# Fall 2017 NOSB Meeting

## AT-A-GLANCE SUMMARY OF PROPOSALS AND DISCUSSION DOCUMENTS

Meeting Materials (All Proposals and Discussion Documents)

The Fall 2017 National Organic Standards Board (NOSB) Meeting will be October 29 – November 1 at the Omni Jackson Hotel in Jacksonville, Florida. The Tentative Meeting Agenda has been posted and the public comment period is now open.

The primary purpose of NOSB meetings is to provide an opportunity for organic stakeholders to give input on proposed NOSB recommendations and discussion items. The meeting is open to the public, and participants are invited to submit written comments and/or provide oral comments during one of two sessions:

- **Pre-meeting webinar**: Register to provide comments during the webinar (October 24 or October 26 from 1 – 4 p.m. Eastern)

***Note***: The registration for signing up for comments at the in-person meeting is full.

The final deadline to submit written comments **and** sign up for oral comments is **Wednesday, October 11, at midnight Eastern**. Written comments should be submitted via Regulations.gov.

## SUMMARY OF AGENDA PROPOSALS AND DISCUSSION DOCUMENTS

2019 Sunset Review (43 inputs under review, see the Sunset Survey section below for details)

- The subcommittees voted to renew all inputs with the exception of the following
  - **Crops:** Vitamin B1 used as a fertilizer amendment in organic crop production
  - ***Livestock***: Procaine used as a local anesthetic in organic livestock production
  - ***Handling***: Konjac Flour as an allowed non-organic agricultural ingredient used in processed products labeled as "organic."

### CERTIFICATION, ACCREDITATION, AND COMPLIANCE (CACS) SUBCOMMITTEE

**Eliminating the incentive to convert native ecosystems to organic farms (PROPOSAL)**

- **BACKGROUND:** The organic regulations require that all organic land be free of prohibited substances for 36 months prior to production of an organic crop. There is growing concern that producers can meet this requirement by converting native land (i.e. land that has never been farmed before) to agricultural production. Anecdotal accounts indicate that producers in the arid west may be converting native habitat to organic production, which raises questions about whether this practice meets the overall intent of organic production, which includes maintaining and improving natural ecosystems. This concern does not extend to land coming out of Conservation Reserve Program (CRP), as that land had previously been farmed.
- **SUBCOMMITTEE PROPOSAL:** NOSB is putting forth the proposal below to provide protections for ecosystems through removal of the incentive to gain immediate access to the organic market after the destruction of these native ecosystems. NOSB would like to receive feedback from certifiers on possible economic impacts this rulemaking may have on their certified operations. Specifically,

*how many operations, crops, and acreage would have been impacted if this rule had been in place in 2016?*

The subcommittee proposes to add the following in *italics* to the organic regulation:

Subpart C- Organic Production and Handling Requirements
205.200 General
The producer of a handler of a production or handling operation intending to sell, label, or represent agricultural production as "100 percent organic," "organic," or "made with organic (specified ingredients or food group(s)" must comply with the applicable provisions of this subpart. Production practices implemented in accordance with this subpart must maintain or improve the natural resources of the operation, including soil and water quality.

*A native ecosystem site that has not been previously grazed or cultivated cannot be certified as organic as provided for under this regulation for a period of 10 years from the date of conversion to crop or livestock production.*

- **SUBCOMMITTEE VOTE:** Motion to approve the proposal on eliminating the incentive to convert native ecosystem to organic production for rulemaking.
  **PASSED**: Yes: 4 No: 0 Abstain: 0 Absent: 1 Recuse: 0

**Excluded operations in the supply chain (PROPOSAL):**

- **BACKGROUND:** Organic products are the most heavily regulated products in the world, and the organic certification system is generally robust. However, recent activities and USDA investigations have revealed products fraudulently labeled as organic and gaps in the complex organic supply chain, specifically as it relates to organic imports. Compromised supply chains due to fraud can erode consumer trust in the integrity of the organic brand. Strong action is needed to improve the effectiveness of controls throughout the organic product supply chain. Everyone has a role in organic fraud prevention, and there are many avenues of action that must be taken. One part of the solution is to explore means to strengthen the regulations to shore up any gaps in the audit trail system. Under USDA organic certification, most operations in the organic supply chain are subject to certification. However, certain operations are presently excluded if they handle products that are packaged or otherwise enclosed in a container prior to being received or acquired by the operation and remain in the same package or container and are not otherwise processed while in the control of the handling operation. This presents a concern because when a product passes through an excluded handling operation such as a broker or distributor, a complete and transparent audit trail can become challenging to follow. The regulations require a certified operation to verify organic status by tracing back to the last organic certificate holder. Excluded operations, however, may present gaps in this trail as they fall outside of the scrutiny of certification.
- **SUBCOMMITTEE PROPOSAL:** This proposal seeks to further clarify what operations are excluded from certification via a revision to existing **NOP Guidance 5031 – "Certification Requirements for Handling Unpackaged Organic Products**." The proposed revision also seeks to clarify the requirements of labeling bulk packages and containers, as well as what constitutes an enclosed package or container. Specifically, NOSB suggests revising NOP 5031 to say that an operation is

