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September 17, 2018

Ms. Michelle Arsenault
National Organic Standards Board
USDA-AMS-NOP
1400 Independence Ave. SW
Room 2648-S, Mail Stop 0268
Washington, DC 20250-0268

Re. HS: 2020 Sunsets §605 and §605

These comments to the National Organic Standards Board (NOSB) on its Fall 2018 agenda are submitted on behalf of Beyond Pesticides. Founded in 1981 as a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to bridge the interests of consumers, farmers and farmworkers, Beyond Pesticides advances improved protections from pesticides and alternative pest management strategies that reduce or eliminate a reliance on pesticides. Our membership and network span the 50 states and the world.

Calcium carbonate

§205.605(a)

Past supporters of the listing of calcium carbonate have stated that calcium carbonate is used as a calcium source in soy-based cheese alternative, to provide a similar calcium level for nutritional purposes. Alternatives are not more natural and may change the flavor of the soy-based cheese alternative. It is also used as a gelling agent in soy yogurt and a pH buffer.

Conclusion

Beyond Pesticides supports the relisting of calcium carbonate.

Flavors

§205.605(a), nonsynthetic sources only and must not be produced using synthetic solvents and carrier systems or any artificial preservative.

At the Fall 2015 meeting, the NOSB voted to change the annotation to: **"Flavors, non-synthetic flavors may be used when organic flavors are not commercially available. All flavors must be derived from organic or nonsynthetic sources only, and must not be produced using synthetic solvents and carrier systems or any artificial preservative."**

The changed annotation has been included in proposed rulemaking by NOP. **We support relisting with the new annotation. We also support the plan outlined by the Handling Subcommittee (HS) and urge its adoption as a recommendation by the NOSB by adding an expiration date to the listing.**

As the HS pointed out in 2015, given the complexity of types of flavors, it is not always obvious what is organic about an organic flavoring product. When flavors were approved for addition to the National List in 1995, the NOSB laid out a plan:

- First, to list for use in organic foods flavors meeting these conditions (others for made with organic):
    - All of the flavor constituents used in the natural flavor are from natural sources and have not been chemically modified in a way which makes them different from their natural chemical state.
    - The natural flavor has not been produced using any synthetic solvent and carrier systems or any artificial preservatives.

- Second, manufacturers should document in their Organic Handling Plans progress towards wholly organic natural flavors:
    1) Natural flavor constituents and non-synthetic carrier base and preservative agents (e.g., grain ethanol, non-synthetic glycerin and non-synthetic acetic acid).
    2) Organic flavor constituents, organic carrier base, and organic preservative agents.
    3) Organic flavor constituents extracted using organically produced solvents, organic carrier base, and organic preservative agents.

The rule was published with the current listing, applying to both organic and made with organic foods on §205.605(a): "Flavors, nonsynthetic sources only and must not be produced using synthetic solvents and carrier systems or any artificial preservative."

The current proposed rule, based on the NOSB recommendation that is slightly stronger than the OTA petition, calls for the listing, "Non-synthetic flavors may be used when organic flavors are not commercially available. All flavors must be derived from organic or nonsynthetic sources only, and must not be produced using synthetic solvents and carrier systems or any artificial preservative."

This is a small step along the path laid out in the original recommendation, according to which, producers of flavors used in organic foods should have –and presumably should have been acting on—a plan to move towards all-organic flavors. Given the elapsed time, we must agree with concerns voiced by the HS that the proposal does not go far enough. To address these concerns, the HS said,

> It is the subcommittee's opinion that this is just a first step and that future NOSB's should continue to push industry in the development and adoption of organic flavors along the lines original envisioned in 1995:
> Current - Natural flavor constituents and non-synthetic carrier base and preservative agents

Proposed, when commercially available: Organic flavor constituents, organic carrier base, and organic preservative agents
Future: Organic flavor constituents, organic carrier base, and organic preservative agents and then organic flavor constituents extracted using organically produced solvent, organic carrier base, and organic preservative agents.

It has taken 20 years to move from step one to step two in this progression. We suggest that in order to ensure that the final step will occur in the near future the NOSB add a deadline for moving to the final step. This could be accomplished by adding an expiration date (which would be the same as the next sunset date) to the proposed listing:

Until xxx, non-synthetic flavors may be used when organic flavors are not commercially available. All flavors must be derived from organic or nonsynthetic sources only, and must not be produced using synthetic solvents and carrier systems or any artificial preservative.

