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National Organic Standards Board
USDA-AMS-NOP
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Room 2648-S, Mail Stop 0268
Washington, DC 20250-0268

Docket ID # AMS-NOP-19-0095

Re. HS: Sunset 606

These comments to the National Organic Standards Board (NOSB) on its Spring 2020 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.

It is time to stop adding listings to §606 and phase out current listings.

Organic production is grown up now, and any agricultural commodity can be produced organically. Listing on §606 only stifles organic production of new organic crops and promotes chemical-intensive production. Finally, in the time that it takes to add new regulations, petitioners could develop the demand for the organic product.

Pesticide exposure poses tremendous health threats to humans, especially the farmworkers who work in chemical-intensive operations.[1] Given the human impacts, the crash of insect populations worldwide,[2] the vulnerability of pollinators to synthetic pesticides,[3] and habitat destruction in nonorganic agriculture, it is crucial that we move away from any

[1] See Beyond Pesticides databases, Pesticide-Induced Diseases Database https://beyondpesticides.org/resources/pesticide-induced-diseases-database/overview, Eating With a Conscience https://beyondpesticides.org/resources/eating-with-a-conscience/overview, and the Pesticide Gateway https://beyondpesticides.org/resources/pesticide-gateway.
[2] https://beyondpesticides.org/dailynewsblog/2019/02/study-predicts-demise-of-insects-within-decades-if-pesticide-dependence-continues/.
[3] https://beyondpesticides.org/programs/bee-protective-pollinators-and-pesticides/what-the-science-shows.

dependence on non-organic ingredients. Thus, our reviews of sunsets for §606 materials summarize some impacts of producing these materials in a chemical-intensive system.

In its discussion of Turkish bay leaves, the HS said, "One commenter noted concern regarding impacts of pesticide use and residue when a conventional agricultural ingredient is used. Products certified to the "made with organic…" may use non-organic agricultural ingredients that are not listed on §205.606 and have not undergone a review for compliance with OFPA criteria. However, these ingredients are still required to comply with §205.105, which prohibits ingredients that are irradiated, produced with sewage sludge or with excluded methods. Additionally, the commenter provided no data specifically on pesticide usage and residues on Turkish bay leaves and just cited EPA tolerance levels for pesticides on herbs subgroup 19A."

We cannot predict which of the pesticides allowed to be used on a product (or component/feed of a product) on §606 will actually be used on that product. If the HS thinks that information is important, then it should request it from USDA. However, any of the pesticides we list that have tolerances for use on the product may be used on any particular batch of the nonorganic product.

Questions that need to be addressed before renewing any listing on §606.

Materials on §205.606 are allowed in products labeled as organic if they are agriculturally produced, but have been found to not be commercially available as organic. The NOSB needs to know what the barriers are to producing the product organically. The Handling Subcommittee should get documented answers to the following questions in determining the barriers to organic production, for both petitions and sunsets.

1. What are the proximity constraints for either a manufactured or raw agricultural commodity in organic form? Examples include perishability, political climate (war zone) of the area where the agricultural production occurs, and the location of the manufacturing facility.
2. Is there insufficient raw organic agricultural production within the necessary proximity of the main manufacturing facility? Shipping costs are not to be part of the consideration.
3. Are there other manufacturing facilities that may have organic agricultural raw ingredient production nearby, or could be enticed to produce this ingredient in an organic form?
4. If raw agricultural production is required in a specific climate or soil type where there currently is no organic production and prospects for organic production are difficult (climate, transportation, war etc.), has production in other areas of the world been researched and work begun to develop new sources of organic crop production of the source ingredients for this product?
5. If there is only non-organic production near a manufacturing facility, what are the barriers to having these producers transition some or all of their production to organic?