excluded from certification if it only handles organic products that are enclosed in a package or container and remain in the same package or container for the entire period handled **AND** (italicized is the new language) *the package or container must be labeled as "organic" and contain the "certified organic by" certifier statement, the name of the handler and list of ingredients (if applicable).* NOSB would like to know what negative and/or economic impact there might be on the trade and movement of organic product with these clarifications, and what impact these clarifications might have on maintaining organic integrity.

- **SUBCOMMITTEE VOTE: PASSED** - Yes: 4 No: 0 Abstain: 0 Absent: 1 Recuse: 0 to approve this proposal on excluded operations in the supply chain

## CROPS SUBCOMMITTEE

**Petition to allow Fatty Alcohols (octanol/decanol mix) (Proposal)**

- **BACKGROUND:** Green Ag Supply LLC has petitioned for inclusion of natural fatty alcohols in Section 206.601(k) of the National Organic Program's National List of Allowed and Prohibited Substances (synthetic plant growth regulators). The petitioner intends to use this substance, actually a fatty alcohol blend (Octanol and Decanol), as sucker control on organic crops. According to the petitioner, the raw material for the alcohols are derived primarily from Palm Kernel Oil and Palm Oil, not synthetic alcohol. EPA has only approved fatty alcohols for use as a growth regulator on tobacco, and the technical review only covered use of fatty alcohols for use on tobacco.
- **SUBCOMMITTEE PROPOSAL:** The Crops Subcommittee does not think that use of a synthetic growth regulator is compatible with a system of sustainable and organic agriculture. It has not explained this reasoning. However, the technical review describes mechanical alternatives, namely that topping may be done by hand or with special machines that cut the flower heads and sacrifice a few leaves. Fatty alcohols also do not fall into any of the OFPA categories. The motion to add this substance to the National List failed.
  **SUBCOMMITTEE VOTE: FAILED** (Yes: 0 No: 8 Abstain: 0 Absent: 1 Recuse: 0, to add fatty alcohols (octanol/decanol mix) as petitioned at §205.601(k)(2) for use in organic crop production.

**Petition to allow Anaerobic Digestate (proposal)**

- **BACKGROUND:** Cenergy USA Inc. submitted a petition "to establish a separate classification for anaerobic digestate on the National list of Allowed and Prohibited Substances." The petition requests that anaerobic digestate fiber, or digestate, produced without synthetic materials be allowed for use in organic production exclusive of days-to-harvest restrictions following application. Since the petition did not request evaluation of any synthetic ingredients or feedstocks going into anaerobic digestate, but rather focused its request that this substance not be subject to pre-harvest intervals (90 or 120 days depending on crop contact with soil), the Crops Subcommittee indicated it was more appropriate to view this petition as an amendment to 205.203(c) (Soil fertility and crop nutrient management practice standard).
- **SUBCOMMITTEE PROPOSAL:** The Crops Subcommittee indicated that since the petition did not address specific processes by which anaerobic digestate is produced or how anaerobic digestion affects persistence of human pathogens, there was a lack of justification for removing pre-harvest intervals from anaerobic digestate that contains raw manure.
- **SUBCOMMITTEE VOTE: FAILED** (Yes: 0 No: 8 Abstain: 0 Absent: 1 Recuse: 0, to **amend section 205.203(c) of the regulations (**Soil fertility and crop nutrient management practice standard) to

allow raw animal manure when it has **"undergone an anaerobic digestion process"** and also to allow **"anaerobic digestion products that have been processed to reduce pathogens.**