Conclusion

Beyond Pesticides supports relisting with the new annotation and encourages the addition of an expiration date.

Gellan Gum

§205.605(a) Gellan gum (CAS # 71010-52-1) - high acyl form only.

The NOSB adopted a policy that Confidential Business Information (CBI) claims will no longer be accepted in petitions. This policy places new materials petitions at a disadvantage in having to disclose information not disclosed by previous petitioners. In the interest of fairness, therefore, materials should not be relisted during the sunset process unless the CBI claimed in the original petition is disclosed. In the case of gellan gum, the petitioner claimed as CBI sections of the petition relating to amounts of the material used in products and the entire section on "sources and detailed description of manufacturing procedures."

This data should be disclosed, and it should be disclosed in a manner that allows public comment on it to be considered "timely." We request that the sunset date be replaced by an expiration date. The sunset policy announced September 16, 2013 reverses the previous policy and eliminates the true sunsetting of National List materials. In order to restore the sunset as envisioned by the authors of OFPA, the sunset date must be replaced by an expiration date. The expiration date would require that gellan gum be delisted on the sunset date unless it is repetitioned and relisted. This will allow new information –and in particular, that which had claimed to be CBI—to be considered in a meaningful fashion.

Some information about the manufacture of gellan gum is provided in the 2018 technical review.[1] The TR states that the fermentation process uses a "substrate is comprised of glucose syrup derived from maize or wheat, inorganic nitrogen, an organic nitrogen source (protein) and trace elements."[2] It also says that the fermenting organism, *Sphingomonas*

[1] Gums Technical Evaluation Report (TR). January 30, 2018.
[2] TR lines 650-651.

elodea, is not a product of genetic engineering.[3] However, unless the manufacturer has sourced organic or non-GE corn, then a glucose syrup made from corn (maize) would be considered "made with excluded methods" according to NOSB policy.

Beyond Pesticides has previously commented on the need for guidance on products of fermentation, and gellan gum provides another example of the need for such guidance. While fermentation is a biological process, and no one would disagree that pickles, wine, yogurt, and apple cider vinegar are agricultural and nonsynthetic, the case is not so clear when the substrate is largely composed of inorganic or synthetic components. Furthermore, products of fermentation in or on substrates containing genetically engineered components are not compatible with policies adopted by the NOSB. Guidance is needed both for determining when the products of fermenting organic substrates are organic and for determining whether products of vat fermentation are nonsynthetic or otherwise allowable in organic production. Given the statement that the "carbohydrate fermentation substrate is comprised of glucose syrup derived from maize or wheat, inorganic nitrogen, an organic nitrogen source (protein) and trace elements" in the TR, it is logical to assume that the medium is composed of glucose from genetically engineered corn and inorganic (possibly synthetic) nutrients.

Conclusion

Beyond Pesticides supports the sunseting of gellan gum unless the information previously claimed as CBI is released to the NOSB, made available to the public, and considered in NOSB deliberations. The listing should be annotated to ensure that it is not made with excluded methods. The NOSB should consider the question of whether <u>any</u> of the gums are essential for organic handling and processing.

The NOSB should add to its work agenda consideration of policy for the classification and listing of products of fermentation.

Oxygen

§205.605(a) - oil-free grades.

In the fall of 2015, only one commenter expressed an interest in keeping oxygen on the National List. According to recent public comment, it is used by wineries, breweries, and manufacturers of carbonated beverages.

Conclusion

Beyond Pesticides recommends relisting of oxygen.

Potassium chloride

§205.605(a)

In 2015, supporters gave two reasons for supporting the relisting of potassium chloride:

[3] TR lines 663-665.

- It provides calcium ions to assist in the gelling of pectin as a sodium replacer; it prevents pre-gelling so the finished products in yogurt is stable and has a smooth texture; and it is derived from the mineral sylvite which is naturally occurring.
- Potassium chloride functions as a salt replacer, which is important reduced sodium products, including cheese and cheese and dairy based powders.

Conclusion

Beyond Pesticides supports its use as a substitute for sodium chloride to reduce the sodium content of foods.

Alginates

§205.605(b) Synthetics allowed.

