

**National Organic Standards Board
Handling Committee
Petitioned Material Proposal
Sugar beet fiber**

December 18, 2012

Summary of Proposed Action:

Sugar beet fiber is the remaining vegetable matter following the sucrose extraction hydrolysis process for sugar beets. This fibrous sugar beet material is composed of hemicellulose, cellulose, and pectin and contains soluble fiber concentrations of 10%-20%. Sugar beet fiber has a large surface area and is able to bind a large volume of water within a product to maintain the product's integrity (moisture) and lower the overall water activity which can lead to a longer shelf-life and minimize microbial concerns. Sugar beet fiber is often added to a food product to provide an increased source of soluble fiber within a food, and it is this function that has been brought forth in the petition for addition to §205.606. The addition of sugar beet fiber in this capacity is due to the fact that it has been found to facilitate better digestion/health in those that consume an adequate amount.

Sugar beet fiber processing may have a negative environmental impact due to the release of wastewater with high biologic oxygen demand (BOD) that can disturb natural ecosystems if not released/treated responsibly. Additionally, the technical review states that sugar beet fiber production often relies upon genetically engineered beets that would not be allowed in organic production since genetic engineering is an excluded method. The extraction process to isolate the sugar from the beet fiber is reliant upon a non-chemical hydrolysis process. However, further sugar beet fiber processing can utilize additional materials to bleach and/or treat the fibers with formaldehyde to produce a uniform color and/or prevent microbial activity which can lead to spoilage and mycotoxin production. Production practices throughout the world for sugar beet production and processing may vary, in some cases, using a variety of organically prohibited materials (pesticides, herbicide, fumigants, fertilizers, preservatives, etc.). These practices, while not allowed for organic production, are consistent with other common crop practices for non-organic ingredients.

The subcommittee discussed concerns over GMOs and the concern over the genetic purity of sugar beets that may be used for sugar production and therefore would be the source material for the fiber in question—either currently or in the future. The subcommittee also had concerns and is seeking comments from the industry regarding the reportedly unique solubility/insolubility ratio and phytic acid levels in the substance and the degree to which these offer specific benefits over other or organically available alternatives.

Evaluation Criteria

(Applicability noted for each category; Documentation attached)
“B” below)

Criteria Satisfied? (see

- | | | | |
|--|---|-----------------------------|------------------------------|
| 1. Impact on Humans and Environment | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 2. Essential & Availability Criteria | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 3. Compatibility & Consistency | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 4. Commercial Supply is Fragile or Potentially Unavailable as Organic (only for § 205.606) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |

Substance Fails Criteria Category: [] Comments:

Proposed Annotation (if any):

Basis for annotation: To meet criteria above Other regulatory criteria Citation
Notes:

Recommended Committee Action & Vote

Classification Motion: Motion to classify sugar beet fiber as agricultural

Motion by: John Foster Seconded by: Joe Dickson
Yes: 8 No: 0 Absent: 0 Abstain: 0 Recuse: 0

Listing Motion: Motion to list sugar beet fiber as petitioned on § 205.606

Motion by: John Foster Seconded by: Joe Dickson
Yes: 7 No: 0 Absent: 0 Abstain: 1 Recuse: 0

Crops	<input type="checkbox"/>	Agricultural	x	Allowed¹	<input type="checkbox"/>
Livestock	<input type="checkbox"/>	Non-synthetic	<input type="checkbox"/>	Prohibited²	<input type="checkbox"/>
Handling	x	Synthetic	<input type="checkbox"/>	Rejected³	<input type="checkbox"/>
No restriction	<input type="checkbox"/>	Commercial unavailable as organic	x	Deferred⁴	<input type="checkbox"/>

¹Substance voted to be added as “allowed” on National List to § 205.606 without annotation.

Approved by Committee Chair to Transmit to NOSB
John Foster, Committee Chair December 18, 2012.

NOSB Evaluation Criteria for Substances Added To the National List

Category 1. Adverse impacts on humans or the environment? Substance: Sugar beet fiber

Question	Yes	No	N/A ¹	Documentation (TAP; petition; regulatory agency; other)
1. Are there adverse effects on environment from manufacture, use, or disposal? [§205.600 b.2]	X			TR: wastewater can have high BOD and lead to water pollution; growing conventional beets is cited to use a large amount of harmful materials (herbicides, methyl bromide, pesticides); also TR states formaldehyde and sulfur dioxide may be used to bleach and preserve the fiber from microbes/toxin production
2. Is there environmental contamination during manufacture, use, misuse, or disposal? [§6518 m.3]	X			TR: cites that environmental contamination can happen at processing plants; however, not all plants/production would lead to that pollution since it is practice dependent for different producers worldwide
3. Is the substance harmful to the environment and biodiversity? [§6517c(1)(A)(i);6517(c)(2)(A)i]		X		
4. Does the substance contain List 1, 2 or 3 inerts? [§6517 c (1)(B)(ii); 205.601(m)2]			X	
5. Is there potential for detrimental chemical interaction with other materials used? [§6518 m.1]		X		
6. Are there adverse biological and chemical interactions in agro-ecosystem? [§6518 m.5]			X	THIS MATERIAL IS FOR 606
7. Are there detrimental physiological effects on soil organisms, crops, or livestock? [§6518 m.5]			X	
8. Is there a toxic or other adverse action of the material or its breakdown products? [§6518 m.2]		X		
9. Is there undesirable persistence or concentration of the material or breakdown products in environment? [§6518 m.2]		X		
10. Is there any harmful effect on human health? [§6517 c (1)(A)(i); 6517 c(2)(A)i; §6518 m.4]		X		
11. Is there an adverse effect on human health as defined by applicable		X		

Federal regulations? [205.600 b.3]				
12. Is the substance GRAS when used according to FDA's good manufacturing practices? [§205.600 b.5]		X		
13. Does the substance contain residues of heavy metals or other contaminants in excess of FDA tolerances? [§205.600 b.5]		X		

¹If the substance under review is for crops or livestock production, all of the questions from 205.600 (b) are N/A—not applicable.