**Strengthening the requirements for use of organic seed (proposal)**

- **BACKGROUND:** NOSB started soliciting public comment in 2016 on ways the organic seed guidance could and should be strengthened to achieve full compliance with the statements in the federal rule in §205.204 (a). This proposal addresses the main points brought up during both the public comment periods and NOSB discussions of this and related topics. NOSB is recommending a regulatory change as well as several revisions to NOP's existing guidance (NOP 5029) for seeds, annual seedlings and planting stock used in organic crop production.
- **SUBCOMMITTEE PROPOSAL SUMMARY**: 1) amend the regulations at 205.204 to include a statement that improvement in sourcing and use of organic seed and planting stock must be demonstrated every year until full use of organic seed is achieved; 2) revise the NOP 5029 to specifically state that producers must avoid contamination from excluded methods in seed of at-risk crops; 3) revise NOP 5029 to specify that non-organic seed may be used only if the conventional replacement can be produced without the use of excluded methods; 4) revise NOP 5029 to specify that on-farm variety trials may be used to evaluate equivalency and varieties that are available as organic and non-organic seed can be used if organic seed cannot be sourced because of GMO contamination; 5) revise NOP 5029 recordkeeping system to further address the number of sources that must be contacted (FIVE for at risk crops), the organic status of the organic companies contacted and that producers must keep records of buyer's (contracted crop) attempts to source organic seed; and 6) revise NOP 5029 to specify that certifying agents may ask for a corrective action plan and require additional efforts be made when sufficient progress towards organic seed is not demonstrated.
- **SUBCOMMITTEE VOTE:** Motion to accept all additions as described in the proposal, to both the National Organic Program Regulation and the National Organic Program 5029 Guidance
  **PASSED** - Yes: 9 No: 0 Abstain: 0 Absent: 0 Recuse: 0

**Aeroponics/Hydroponics/Aquaponics/Container Production (proposal)**

- **BACKGROUND:** NOSB continues to work on the ongoing issue of the compatibility of aeroponics, aquaponics, hydroponics and containerized production with organic production standards at the upcoming meeting.
- **SUBCOMMITTEE PROPOSAL:** The Crops Subcommittee has proposed definitions for aeroponics, hydroponics, and aquaponics, and recommended that these practices be prohibited in organic production by adding these defined terms to 7 CFR 205.105 (prohibited practices in organic production). Specifically, the Crops Subcommittee proposes the following definitions be used:
  - **Aeroponics:** A variation of hydroponics in which plant roots are suspended in air and misted with nutrient solution.
  - **Hydroponics:** Any container production system that does not meet the standard of a limit of 20% of the plants' nitrogen requirement being supplied by liquid feeding, and a limit of 50% of the plants' nitrogen requirement being added to the container after the crop has been planted.
  - **Aquaponics:** A recirculating hydroponic system in which plants are grown in nutrients originating from aquatic animal waste water, which may include the use of bacteria to

improve availability of these nutrients to the plants. The plants improve the water quality by using the nutrients, and the water is then recirculated back to the aquatic animals.

In addition, the Crops Subcommittee proposes that for container production to be certified organic, a limit of 20% of the plants' nitrogen requirement can be supplied by liquid feeding, and a limit of 50% of the plants' nitrogen requirement can be added to the container after the crop has been planted. For perennials, the nitrogen-feeding limit is calculated on an annual basis. Transplants, ornamentals, herbs, sprouts, fodder, and aquatic plants are exempt from these requirements. Later in the materials, the Crops Subcommittee indicates that its intention is to require that substrate used in container production must be a minimum of 50% compost by volume. However, this aspect was not included in the specific motion voted on by the Crops Subcommittee. Consequently, it is unclear whether this additional requirement would be part of the motion to be discussed and voted upon at the Fall 2017 meeting.

The Crops Subcommittee asks for comments on these definitions and whether they adequately address the intent of the Board to prohibit entirely water-based systems, additional aspects of hydroponic production that should be considered in a future proposal, and questions related to containerized production, which will be addressed in a future discussion document and proposal by the Crops Subcommittee.

- **SUBCOMMITTEE VOTE:** The Crops Subcommittee made four motions:
  - Three separate motions to ***prohibit*** aeroponics, aquaponics, and hydroponics based on the new definitions:
    - Prohibit aeroponics – PASSED (Yes: 8 No: 0 Abstain: 1 Absent: 0 Recuse: 0)
    - Prohibit aquaponics – PASSED (Yes: 7 No: 2 Abstain: 0 Absent: 0 Recuse: 0)
    - Prohibit hydroponics – PASSED (Yes: 6 No: 3 Abstain: 0 Absent: 0 Recuse: 0)
  - A single motion to ***allow*** container production with the proposed restrictions related to limits on liquid feeding and nitrogen fertilizer additions - PASSED (Yes: 6 No: 3 Abstain: 0 Absent: 0 Recuse: 0)
- **MINORITY VIEW:** In addition to the Crops Subcommittee motions, a "Minority View" was provided to express the views and proposals of a minority on the Crops Subcommittee who support hydroponic production under the organic standards. In this view, the minority proposes a number of redline changes to the 2010 NOSB Recommendation on Production Standards for Terrestrial Plants in Containers and Enclosures. Instead of focusing on inputs as the defining characteristics of various production systems, the minority view focuses more on the outcomes it sees as critical for alignment with organic principles. Specifically, the minority view introduces the concept that a minimum soil biology diversity be applied to all container and hydroponic systems to ensure that soil biology remain an essential element of all organic systems. Additionally, the minority view indicates that it feels that neither the Crops Subcommittee proposal nor the minority proposal should be voted on at the Fall 2017 meeting, but requests additional feedback from the public on these proposed revisions.