Alginates are synthetic derivatives of brown seaweeds. The listing of alginates should specify the seaweeds used and ensure that their harvest does not disturb the marine ecology. One way to do this would be to require that the seaweeds be organically produced –either through cultivation or wild harvest.

Alginates are extracted through a method that causes chemical changes. Brown algae concentrate heavy metals and radioactivity, so those contaminants will be present either in the finished product, the waste stream, or both. The use of alginates is to create textures, and is therefore incompatible with organic regulations.

Conclusion

Alginates should be removed from the National List unless they have allowed uses for which they are essential and they are produced organically, in order that production not disturb the marine ecology.

Calcium hydroxide

§205.605(b)

Calcium hydroxide is used as a pH buffer and as the alkaline substance in aluminum-free baking powder. It is also used to fortify foods with calcium, clarify sugar cane or beet juice, for making hominy and masa, and as a firming agent. It is also used in the production of organic corn starch and to remove impurities from solutions.

The use as a firming agent is not compatible with organic practices. Its use may be essential in making hominy and masa, where it causes the loss of some nutritional value, but adds calcium.

Conclusion

The listing for calcium hydroxide should clarify which uses are permitted.

Glycerides: mono- and di-

§205.605(b) for use only in drum drying of food.

In 2015, the relisting of mono- and diglycerides was supported because they are used in drum drying of certain ingredients such as potato flakes. Potato flakes have unique water absorption properties due to their surface area and the use of this material helps to prevent sticking.

Another commenter said that mono- and diglycerides are "important emulsifiers used in key organic products we produce to ensure there is no fat separation. Usage level is minimal at less than 0.25%."

The HS in 2015 identified alternatives to mono- and d-glycerides from drum drying foods: "spray drying, freeze drying, fluidized bed dryers, air lift dryers, etc. Drum drying is preferred for potato flakes. Freeze drying is said to be an acceptable alternative to drum drying. Organic soy lecithin and gum arabic could be alternative substances."

Conclusion

The use as an emulsifier is not consistent with the annotation, "for use only in drum drying of food." The NOSB should alert certifiers to this misuse. Beyond Pesticides opposes the relisting of mono- and di-glycerides because there are nonsynthetic and organic alternatives.

Ethylene

§205.605(b) - allowed for postharvest ripening of tropical fruit and degreening of citrus.

Beyond Pesticides opposes the relisting of ethylene because it is incompatible with organic agriculture. It is used as a synthetic growth regulator (ripening agent). We agree with one of the TAP reviewers, "This chemical seems incompatible with the principles of sustainable agriculture. The reason for permitting use is related solely to economics since alternatives do exist and would appear to be available to the discrete segment of the agricultural community which is served by this chemical. Moreover, it is a synthetic chemical and a dangerous chemical for its users. While it is not as toxic overall as some synthetics which will remain on the list, it is not as indispensable to a sustainable system of agriculture."[4] We also agree with the 1999 TAP review that said, "Ethylene is not an essential material to add to fruit, as sufficiently mature fruit produces it naturally; the minimum required from outside sources is zero."[5]

Magnesium stearate

§205.605(b) - for use only in agricultural products labeled "made with organic (specified ingredients or food group(s))," prohibited in agricultural products labeled "organic".

[4] http://www.ams.usda.gov/sites/default/files/media/Ethylene%202%20TR%201995.pdf p.8.
[5] http://www.ams.usda.gov/sites/default/files/media/Ethylene%202%20TR%20Processing.pdf p. 15.

In 2015, supporters cited use of magnesium stearate as a flow agent in the manufacture of organic supplement capsules, "to help ensure a consistent 'dose' of product in each capsule so that each capsule has the same amount of active ingredients.**"**

> On the other hand, The Cornucopia Institute said:
> Even though magnesium stearate is a non-toxic substance that appears essential within its very narrow and specific use by the organic supplement industry, it is clear that there are environmental consequences from the production of the oils necessary for its manufacture. Thus, the evaluation of magnesium stearate must take into consideration the use of pesticides/genetic engineering in the non-organic production of oils used for its manufacture and the availability of organic oils or sustainably produced palm oil for this purpose.

Conclusion

We share the concerns raised by Cornucopia, and do not oppose the relisting of magnesium stearate because it is used only in "made with organic" products and hence does not threaten organic integrity.