6. Have the petitioner and users of this §205.606 ingredient worked with both the manufacturing facilities and pools of growers in the area to develop a supply of raw organic crops to produce this ingredient?
7. Is the demand for this ingredient across the organic industry sufficient to meet the minimum manufacturing production run?
8. Have all possible manufacturers (domestic and international) of this ingredient been researched to determine their minimum production runs and regions where the raw agricultural ingredient or ingredients are grown?
9. Can the ingredient be manufactured from not only raw agricultural ingredients, but possibly a secondary manufactured ingredient, such as beet color made not only from raw organic beets, but also from a preprocessed beet juice or beet powder that could be obtained in an organic form? Another example would be instant nonfat dry milk powder made not just from liquid organic skim milk, but from non-instant organic nonfat dry milk powder.
10. Is the process by which this product is manufactured patented, and if so, is the manufacturer willing to produce an organic equivalent?
11. Is there documentation of the petitioner's efforts to develop organic production?
12. Can the petitioner prove that a specific flavor profile can only be achieved from the petitioned material grown in a specific region?

Inulin-oligofructose enriched (IOE)

Reference: 205.606(l) Inulin-oligofructose enriched (CAS # 9005-80-5)

In Fall 2015, the NOSB voted unanimously to remove inulin-oligofructose from the National List. After five years, it has not been removed. It should be removed and taken off the NOSB agenda. Below are our comments from 2015.

Product of fermentation According to the patent included in the petition, IOF consists of inulin extracted from chicory "co-processed" with fructooligosaccharides (FOS). The inulin is extracted with hot water followed by a purification process involving treatment with lime, in which the calcium hydroxide reacts with carbon dioxide and absorbs unwanted components, leaving a residue that is further treated with ion exchange and carbon filtration. Up to that stage, it could be called an agricultural product. However, the addition of FOS, a synthetic nonagricultural, creates a synthetic nonagricultural product.[4] Therefore, IOF does not belong on §205.606, but should be petitioned for §205.605(b).

Beyond Pesticides supports the NOSB recommendation to remove IOE from §205.606 because IOE is not an agricultural product.

[4] In 2015, we commented on FOS: "The TR describes FOS as a synthetic material. . . , '[C]ommercial 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.' . . . [S]ince the manufacture involves a chemical change that does not occur in nature, FOS should be petitioned for inclusion on §205.605(b)."

Kelp

Reference: 205.606(m) Kelp—for use only as a thickener and dietary supplement.

"Kelp" is not well-defined. As stated in the Fall 2016 discussion document on marine materials,

> **Kelp** is a broad generic term for brown seaweeds, Class *Phaeophyceae*, in the Order *Laminariales*, with at least 30 genera and many species, and in the Order *Fucaceae* such as *Ascophyllum nodosum.* However the term "kelp" as used in fertilizer means ANY macroalgae seaweed, brown (*Phaeophyceae*), red (*Rhodophyceae)* or green (*Chlorophyceae)* (Assoc. of American Plant Food Controls (AAPFC)). Kelp used in organic livestock production must be certified organic, but for use in processing for humans non-organic kelp is allowed. Pacific Kombu, and *Undaria innatifida* are also Kelp species. *Fucus* species are intertidal, but *Laminaria* species are deep water.

Of the species identified as "kelp," at least two are considered to be both ecologically significant due to the structural habitats they provide and at risk of being overharvested.[5] Although kelp itself recovers from intensive harvesting,[6] kelp harvesting can have significant impacts on other members of the ecosystem.[7] There is evidence that kelp concentrates heavy metals, and it is used to monitor heavy metal contamination.[8] Arsenic poisoning has been documented from kelp supplements.[9]

While the NOSB considers, in broad terms, an approach to ensuring that organic production does not endanger marine plants and algae, the board still has a responsibility to look at the impacts of individual listings of seaweeds. Delisting kelp from §606 would be a positive step, since it would require kelp to be organically produced, which would require 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." Species that can be cultivated must be produced in compliance with the definition of "organic production," that is, "managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity."[10] The Organic Integrity Database lists 97 suppliers of organic kelp.

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[5] Marine plants and algae TR, 2018. Lines 523-524, 528-535, 356-360.

[6] Rothman, M. D., Anderson, R. J., & Smit, A. J. (2006). The effects of harvesting of the South African kelp (Ecklonia maxima) on kelp population structure, growth rate and recruitment. *Journal of applied phycology*, *18*(3-5), 335-341.

[7] Lorentsen, S. H., Sjøtun, K., & Grémillet, D. (2010). Multi-trophic consequences of kelp harvest. *Biological Conservation*, *143*(9), 2054-2062.