**Field and greenhouse container production (Discussion)**

- **BACKGROUND:** This new discussion document aims to begin the discussion to address three additional aspects of container production: use of artificial light, use of synthetic mulches, and disposal of crops, substrates, and containers at the end of the crop's production cycle.

- **SUBCOMMITTEE PROPOSAL:** The Crops Subcommittee brings forward background information for each of these three areas, and requests input from the public on the following questions:
    - Should the use of artificial light be limited to a specific number of hours per day?
    - Should the spectrum and intensity of artificial light be limited to full spectrum, which is as close to natural daylight as possible, or should other types of lighting, such as those that emit the red or ultraviolet spectrum of light or modified intensities, be allowed?
    - Should the use of synthetic mulches that remain in place for numerous years, especially in an outdoor production setting, address the issues of soil and water quality as well as natural resource maintenance and improvement elaborated in this discussion document?
    - Should composting and field spreading of crop residue and substrates from container operations and the recycling of plastic or non-compostable containers be addressed within the NOP organic certification system?
- **SUBCOMMITTEE VOTE:** Motion to accept the Discussion Document passed unanimously – Yes: 9 No: 0 Abstain: 0 Absent: 0 Recuse: 0

## LIVESTOCK SUBCOMMITTEE

**Petition to allow Sulfur (Proposal)**

- **BACKGROUND:** The petition is for sulfur to be used in livestock production as a livestock parasiticide. Sulfur (elemental) is currently allowed for use in the production of organic crops as an insecticide, for plant disease control, and as a plant or soil amendment. Sulfur is used as a pesticide (repellent for mites, fleas & ticks) for domestic livestock (chickens, turkeys, ducks, geese, game birds, pigeons, equine, cattle, swine, sheep, and goats and for use on dogs). Sulfur is dusted liberally and rubbed into feathers or hair. Sulfur us also used for treatment of listed animals/livestock living quarters to prevent mites, fleas, and ticks.
- **SUBCOMMITTEE PROPOSAL:** The subcommittee concludes that the information provided in the technical review does not indicate that sulfur is incompatible with sustainable agriculture. There appears to be no viable alternatives other than prevention itself, and the information provided does not point to adverse impacts to human health or the environment that raised concern.
- **SUBCOMMITTEE VOTE:** The subcommittee voted in favor of adding sulfur as petitioned to the § 205.603 of the National List to be used in livestock production as a livestock parasiticide. **PASSED** - Yes: 4 No: 0 Abstain: 2 Absent: 1 Recuse: 0

**Petition to allow Hypochlorous acid (Proposal)**

- **BACKGROUND:** Hypochlorous acid has been petitioned as a synthetic substance for addition to the National List at §205.603 as a topical treatment for pinkeye and wounds in livestock. Hypochlorous acid previously was petitioned for use as a sanitizer in crop production, in livestock production, and in handling. In April 2016, NOSB recommended adding hypochlorous acid to the National List for organic crop production as an algicide, disinfectant, and sanitizer, including irrigation system cleaning systems and for livestock production and processing for disinfecting and sanitizing facilities and equipment food contact surfaces. NOSB favored adding hypochlorous acid to the National List as a sanitizer because the technical review indicated that although hypochlorous acid is chlorine-based, it is used at a lower concentration and is safer for health and the environment than the other chlorine-based sanitizers already on the National List--namely chlorine dioxide, sodium hypochlorite, and calcium hypochlorite. The petition for use as a topical

treatment, however, entails different considerations than when hypochlorous acid was under review as a sanitizer. Based on the subcommittee review, livestock producers already have a number of natural (non-synthetic) materials available for treatment of pinkeye and wounds.