Phosphoric acid

§205.605(b) - cleaning of food-contact surfaces and equipment only.

Phosphoric acid is synthetic. It is used to remove deposits on equipment, so its use is slightly different from other "sanitizers." Among the acids used for the purpose, phosphoric acid is considered less corrosive than most. The production of phosphoric acid is dependent on phosphate mining and processing, which are polluting and produce hazardous and radioactive waste products. Contact of phosphoric acid with skin and eyes should be avoided because of its corrosivity. Phosphate pollution contributing to eutrophication of waterbodies receiving treated wastewater is a possible consequence of the use of phosphoric acid cleaners.

In 2015, some users supported use of phosphoric acid in ways that are not allowed by the listing. NOSB and certifiers should ensure that processors and handlers are using phosphoric acid only in ways that are consistent with the annotation.

Conclusion

Phosphoric acid poses environmental hazards in manufacture and disposal,[6] and health risks during use. Because its use is slightly different from the other materials on the National List, there may not be a more compatible substance available. We encourage the NOSB to continue to seek safer alternatives.[7]

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[6] TAP review, 2003. https://www.ams.usda.gov/sites/default/files/media/Phos%20acid%20technical%20advisory%20panel%20report.pdf.

[7] See "descalers" at http://www2.epa.gov/saferchoice/products.

Potassium carbonate
§205.605(b)

In 2015, supporters of the relisting of potassium carbonate pointed to its use in the Dutch alkali process for processing cocoa and chocolate. The comment made then that "Removal from the list would mark the end of chocolate milk and our chocolate protein drinks" seems to be an exaggeration since cocoa not treated with alkali ("natural" as opposed "Dutch" cocoa) is widely available, though it differs in flavor.[8]

Conclusion

As presented by the HS, potassium carbonate appears to be a hazardous substance that has many uses.[9] But the HS has not analyzed its essentiality for those uses. **Beyond Pesticides asks the NOSB to consider the essentiality of potassium carbonate.**

Sulfur dioxide
§205.605(b) for use only in wine labeled "made with organic grapes," Provided, That, total sulfite concentration does not exceed 100 ppm.

Sulfur dioxide is a major air pollutant and has significant impacts upon human health as well as plants and animals. Inhaling sulfur dioxide is associated with increased respiratory symptoms and disease, difficulty in breathing, and premature death. It is estimated that anywhere between 0.4 and 1 percent of the general population is sensitive to sulfites, and a person who is sensitive to sulfite may suffer effects that range from moderate to life-threatening ones. There are small amounts of B vitamins in wine, and sulfur dioxide depletes them. Organic wine is made without sulfur dioxide.

Conclusion

Sulfur dioxide is a synthetic preservative, but it is limited in the listing to use only in wine labeled "made with organic grapes," which does not threaten the integrity of the organic label.

Xanthan gum
§205.605(b)

Xanthan gum is produced by fermentation of crop pathogenic bacteria in a complex nutrient broth, extracted by a difficult process involving a number of synthetic solvents. Effluents from manufacture are unknown, as are ancillary substances. Xanthan gum can cause respiratory symptoms in workers; necrotizing enterocolitis in infants; allergies, depending on source of fermentation medium; and intestinal distress, including bloating and diarrhea, in consumers.[10]

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[8] http://www.seriouseats.com/2014/08/difference-dutch-process-natural-cocoa-powder-substitute.html.

[9] According to the HS in 2015, "Potassium carbonate is a strongly alkaline white salt which is made by passing carbon dioxide through a solution of potassium hydroxide. It is a caustic material with chlorine gas a bi-product at manufacture collected to avoid environmental pollution and human health impacts."

[10] http://en.wikipedia.org/wiki/Xanthan_gum#Health.