[8] David A. Roberts, Emma L. Johnston, Alistair G.B. Poore, 2008. Contamination of marine biogenic habitats and effects upon associated epifauna. Marine Pollution Bulletin 56:1057–1065.

[9] Eric Amster, Asheesh Tiwary, and Marc B. Schenker, 2007. Case Report: Potential Arsenic Toxicosis Secondary to Herbal Kelp Supplement. Environmental Health Perspectives 115(4): 606-608.

[10] §205.2.

Orange shellac

Reference: 205.606(r) Orange shellac-unbleached (CAS # 9000-59-3)

Orange shellac is produced from the secretions of the lac insect (*Kerria lacca*), which sucks the sap of several host trees. As far as we can determine, there are few pests that harm host trees, so few pesticides are likely to be used in shellac production. However, this is an issue that the HS should address.

TAP reviewers and the TR raised issues associated with compatibility and ancillary substances. It appears that shellac is used as a preservative when applied as a coating to fruit, which is the major use addressed by the TAP and TR. It is used to provide a barrier preventing the loss of moisture and the movement of gases through the skin of the fruit. While the regulations permit the use of natural materials for this use, the reviewers point out that consumers do not expect organic produce to be waxed, especially without notifying consumers, some of whom may be allergic to shellac or its ancillary substances. The TR and TAP mention a number of possible ancillary substances, including the toxic antimicrobial morpholine. It is important to identify which of these ancillary substances are allowed in orange shellac used on organic produce.

The evaluation of orange shellac must investigate the use of pesticides in the non-organic production of the host species and the potential availability of organic orange shellac if the demand existed. The HS must identify allowed ancillary substances and ensure that toxic chemicals are not permitted. Finally, the NOSB must consider the question of whether orange shellac as formulated and applied to fruit meets consumer expectations for organic produce.

Cornstarch, native

Reference: 205.606(v) (1) Cornstarch (native)

Non-organic corn production is an intensive user of pesticides and synthetic fertilizers. Most of the non-organic corn is also genetically modified.

Pesticide Tolerances—Health and Environmental Effects: The database shows that while field corn products grown with toxic chemicals show low pesticide residues on the finished commodity, there are 140 pesticides with established tolerance for field corn products. Of these, at least 37 are acutely toxic, creating a hazardous environment for farmworkers, 97 are linked to chronic health problems (such as cancer), 31 contaminate streams or groundwater, and 87 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 29 pesticides used on field corn products 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, bp-dc.org/pollinators.

- This crop is foraged by pollinators.

The evaluation of cornstarch must take into consideration the use of pesticides in the non-organic production of corn and ensure that GMO corn is not used in organic products. The NOSB must consider the availability of organic corn for this purpose, as well as the potential availability of cornstarch if the demand existed.

As noted in the HS published materials, there are 13 suppliers of "cornstarch" listed in the Organic Integrity Database (OID); however, there are an additional 42 suppliers listed for "corn starch," for a total of 55 suppliers listed in the OID. It would appear that some cornstarch is sufficiently available in organic form—if not all. If the NOSB hears that there are forms that continue to be unavailable in organic form, the listing should be annotated to accurately reflect those unavailable in organic form. The 2015 HS proposal provided useful information about the types of corn used for cornstarch and the types of cornstarch. Nevertheless, it is unclear whether the statement, "A supplying company and a trade association indicated that there is not a supply of organic moulding cornstarch, or the type with very high amylose content, or special strains with freeze-thaw properties" describes one type of cornstarch or three. Since it appears that some cornstarch is sufficiently available in organic form, we suggest that the HS turn this statement into an annotation regarding the cornstarch that will be relisted:

> **Cornstarch, moulding, high amylose [better definition?], or with [describe] freeze-thaw properties.**

Sweet potato starch

Reference: 205.606(v)
(2) Sweet potato starch—for bean thread production only

Pesticide Tolerances—Health and Environmental Effects: The database shows that, while sweet potatoes grown with toxic chemicals show low pesticide residues on the finished commodity, there are 48 pesticides with established tolerance for sweet potatoes, 21 are acutely toxic, creating a hazardous environment for farmworkers, 45 are linked to chronic health problems (such as cancer), 13 contaminate streams or groundwater, and 46 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 19 pesticides used on sweet potatoes 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, , bp-dc.org/pollinators.