- **SUBCOMMITTEE PROPOSAL**: The subcommittee proposal explains that personal communications with organic dairy farmers by Livestock Subcommittee member leading the review of this material indicate that many use a commercially available formulation of the non-synthetic materials aloe, garlic, calendula, and chamomile, and find that it works well on wounds and as an eyewash for pinkeye. In light of the many non-synthetic materials available and in use by organic livestock producers for wounds and pinkeye, the Livestock Subcommittee does not think it necessary to add a chlorine-based synthetic material to the National List for the same use. The motion to add hypochlorous acid to the National List as petitioned failed.
- **SUBCOMMITTEE VOTE: FAILED -** Yes: 1 No: 5 Abstain: 0 Absent: 1 Recuse: 0

**Definition of "emergency treatment" for parasiticide use in organic livestock (Proposal)**

- **BACKGROUND:** Synthetic parasiticides are allowed for use in organic livestock production only on dairy animals not destined for organic slaughter and only under emergency situations. There has been ongoing discussions surrounding what conditions must exist for a situation to be considered "emergency" and therefore justify the use of synthetic parasiticides. In the Spring 2017 meeting, NOSB received public comment on a number of questions related to how to define "emergency treatment" and challenges that certifiers and producers face in verifying that synthetic parasiticides are only used to address an "emergency." Certifiers generally agreed that there was a need to develop consistency around what constitutes an "emergency treatment," and other commenters asked for improved transparency of how parasiticides are used in organic dairy operations.
- **SUBCOMMITTEE PROPOSAL:** The livestock subcommittee's proposal attempts to develop parameters around the emergency treatment of dairy animals. Their goal is to align the livestock standard with the stepwise approach used in the crop and handling production standard where operators must first use preventive approaches and mechanical or biological treatments before turning to synthetic substances to address pest or disease concerns. The Livestock Subcommittee proposes additional language to section 205.238(c)(4) (Livestock Health Care Practice Standard) to codify that preventive practices, monitoring, and non-synthetic substances must be used prior to use of a synthetic parasiticide.
- **SUBCOMMITTEE VOTE:** Motion to approve the proposal on clarifying "emergency" for use of synthetic parasiticides in organic livestock production **PASSED**, Yes: 6 No: 0 Abstain: 0 Absent: 1 Recuse: 0

## HANDLING SUBCOMMITTEE

**Reclassification of Potassium Acid Tartrate (Proposal)**

- **BACKGROUND:** Potassium acid tartrate (PAT) is present in grape juice and wine; it is extracted from natural sources: press cake, lees, and sediment recovered from winemaking. It is extracted with potable water and undergoes no chemical change during extraction or crystallization. Currently, this substance is listed as an allowed non-agricultural synthetic substances. During the 2015 Sunset Review of PAT, NOSB noted a number of inconsistencies in its related historical documents, confusion with specific names of similar sounding materials, and confusion regarding its classification. Information in a new Technical Review for PAT, dated January 11, 2017,

demonstrates that the substance could very well be classified as agricultural given how it is manufactured and the USDA Guidance on Classification of Materials. Potassium acid tartrate is derived from a crop (grapes) and there is no change in the chemical structure of the material when it is extracted. Using the decision tree for an agricultural vs. non-agricultural material in the Classification of Materials guidance (NOP 5033-2), potassium acid tartrate should be classified as agricultural.

- **SUBCOMMITTEE PROPOSAL:** The Handling Subcommittee proposes to change the classification of potassium acid tartrate from a synthetic substance to an agricultural non-synthetic substance and move the substance from § 205.605(b) to § 205.606 of the National List.
- **SUBCOMMITTEE VOTE:** **PASSED** - Yes: 8 No: 0 Abstain: 0 Absent: 0 Recuse: 0

**Marine/algae listings on the National List (Proposal)**

- **BACKGROUND:** During the recent Sunset Review of almost 200 National List items, NOSB and the public noted that the listings of nine marine materials include overlap in species and lack scientific clarity. A discussion document was posted for the fall 2016 meeting and commenters recommended that Latin binomials be added where possible, or by Class, and that NOP clarify the listing of "kelp" used in organic production and if marine materials should be classified as agricultural or non-agricultural. In April 2017, a proposal was posted as described below. The comment period, however, was shorter than usual and many commenters expressed they did not have time to review and substantively comment. Therefore, the proposal is being released for a second round of comments.
- **SUBCOMMITTEE PROPOSAL**: 1) *Motion to annotate the marine algae listings with specific information on Latin binomials for crops and handling; 2) Motion to recommend that NOP develop guidance to clarify the term "kelp" as used in organic production and wild harvesting.
- **SUBCOMMITTEE VOTE (April 2017) - PASSED:** The subcommittee (Crops and Handling) unanimously passed both motions (Yes: 9 No: 0 Abstain: 0 Absent: 0 Recuse: 0)

*Motion to annotate the marine algae listings as follows, shown in underline:

**§205.601 Synthetic substances allowed for use in organic crop production**
In accordance with restrictions specified in this section, the following synthetic substances may be used in organic crop production: Provided that use of such substances does not contribute to contamination of crops, soil, or water...
(j) As plant or soil amendments.
(1) Aquatic plant extracts (other than hydrolyzed) derived from brown seaweeds, class *Phaeophyceae*. –Extraction process is limited to the use of potassium hydroxide or sodium hydroxide; solvent amount use is limited to that amount necessary for extraction.