Xanthan gum is a good example of the need for guidance regarding the classification and acceptability of products of fermentation. Xanthan is the product of fermentation that uses a plant pathogenic organism. The fermentation medium is a complex chemical mixture, and the recovery of xanthan gum from the fermentation broth is a difficult and expensive process that depends on a number of synthetic solvents:

> The main steps of the recovery process are deactivation and removal (or lysis) of the microbial cells, precipitation of the biopolymer, dewatering, drying, and milling. Processing must be done without degrading the biopolymer. The final product is usually a dry powder or a concentrated solution. Numerous methods have been developed to deactivate, lyse, or remove cells from the broth. Treatment with chemicals (e.g. alkali, hypochlorite, enzymes), by mechanical means, and thermal treatment are used. Chemical treatment at elevated pH can cause depyruvylation of the product. When enzymes are used, they must be removed from the medium and this adds to costs. Usually, the fermentation broth is pasteurized or sterilized to kill the cells. These thermal treatments also enhance xanthan removal from the cells. Pasteurization of the fermentation broth at a high temperature often causes thermal degradation of the microbial exopolysaccharides. When the broth is treated under proper conditions (80± 130°C, 10±20 min, pH 6.3±6.9) enhanced xanthan dissolution occurs without thermal degradation and disruption of cells is observed. The increased temperature also reduces the viscosity of the broth to ease removal of the insolubles by centrifugation or filtration.
>
> For highly viscous xanthan broths, viscosity reduction must precede filtration. Viscosity is reduced by dilution or heating. The fermentation broth is usually diluted in water, alcohol, or mixtures of alcohol and salts in quantities lower than those needed for xanthan precipitation. The diluted and/or heated broth is filtered to remove the solids. Filtration is improved in presence of alcohol.
>
> Xanthan in solution can be viewed as a hydrophilic colloid forming a true solution in water. Precipitation of polymer is achieved by decreasing the solubility of the dissolved colloid using methods such as addition of salts, water-miscible non-solvents, and concentration by evaporation. Recovery options that have been studied include precipitation with organic solvent such as ethanol and isopropyl alcohol (IPA); the use of mixtures of salts and alcohol; and precipitation with trivalent or tetravalent salts. Also, the use of ultrafiltration has been reported. The most common technique used for the primary isolation and purification of polysaccharides is precipitation using water miscible non-solvents such as alcohols. Both the cost of alcohol for recovery and the inevitable losses contribute significantly to the total cost of production. A knowledge of the mechanisms controlling phase separation is useful for devising alternatives to alcohol precipitation and for determining the conditions under which alcohol usage can be minimized.
>
> The lower alcohols (methanol, ethanol, isopropanol) and acetone, which are non-solvents for the polysaccharide, can be added to the fermentation broth not only to

decrease the solubility until phase separation occurs, but also to wash out impurities such as colored components, salts, and cells.[11]

So, unlike glycerin, which may be made by fermenting an agricultural product, xanthan gum is the result of fermenting a broth that may or may not be synthetic by OFPA standards, but is certainly not an agricultural product. Two of the TAP reviewers considered xanthan gum to be synthetic by virtue of the use of synthetic solvents to purify it, and the other considered it to be nonsynthetic.[12] Absent guidance on fermentation processes, however, it is not clear what criteria the NOSB should apply in classifying materials like xanthan gum. In addition, it is not clear how the NOSB should evaluate the manufacture and compatibility of a product made by such a process.

In 2015, CP Kelco asked that the USDA NOP and NOSB consider changing the listing of xanthan gum to §205.605(a) as a non-synthetic because xanthan gum is produced through the natural process of bacterial growth the same as gellan gum which is listed at §205.605(a), so xanthan gum belongs on §205.605(a).

OMRI said,

> Xanthan gum is used extensively in OMRI Listed® products and appears to be available without ancillary substances. We would like the NOSB to consider whether xanthan gum is more appropriately classified as nonsynthetic and should be moved to 205.605(a). Although the 1995 TAP report references the extraction of salts of xanthan gum, current manufacturing processes indicate that it is a product of a naturally-occurring biological process (fermentation), and the gum is then precipitated out of solution with isopropyl alcohol, which is later removed by flash evaporation. The precipitation would be considered a physical process and does not chemically change the gum. OMRI permits the use of xanthan gum as a nonsynthetic ingredient in other products for fertilizers and livestock use.

Consumer Reports commented that more information is needed about the health effects of xanthan gum:

> In 2011, the Centers for Disease Control and Prevention and the Food and Drug Administration warned parents and caregivers not to feed a xanthan gum thickener to premature infants, because it "may cause necrotizing enterocolitis (NEC), a life-threatening condition characterized by inflammation and death of intestinal tissue." An article in the *Journal of Pediatrics* identified 22 cases of necrotizing enterocolitis linked with ingestion of xanthan gum in 2011. The New York *Times* reported seven deaths of infants and 14 cases of infants needing surgery after receiving xanthan gum. Given these reports, and potential concerns about xanthan gum's human health impacts, we believe that xanthan gum should have an updated technical review before the Sunset vote at the Fall 2015 meeting.