- This crop is foraged by pollinators.

Organic sweet potato starch is available from one supplier listed on the Organic Integrity Database, and this suggests that other suppliers could help meet the demand, if producers of organic bean threads were required to use organic sweet potato starch.

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

Turkish bay leaves (*Laurus nobilis*, sweet bay)

Reference: 205.606(x) Turkish bay leaves

In Fall 2015, the NOSB voted unanimously to remove Turkish bay leaves from the National List. After five years, the listing has not been removed. It should be removed, and taken off the NOSB agenda. Below are our comments from 2015.

Impacts of Nonorganic Production of Turkish Bay Leaves:

Pesticide Tolerances —Health and Environmental Effects: The database shows that while turkish bay (sweet bay) grown with toxic chemicals show low pesticide residues on the finished commodity, there are 11 pesticides with established tolerance for turkish bay (sweet bay), four are acutely toxic, creating a hazardous environment for farmworkers, ten are linked to chronic health problems (such as cancer), three contaminate streams or groundwater, and ten 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 six pesticides used on turkish bay (sweet bay) 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, , bp-dc.org/pollinators.

Currently the Organic Integrity Database lists five suppliers of organic Turkish bay leaves.

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

Whey protein concentrate

Reference: 205.606(z) Whey protein concentrate

In Fall 2015, the NOSB voted unanimously to remove whey protein concentrate from the National List. After five years, it has not been removed. Meanwhile, the Organic Integrity Database lists 22 suppliers of organic whey protein concentrate. It should be removed and taken off the NOSB agenda. Below are our comments from 2015.

No annotation restricts the use of whey powder as a source of non-organic milk protein added to organic milk products. If 80% protein whey powder is added at the rate of 4% (80% of the allowed 5% non-organic ingredients) in organic yogurt, then approximately half of the protein in the yogurt would come from conventional dairy sources. It is not compatible with organic handling to provide half of a macronutrient in an organic product from non-organic sources.

As a product of non-organic dairy production, the HS must consider the impacts of the dairy production system that is the source of the whey. Conventional dairy relies on chemical-intensive grain production. Non-organic dairy typically results in air and water pollution from concentrated animal feeding operations.

Non-organic dairy is dependent on chemical-intensive production of corn and soybeans.

Corn

Non-organic corn production is an intensive user of pesticides and synthetic fertilizers. Most of the non-organic corn is also genetically modified.

Pesticide Tolerances—Health and Environmental Effects: The database shows that while field corn products grown with toxic chemicals show low pesticide residues on the finished commodity, there are 140 pesticides with established tolerance for field corn products,. Of these, at least 37 are acutely toxic, creating a hazardous environment for farmworkers, 97 are linked to chronic health problems (such as cancer), 31 contaminate streams or groundwater, and 87 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 29 pesticides used on field corn products 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, , bp-dc.org/pollinators.

- This crop is foraged by pollinators.

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, bp-dc.org/pollinators.

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

Carnauba Wax

Reference: 205.606(a) Carnauba wax.

Non-organic carnauba wax should not be used if organic carnauba wax is available. Since the TR documents the availability of organic carnauba wax, and 15 suppliers of organic carnauba wax are listed in the Organic Integrity Database, the HS should consider delisting it.

There is a possibility that carnauba wax extracted by a processor that is not certified may have been extracted using volatile synthetic solvents. There is also a possibility that some certifiers or materials review organizations may permit formulation using ancillary substances that are not permitted in organic products. Finally, consumers should be informed of the presence of nonorganic waxes—organic fruits and vegetables are generally assumed to be 100% organic. Therefore, we request that the listing for carnauba wax be annotated with, "Not extracted using volatile synthetic solvents; contains only ancillary substances approved for organic production; presence must be labeled on individual items."