**§205.605 Non-agricultural (non-organic) substances allowed as ingredients in or on processed products labeled as "organic" or "made with organic (specified ingredients or food groups)).**
(a) *Non-synthetics allowed*:
Acids (Alginic; ...). Derived from brown seaweeds, class Phaeophyceae
Agar-agar. Derived from red seaweeds, class Rhodophyceae
Carrageenan. Derived from red seaweeds, class Rhodophyceae.
(b) *Synthetics allowed:*

Alginates. Derived from brown seaweeds, class Phaeophyceae.

**§205.606 Non-organically produced agricultural products allowed as ingredients in or on processed products labeled as "organic."**

(d) Colors derived from agricultural products-must not be produced using synthetic carriers and solvent systems or any artificial preservative.

(2) Beta-carotene extract color derived from carrots or algae (pigment CAS 1393-61-1). Derived from green algae, class Chlorophyceae.

(l) Kelp – for use only as a thickener and dietary supplement. Derived from Macrocystis pyrifera, Laminaria digitata, Laminaria saccharina and Laminaria cloustoni.

(t) Seaweed, Pacific Kombu, derived from Laminaria japonica, class Phaeophyceae

(x) Wakame Seaweed (*Undaria pinnatifida*).

## MATERIALS/GMO SUBCOMMITTEE

**2017 Research Priorities (Proposal)**

- **BACKGROUND:**
- **SUBCOMMITTEE PROPOSAL SUMMARY:**

**Overall:** The National Organic Standards Board requests that integrated research be undertaken with consideration of the whole farm system, recognizing the interplay of agroecology, the surrounding environment, and both native and farmed species of plants and animals.

**Livestock**

- Evaluation of methionine in the context of a systems approach in organic poultry production.
- Prevention and management of parasites, examining breeds, geographical differences, alternative treatments, and pasture species.
- Organic livestock breeding for animals adapted to outdoor life and living vegetation.

**Crops**

- Examination of decomposition rates, the effects of residues on soil biology, and the factors that affect the breakdown of biodegradable bio-based mulch film.
- Organic no-till practices for diverse climates, crops, and soil types.
- Alternatives to antibiotics (tetracycline and streptomycin) for fire blight control in apples and pears.
- Alternatives to copper for plant disease and algae control: development of disease-resistant varieties, and particular research on algae control in rice.
- Plant disease management through crop rotations, sanitation practices, plant spacing and disease-resistant varieties, and biopesticides.
- Mitigation measures for pesticide residues in compost, including identification of problematic feedstock.
- Management and control of spotted wing drosophila in fruits.

**Coexistence**

- Outcome of genetically engineered (GMO/GE) material in organic compost.
- Evaluation of public germplasm collections of at-risk crops for the presence of GE traits, and ways to mitigate small amounts of unwanted genetic material in breeding lines.
- Techniques for preventing adventitious presence of GE material in organic crops, and evaluation of the effectiveness of current prevention strategies.

**Food Handling and Processing**

- Comparison of alternatives to chlorine materials in processing: impact mitigation, best management practices, and potential for chlorine absorption by produce.
- Production of celery for celery powder yielding nitrates sufficient for cured meat applications, and investigation of agriculturally derived alternatives.
- Suitable alternatives to BPA (Bisphenol-A) for linings of cans used for various products.

- **SUBCOMMITTEE VOTE: PASSED -** Yes: 5 No: 0 Abstain: 0 Recuse: 0 Absent: 0 – to adopt the 2017 Research Priorities