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[11] Garcıa-Ochoa, F., Santos, V. E., Casas, J. A., & Gomez, E. (2000). Xanthan gum: production, recovery, and properties. *Biotechnology advances*, *18*(7), 549-579.

[12] TAP, pp.5, 7.

Conclusion

Xanthan gum should be removed from the National List unless it has allowed uses for which it is essential. The NOSB should consider the question of whether <u>any</u> of the gums are essential for organic handling and processing.

Fructooligosaccharides (FOS)

§205.606(h) Fructooligosaccharides (CAS # 308066-66-2)

Product of fermentation

The TR describes FOS as a synthetic material manufactured by a fermentation that converts sucrose into short-chain fructooligosaccharides. It says (lines 148-150), "Although short-chain fructooligosaccharides is [*sic*] produced with a fungal enzyme b-fructofuranosidase on inulin (IOM 2001), commercial quantities are produced by a controlled process and combination of ingredients (sucrose, water, enzyme, hydrochloric acid, or sodium hydroxide) that does not occur in nature."

In this case, the fermentation does not appear to be "food processing," but a manufacturing process. Therefore, it is not eligible for listing on §205.606, but should be considered for §205.605. In addition, since the manufacture involves a chemical change that does not occur in nature, FOS should be petitioned for inclusion on §205.605(b).

In 2015, it was supported by one company as a prebiotic soluble fiber used in baking. The original petitioner (Stonyfield) did not support it. Consumer Reports opposed the relisting of fructooligosaccharides (FOS) because it is not an agricultural product appropriate for §205.606. CR said:

> When FOS are listed as an ingredient, it is not identified by the agricultural starting material. Rather, FOS is identified by its trade names, which include "Neosugar" and "NutraFlora." Fructooligosaccharides (FOS) are a highly processed isolate of an agricultural product and should not be listed as an agricultural on 205.606. As with inulin, the definition in 7 CFR 205 does not apply. The 2015 FOS Technical Report (TR) notes: "FOS are not naturally available from unprocessed foods, but must be released from inulin through partial hydrolysis or chemical breakdown by reaction with water."

Conclusion

In 2015, the HS said, "Upon reviewing draft guidance NOP 5033 on Agricultural/Non-Agricultural Classification and the information contained in the Technical Review the Handling Subcommittee continues to believe the Agricultural classification is correct." However, it does not give any specifics of its analysis that would allow the rest of the NOSB to determine whether they agree. Lacking any such explanation, Beyond Pesticide supports removing FOS from §205.606 because it is not an agricultural product.

Gums: Arabic, Carob bean, Guar, Locust bean

§205.606(k) Gums - water extracted only (Arabic; Guar; Locust bean; and Carob bean)

Arabic gum

Gum arabic, also known as acacia gum, *chaar gund*, *char goond*, or *meska*, is a natural gum made of hardened sap taken from wild trees of two species of acacia; *Senegalia (Acacia) senegal* and *Vachellia (Acacia) seyal*. The trees grow throughout the Sahel from Senegal to Somalia. The primary use of gum Arabic is as a stabilizer. Because it is harvested from wild trees, no pesticides are known to be used on gum Arabic.

The HS should investigate whether there is gum Arabic available that could be certified as wild crafted organic, to ensure that harvesters comply with §205.207(b) – A wild crop must 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.

Carob bean gum, Locust bean gum

Locust bean gum and carob bean gum both refer to gum extracted from carob (*Ceratonia silique*). Carob, which is used as a chocolate substitute, is derived from the pods in which the seeds are found.[13] Organic carob is available. There are only few pests known to cause severe damage in carob orchards therefore it has traditionally not been treated with pesticides.[14] No pesticide tolerances appear to exist for carob or locust bean gum.

Since the crop is not treated with pesticides, and organically produced carob is available, the HS should investigate the availability of organic carob/locust bean gum for this purpose, as well as the potential availability of the gum if the demand existed.