Colors

We are disappointed that the NOSB was unable to vote to delist a number of colors at the Fall 2015 meeting. Colors listed on §606 are grown using synthetic fertilizers and pesticides. As nonessential components of food, it is not appropriate to introduce the inevitable toxic residues that they carry into organic food. These colors should be removed from §205.606 because they are commercially available in organic form in sufficient supply; non-organic colors are derived from agricultural products grown using chemical intensive agriculture; pigments are highly concentrated, and most often extracted from parts of fruits or vegetables likely to contain the highest levels of contaminants; current research is lacking to determine any resulting impact to human health; and consumers expect organic food to be unadulterated—that is, without having its essential characteristics manipulated with the addition of non-organic ingredients to enhance colors, nutritional values, or flavors.

We address other colors below.

Beet juice extract color

There are 50 listings for organic beet juice, and 47 listings with both "color" and "beet" in the Organic Integrity Database.

California Farmworker Poisonings, 1992–2010: 3 reported (CA acreage: 25,100). These poisoning incidents only represent 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 beets grown with toxic chemicals show low pesticide residues on the finished commodity, there are 45 pesticides with established tolerance for beets, 19 are acutely toxic, creating a hazardous environment for farmworkers,[11] 39 are linked to chronic health problems (such as cancer), 14 contaminate streams or groundwater, and 40 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 14 pesticides used on beets 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, bp-dc.org/pollinators.[12]

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

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

Black/Purple carrot juice color

The Organic Integrity Database contains 47 listings for organic "color" and "black carrot" and 47 listings for organic "color" and "purple carrot."

California Farmworker Poisonings, 1992–2010: 35 reported (CA acreage: 63,000). These poisoning incidents only represent 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 carrots grown with toxic chemicals show low pesticide residues on the finished commodity, there are 42 pesticides with established tolerance for carrots, 16 are acutely toxic, creating a hazardous environment for farmworkers, 39 are linked to chronic health problems (such as cancer), 13 contaminate streams or groundwater, and 42 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 17 pesticides used on carrots that are considered toxic to honey bees and other insect pollinators. This crop is dependent on pollinators.

[11] To learn more about farmworkers, see http://www.beyondpesticides.org/organicfood/conscience/farmworkers.php

[12] http://www.beeprotective.org/.

- This crop is foraged by pollinators.

The evaluation of black/purple carrot juice color must take into consideration the use of pesticides in the non-organic production of carrots and the availability of organic carrots for this purpose, as well as the potential availability of the color if the demand existed.

Cherry juice color

The Organic Integrity Database contains 23 listings for organic "color" and "cherry juice."

California Farmworker Poisonings, 1992–2010: 30 reported (CA acreage: 26,000). These poisoning incidents only represent 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 cherries grown with toxic chemicals show low pesticide residues on the finished commodity, there are 86 pesticides with established tolerance for cherries, 32 are acutely toxic, creating a hazardous environment for farmworkers, 78 are linked to chronic health problems (such as cancer), 17 contaminate streams or groundwater, and 78 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 27 pesticides used on cherries that are considered toxic to honey bees and other insect pollinators.

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

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

Pumpkin juice color (pesticide data for winter squash)

The Organic Integrity Database contains 25 listings for organic "color" and "pumpkin juice."

California Farmworker Poisonings, 1992–2010: 3 reported (CA acreage:). These poisoning incidents only represent 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 winter squash grown with toxic chemicals show low pesticide residues on the finished commodity, there are 75 pesticides with established tolerance for winter squash, 31 are acutely toxic, creating a hazardous environment for farmworkers, 69 are linked to chronic health

problems (such as cancer), 14 contaminate streams or groundwater, and 64 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 27 pesticides used on winter squash that are considered toxic to honey bees and other insect pollinators.

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

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

Red cabbage extract color
The Organic Integrity Database contains 24 listings for organic "color" and "red cabbage."

California Farmworker Poisonings, 1992–2010: 6 reported (CA acreage: 14,200). These poisoning incidents only represent 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 cabbage grown with toxic chemicals show low pesticide residues on the finished commodity, there are 49 pesticides with established tolerance for cabbage, 32 are acutely toxic, creating a hazardous environment for farmworkers, 47 are linked to chronic health problems (such as cancer), 15 contaminate streams or groundwater, and 44 are poisonous to wildlife.

