Africa.

- a. Number of suppliers and amount produced;

Number of suppliers and amount produced is not readily available.

- b. Current and historical supplies related to weather events such as hurricanes, floods, and droughts that may temporarily halt production or destroy crops or supplies;

No information is available for weather events.

- c. Trade-related issues such as evidence of hoarding, war, trade barriers, or civil unrest that may temporarily restrict supplies; or

At the end of 2016, Ethiopian pepper powder was returned to Ethiopia from European markets when it was found to have unsafe levels of aflatoxins and ochratoxins during testing at entrance laboratories in European countries. This has affected supply.

- d. Other issues which may present a challenge to a consistent supply?

6. In balancing the responses to the criteria in Categories 2, 3 and 5, is the substance compatible with a system of sustainable agriculture [§6518(m)(7)] and compatible with organic handling? (see NOSB Recommendation, [Compatibility with Organic Production and Handling, April 2004](#))

Based on the information provided in the petition, it appears that Ethiopian pepper is could be compatible with a system of sustainable agriculture and could be compatible with organic handling. Ethiopian pepper is an agricultural product grown in more than 20 African countries spanning from Ethiopia to Sierra Leone. More information is needed about the supply of the pepper and the production methods used in the various supply chains to make an affirmative determination of compatibility.

Classification Motion:

Motion to classify Ethiopian pepper as agricultural

Motion by: Lisa de Lima

Seconded by: A-dae Romero-Briones

Yes: 4 No: 0 Abstain: 0 Absent: 3 Recuse: 0

National List Motion:

Motion to add Ethiopian pepper at §205.606

Motion by: Lisa de Lima

Seconded by: A-dae Romero-Briones

Yes: 2 No: 2 Abstain: 0 Absent: 3 Recuse: 0

Approved by Lisa de Lima, Subcommittee Chair, to transmit to NOSB, August 24, 2018