Guar gum

In July 2007, the European Commission issued a health warning to its member states after high levels of dioxins were detected in a food additive –guar gum– used as thickener in small quantities in meat, dairy, dessert or delicatessen products. The source was traced to guar gum from India that was contaminated with pentachlorophenol, which contains dioxins as contaminants.[15]

In the United States, guar is grown in west Texas. Trifluralin and clethodim herbicides are used in guar production. In addition, paraquat, glyphosate, and sodium chlorate are used as harvest aids.[16]

Pesticide Tolerances —Health and Environmental Effects: The database shows that while guar grown with toxic chemicals shows low pesticide residues on the finished commodity, there are 5 pesticides used on guar, two are acutely toxic creating a hazardous environment for farmworkers, five are linked to chronic health problems (such as cancer), two contaminate streams or groundwater, and five are poisonous to wildlife.

[13] http://en.wikipedia.org/wiki/Ceratonia_siliqua.
[14] http://en.wikipedia.org/wiki/Ceratonia_siliqua.
[15] http://en.wikipedia.org/wiki/Guar_gum.
[16] http://lubbock.tamu.edu/files/2013/06/Guar-Production-Industry-Texas-May2013-Trostle.pdf.

The evaluation of guar gum must take into consideration the use of pesticides in the non-organic production of guar and the availability of organic guar for this purpose, as well as the potential availability of the gum if the demand existed.

Conclusion

The HS should consider an annotation that separates the three gums, so that organic supply (including wild crafted organic) can be taken into account for those that are produced organically or wild crafted. The NOSB should consider the question of whether <u>any</u> of the gums are essential for organic handling and processing.

Lecithin - de-oiled

§205.606(o) Lecithin – de-oiled

In May 2009, the listing for unbleached lecithin was replaced with a listing for de-oiled lecithin, to clarify which form of lecithin was not available in organic form. In 2015, the NOSB heard testimony that organic de-oiled soy lecithin is now available, along with testimony from others who distrusted the supply. Non-soy de-oiled lecithin was not identified in organic form.

The manufacture of non-organic lecithin depends on the production of non-organic soybeans. In evaluating the potential environmental hazards associated with non-organic lecithin production, the NOSB must consider, in addition to the use of volatile synthetic solvents, the environmental impacts of chemical-intensive production of soybeans.

Every sunset review provides an opportunity to revisit the supply of organic products on §606. This material appears to be very close to meeting the threshold for removal from the list.

Soybeans

California Farmworker Poisonings, 1992–2010: 1 reported. This poisoning incident represents only the tip of the iceberg because it only reflects reported incidents in one state. It is widely recognized that pesticide incidents are underreported and often misdiagnosed.

Pesticide Tolerances —Health and Environmental Effects: The database shows that while soybeans grown with toxic chemicals show low pesticide residues on the finished commodity, there are 83 pesticides with established tolerance for soybeans, 37 are acutely toxic creating a hazardous environment for farmworkers, 76 are linked to chronic health problems (such as cancer), 28 contaminate streams or groundwater, and 75 are poisonous to wildlife.

Pollinator Impacts: In addition to habitat loss due to the expansion of agricultural and urban areas, the database shows that there are 31 pesticides used on soybeans that are considered toxic to honey bees and other insect pollinators. For more information on how to protect pollinators from pesticides, see Beyond Pesticides' BEE Protective webpage.

- This crop is dependent on pollinators. ✔
- This crop is foraged by pollinators. ✔

The evaluation of de-oiled lecithin must take into consideration the use of pesticides in the non-organic production of soybean and ensure that GMO soy is not used in organic products. The NOSB must consider the availability of organic soybeans for this purpose, as well as the potential availability of de-oiled lecithin if the demand was increased by the removal of this listing.

Conclusion

Beyond Pesticides supports the allowing de-oiled lecithin to sunset because of the hazards associated with its production and the availability of organic lecithin.

Tragacanth gum

The Center for Science in the Public Interest lists tragacanth gum as a food additive that certain people should avoid because it has caused occasional severe allergic reactions. The HS has not previously investigated the impacts of nonorganic production of tragacanth gum on consumers, workers, or the environment.

Beyond Pesticides opposes the relisting of tragacanth gum on §205.606. There are potential health effects that have not been taken into account. The NOSB should consider the question of whether <u>any</u> of the gums are essential for organic handling and processing.

Thank you for your consideration of these comments.

Sincerely,

Terry Shistar, Ph.D.
Board of Directors