**Excluded Methods Terminology (Proposal)**

- **BACKGROUND:** On November 18, 2016, NOSB sent a recommendation to the National Organic Program (NOP) recommending that NOP develop a guidance document to improve the definition of excluded methods as applied to genetically engineered materials used in agriculture and the prohibition in organic production and handling. This recommendation provided improved definitions and attempts to address the increased diversity in types of genetic manipulations performed on seed, livestock and other inputs used in agriculture. It is understood that genetic engineering is a rapidly expanding field in science at this time, and that NOSB and NOP will need to continually review new technologies to determine if they would or would not be acceptable in organic agriculture. In addition to the recommendation passed by NOSB in November 2016 providing a new framework of definitions for determining a genetic manipulation as an excluded method, there also was a discussion document that listed numerous technologies that needed further review to determine if they were within the definition of prohibited or excluded methods. This proposal for the October 2017 meeting addresses three of the "to be completed" methods listed in the discussion document voted upon in November 2016.
- **SUBCOMMITTEE PROPOSAL:** The subcommittee is proposing that the following three terms--Cisgenesis, Intragenesis and Agro-infiltration--be considered "excluded methods" because they meet the NOSB's adopted criteria 1, 3 and 4 for reviewing biotechnology processes:
  - Criteria 1) The genome is respected as an indivisible entity and technical/physical insertion, deletions, or rearrangements in the genome is refrained from (e.g. through transmission of isolated DNA, RNA, or proteins). *In vitro* nucleic acid techniques are considered to be an invasion into the plant genome.
  - Criteria 3) Novel proteins and other molecules produced from modern biotechnology must be prevented from being introduced into the agro-ecosystem and into the organic food supply.
  - Criteria 4) The exchange of genetic resources is encouraged. In order to ensure farmers have a legal avenue to save seed and plant breeders have access to germplasm for research and developing new varieties, the application of restrictive intellectual property protection (e.g., utility patents and licensing agreements that restrict such uses to living organisms, their metabolites, gene sequences or breeding processes) are refrained from.
    - ✓ Cisgenesis - Even though the genetic manipulation may be within the same species, this method of gene insertion can create characteristics that are not possible within that individual with natural processes and can have unintended consequences.
    - ✓ Intragenesis: Even though the genetic manipulation may be within the same species, this method of gene rearrangement can create characteristics that are not possible within that individual with natural processes and can have unintended consequences.
    - ✓ Agro-infiltration: *In vitro* nucleic acids are introduced to plant leaves to be infiltrated into

them. The resulting plants could not have been achieved through natural processes and are a manipulation of the genetic code within the nucleus of the organism.

- **SUBCOMMITTEE VOTE: PASSED** Yes: 5 No: 0 Absent: 0 Abstain: 0 Recuse: 0 - to accept the three new terms identified as "excluded methods." The subcommittee also voted to accept eight additional terms that will continue to be researched.

**Non-GMO organic seed integrity (Discussion)**

- **BACKGROUND:** In 2012, 2013 and 2016, the Materials/GMO Subcommittee issued discussion documents on the topic of "seed purity" (i.e., keeping seed stock used for organic production free from contamination by GMOs). In 2014, the subcommittee issued a report summarizing the public comments received in response to the 2013 and 2014 discussion documents and the subcommittee's analysis of the situation.
- **SUBCOMMITTEE REQUEST FOR FEEDBACK:** At its meeting on August 22, 2017, the Subcommittee agreed to develop a seed purity proposal for review at the spring 2018 NOSB meeting. In order to develop this proposal, the Subcommittee has decided to draw upon previously submitted comments and suggestions to the documents mentioned above, as well as any additional comments it receives in response to this discussion document. Therefore, the Materials/GMO Subcommittee is requesting further (new) stakeholder input on the topic of seed purity and the following documents
  - **April 2016** Discussion Document: Next Steps for Improving Seed Purity (pdf)
  - **April 2014** Report: Seed Purity from GMOs (pdf)
  - **April 2013** Discussion document: GMOs and Seed Purity (pdf)
  - **October 2012** Discussion document: GMOs and seed purity (pdf)

## 2019 SUNSET MATERIALS (Reviewed in 2017)

*2019 Sunset Materials*: NOSB will be discussing and voting on several generic materials currently included on the National List to determine whether the substances should continue to be listed or should be removed from the National List. The list below includes the subcommittee votes that were released for public comment; the full Board will be voting at the in-person meeting in Jacksonville, FL.

***Note:*** All votes are to REMOVE "no" = renewal. Materials of concern are noted in **RED**

- **For crop production - subcommittee votes were to RENEW all of the listed substances except Vitamin B1**

| MATERIAL | VOTE |
|---|---|
| Chlorine material | Yes: 0 No: 7 Abstain: 0 Absent: 2 Recuse: 0 |
| Soap-based herbicides | Yes: 0 No: 5 Abstain: 2 Absent: 2 Recuse: 0 |
| Biodegradable bio-based mulch film | Yes: 0 No: 8 Abstain: 0 Absent: 1 Recuse: 0 |
| Boric acid | Yes: 0 No: 8 Abstain: 0 Absent: 1 Recuse: 0 |
| Sticky traps/barriers | Yes: 0 No: 7 Abstain: 0 Absent: 2 Recuse: 0 |
| Copper sulfate | Yes: 0 No: 7 Abstain: 0 Absent: 2 Recuse: 0 |
| Fixed coppers | Yes: 0 No: 7 Abstain: 0 Absent: 2 Recuse: 0 |
| Humic acids | Yes: 0 No: 9 Abstain: 0 Absent: 0 Recuse: 0 |
| Micronutrients: soluble boron products | Yes: 0 No: 8 Abstain: 0 Absent: 1 Recuse: 0 |
| Micronutrients: Sulfates, carbonates, oxides, or silicates of zinc, copper, iron, manganese, molybdenum, selenium, and cobalt | Yes: 0 No: 6 Abstain: 0 Absent: 3 Recuse: 0 |