NOSB Evaluation Criteria for Substances Added To the National List

Category 2. Is the Substance Essential for Organic Production? fiber

Substance: Sugar beet fiber

Question	Yes	No	N/A ¹	Documentation (TAP; petition; regulatory agency; other)
1. Is the substance formulated or manufactured by a chemical process? [6502 (21)]		X		TR-some manufacturers may use some chemicals in bleaching or preventing microbial activity; this would be dependent on the producer and not all sugar beet fiber would have this problem
2. Is the substance formulated or manufactured by a process that chemically changes a substance extracted from naturally occurring plant, animal, or mineral, sources? [6502 (21)]		X		See above
3. Is the substance created by naturally occurring biological processes? [6502 (21)]		X		TR: product is extracted via a physical method using on water and heat
4. Is there a natural source of the substance? [§205.600 b.1]			X	
5. Is there an organic substitute? [§205.600 b.1]	X			TR, PETITION: there is not the quantity of organic to supply the industry
6. Is the substance essential for handling of organically produced agricultural products? [§205.600 b.6]		X		TR, PETITION: it is not a requirement for food , but it is a product that can assist in processing and provide additional health benefits to consumers
7. Is there a wholly natural substitute product? [§6517 c (1)(A)(ii)]			X	
8. Is the substance used in handling, not synthetic, but not organically produced? [§6517 c (1)(B)(iii)]	X			
9. Is there any alternative substances? [§6518 m.6]	X			TR, PETITION: other vegetable fibers can be used instead (oat, pea, etc.) however each has slightly different properties
10. Is there another practice that would make the substance unnecessary? [§6518 m.6]	X			Using another vegetable fiber or not using a fiber at all.

¹If the substance under review is for crops or livestock production, all of the questions from 205.600 (b) are N/A—not applicable.

NOSB Evaluation Criteria for Substances Added To the National List

Category 3. Is the substance compatible with organic production practices? Substance: Sugar beet fiber

Question	Yes	No	N/A ¹	Documentation (TAP; petition; regulatory agency; other)
1. Is the substance compatible with organic handling? [§205.600 b.2]	X	X		Sugar beet may be grown with GMO sugar beets.
2. Is the substance consistent with organic farming and handling? [§6517 c (1)(A)(iii); 6517 c (2)(A)(ii)]			X	
3. Is the substance compatible with a system of sustainable agriculture? [§6518 m.7]			X	
4. Is the nutritional quality of the food maintained with the substance? [§205.600 b.3]	X			TR: no mention or data was presented showing a decrease in the nutritional value due to addition.
5. Is the primary use as a preservative? [§205.600 b.4]		X		TR: sugar beet fiber can bind water and thus act as a preservative
6. Is the primary use to recreate or improve flavors, colors, textures, or nutritive values lost in processing (except when required by law, e.g., vitamin D in milk)? [205.600 b.4]		X		Can be used to improve texture but this is not the primary use.
7. Is the substance used in production, and does it contain an active synthetic ingredient in the following categories:			X	
a. copper and sulfur compounds;				
b. toxins derived from bacteria;			X	
c. pheromones, soaps, horticultural oils, fish emulsions, treated seed, vitamins and minerals?			X	
d. livestock parasiticides and medicines?			X	
e. production aids including netting, tree wraps and seals, insect traps, sticky barriers, row covers, and equipment cleaners?			X	

¹If the substance under review is for crops or livestock production, all of the questions from 205.600 (b) are N/A—not applicable.

NOSB Evaluation Criteria for Substances Added To the National List

Category 4. Is the commercial supply of an agricultural substance as organic, fragile or potentially unavailable? [§6610, 6518, 6519, 205.2, 205.105 (d), 205.600 (c) 205.2, 205.105 (d), 205.600 (c)] **Substance: Sugar beet fiber**

Question	Yes	No	N/A ¹	Documentation (TAP; petition; regulatory agency; other)
1. <u>Is the comparative description provided</u> as to why the non-organic form of the material /substance is necessary for use in organic handling?	X			Petition: there is not a currently certified source available in large quantity. TR states some suppliers internationally.
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?		X		TR: does mention that production of the crop is challenged by weed pest pressure.
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?		X		
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?	X			Past suppliers stopped producing it due to lack of purchasing.
5. Does the industry information provided on material / substance non-availability as organic, include (but not limited to) the following:		X		
a. Regions of production (including factors such as climate and number of regions);				
b. Number of suppliers and amount produced;	X			TR: may be suppliers in the world, but none in the US
c. Current and historical supplies related to weather events such as		X		

hurricanes, floods, and droughts that may temporarily halt production or destroy crops or supplies;				
d. Trade-related issues such as evidence of hoarding, war, trade barriers, or civil unrest that may temporarily restrict supplies; or		X		
e. Are there other issues which may present a challenge to a consistent supply?		X		GMO contamination of organic crops/products?

¹If the substance under review is for crops or livestock production, all of the questions from 205.600 (b) are N /A—not applicable.