Turmeric extract color
The Organic Integrity Database contains 40 listings for organic "color" and "turmeric."

Pesticide Tolerances—Health and Environmental Effects: The database shows that while turmeric grown with toxic chemicals show low pesticide residues on the finished commodity, there are 39 pesticides with established tolerance for turmeric. Of these, at least 12 are acutely toxic, creating a hazardous environment for farmworkers, 31 are linked to chronic health problems (such as cancer), 5 contaminate streams or groundwater, and 32 are poisonous to wildlife. Four pesticides with tolerances on turmeric have not been studied enough to give any data with regard to these endpoints.

Pollinator Impacts: In addition to habitat loss due to the expansion of agricultural and urban areas, the database shows that there are at least 12 pesticides used on turmeric 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.

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

Glycerin

Glycerin is a product of fermentation and is a good example of why guidance is needed on National List materials that are produced by fermentation. Glycerin had been listed on §605(b), with the annotation, "produced by hydrolysis of fats and oils." In Spring 2015, saying, "Petitioner has requested removal of glycerin from §205.605(b) (synthetic materials for handling), stating that there is now sufficient quantity of organically produced glycerin and that synthetic glycerin is no longer required," glycerin was reclassified as agricultural and added to §606.

Glycerin is nonagricultural.

While the reclassification is consistent with the NOP guidance NOP 5033 and associated decision tree NOP 5033-2, it is not consistent with the definition of "nonagricultural" in the regulations:

> *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.[13]

As demonstrated in the technical review, glycerin is made by a number of processes. Until 2015, the product of one process, hydrolysis of fats and oils, was listed on the National List (§205.603 and §205.605(b)) as a synthetic. It is still on the list at §205.603. The petitioner who asked to delist synthetic glycerin produces "organic" glycerin through fermentation of organic cornstarch. This glycerin is considered "organic" because it is considered a processed form of organic cornstarch, and because "fermentation" is an allowed form of processing. The 2015 recommendation resulted in glycerin for use in processed food being listed only on §205.606 – apparently accepting the argument of the petitioner that it should be so listed in order to impose the commercial availability restriction.

Glycerin produced by fermentation should be removed from §606.

Ancillary substances, which were not addressed in creating this listing in 2015, must be addressed by either stating that there are none or by listing those allowable. In considering what other substances might be present in glycerin made by fermentation, residues of processing aids in cornstarch or other substrates should be included.

Listing glycerin produced by fermentation on §606 means allowing a product of fermenting cornstarch made from corn produced by chemical-intensive agriculture. Non-

[13] §205.2.

organic corn production is an intensive user of pesticides and synthetic fertilizers. Most of the non-organic corn is also genetically modified.

Corn

Pesticide Tolerances—Health and Environmental Effects: The database shows that while field corn products grown with toxic chemicals show low pesticide residues on the finished commodity, there are 140 pesticides with established tolerance for field corn products. Of these, at least 37 are acutely toxic, creating a hazardous environment for farmworkers, 97 are linked to chronic health problems (such as cancer), 31 contaminate streams or groundwater, and 87 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 29 pesticides used on field corn products 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, bp-dc.org/pollinators.

- This crop is foraged by pollinators.

Under what authority do we allow glycerin?

We do not support the classification of glycerin made by fermentation as agricultural and therefore oppose its relisting on §205.606. As stated above, in proposing this listing, the HS said, "Petitioner has requested removal of glycerin from §205.605(b) (synthetic materials for handling), stating that there is now sufficient quantity of organically produced glycerin and that synthetic glycerin is no longer required." If this is true, then the listing of glycerin on §606 would appear to be unnecessary.

But if glycerin is not agricultural, then it can be used in organic products only if listed on §605(a) or §605(b). Glycerin made by fermentation of agricultural products should be examined, and annotated if necessary, to determine classification as synthetic or nonsynthetic. Glycerin is an example of the issues that should be addressed in decisions involving fermentation products before listing and relisting such materials.

Thank you for your consideration of these comments.

Sincerely,

Terry Shistar, Ph.D.
Board of Directors