- **Vitamins B1** Yes: 6 No: 0 Abstain: 0 Absent: 3 Recuse: 0
  Reason: incompatible with a system of sustainable agriculture due to its unproven efficacy or need and a lack of essentiality
- Vitamin C and E Yes: 0 No: 6 Abstain: 0 Absent: 3 Recuse: 0
- Lead salts (prohibited) Yes: 0 No: 7 Abstain: 0 Absent: 2 Recuse: 0
- Tobacco dust (prohibited) Yes: 0 No: 8 Abstain: 0 Absent: 1 Recuse: 0

- **For livestock production - subcommittee votes were to RENEW all of the listed substances, however there was a split vote for Procaine**

| MATERIAL | VOTE |
|---|---|
| Chlorine materials | Yes: 0 No: 5 Abstain: 0 Absent: 2 Recuse: 0 |
| Chlorhexidine | Yes: 0 No: 7 Abstain: 0 Absent: 0 Recuse: 0 |
| Glucose | Yes: 0 No: 7 Abstain: 0 Absent: 0 Recuse: 0 |
| Oxytocin | Yes: 0 No: 7 Abstain: 0 Absent: 0 Recuse: 0 |
| Tolazoline | Yes: 0 No: 5 Abstain: 0 Absent: 2 Recuse: 0 |
| Copper sulfate | Yes: 0 No: 7 Abstain: 0 Absent: 0 Recuse: 0 |
| Lidocaine | Yes: 0 No: 5 Abstain: 0 Absent: 2 Recuse: 0 |
| **Procaine** | Yes: 3 No: 2 Abstain: 0 Absent: 2 Recuse: 0 |

- **For processing and handling - subcommittee votes were to RENEW all of the listed substances except for Konjac Flour**

| MATERIAL | VOTE |
|---|---|
| Attapulgite | Yes: 0 No: 7 Abstain: 0 Absent: 1 Recuse: 0 |
| Bentonite | Yes: 0 No: 7 Abstain: 0 Absent: 1 Recuse: 0 |
| Diatomaceous earth | Yes: 0 No: 7 Abstain: 0 Absent: 1 Recuse: 0 |
| Nitrogen | Yes: 0 No: 6 Abstain: 0 Absent: 2 Recuse: 0 |
| Sodium carbonate | Yes: 0 No: 7 Abstain: 0 Absent: 1 Recuse: 0 |
| Acidified sodium chlorite | Yes: 0 No: 6 Abstain: 0 Absent: 2 Recuse: 0 |
| Carbon dioxide | Yes: 0 No: 6 Abstain: 0 Absent: 2 Recuse: 0 |
| Chlorine materials | Yes: 0 No: 6 Abstain: 0 Absent: 2 Recuse: 0 |
| Magnesium chloride | Yes: 0 No: 6 Abstain: 0 Absent: 2 Recuse: 0 |
| Potassium acid tartrate | Yes: 0 No: 6 Abstain: 0 Absent: 2 Recuse: 0 |
| Sodium phosphates | Yes: 0 No: 8 Abstain: 0 Absent: 0 Recuse: 0 |
| Casings | Yes: 0 No: 8 Abstain: 0 Absent: 0 Recuse: 0 |
| **Konjac flour** | Yes: 8 No: 0 Abstain: 0 Absent: 0 Recuse: 0 |
| Pectin | Yes: 0 No: 7 Abstain: 0 Absent: 1 Recuse: 0 |

**IMPORTANT!** It's critical that NOSB hear from certified farmers and handlers **prior to the fall 2017 NOSB public comment deadline (October 11)** on whether these inputs are essential and/or necessary for organic production, or whether there are other effective natural or organic alternatives available.

To help facilitate a robust comment process, OTA has created a survey system for collecting feedback from certified farms and processors. These electronic surveys can be used to submit feedback on each individual input currently under NOSB review. Each survey is CONFIDENTIAL, and contains about 10 short questions that will take an estimated five minutes to complete.

## Mission and Structure of NOSB

The National Organic Standards Board was created through the Organic Foods Production Act, a sub-section of the 1990 Farm Bill. The Board is charged with the task of assisting the Secretary of Agriculture on which substances should be allowed or prohibited in organic farming and processing. This 15-person citizen advisory board brings together volunteers from around the United States. It is made up of four farmers/growers, two handlers/processors, one retailer, one scientist, three consumer/public interest advocates, three environmentalists, and one USDA accredited certifying agent.

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