

National Organic Standards Board
Materials Subcommittee Discussion Document
Genetic Integrity Transparency of Seed Grown on Organic Land
February 12, 2019

I INTRODUCTION

The USDA National Organic Program (NOP) regulations do not allow the use of materials developed using “excluded methods” in certified organic production. The USDA defines “excluded methods” as organisms, including seed, bacteria, insects, animals, and vaccines, that have been produced through genetic engineering (GE). According to the most [recent](#) National Agricultural Statistics Survey (NASS), at least 94% of soybeans, 92% of corn, 94% of cotton, 75% of Hawaiian papaya, 98% of sugar beets, and 90% of canola are genetically engineered. This discussion document and any future proposal will address field corn seed planted on organic land.

II BACKGROUND

The National Organic Standards Board (NOSB), in separate recommendations in [2016](#), [2017](#) and [2018](#), defined terms used when describing gene altering technologies and the subset of those methods deemed to be excluded methods. The list of those excluded methods are as follows:

- Sequence-specific nucleases (SSNs)
- Meganucleases Zinc finger nuclease (ZFN)
- Mutagenesis via Oligonucleotides
- CRISPR-Cas system (Clustered regularly interspaced short palindromic repeats) and associated protein genes
- TALENs (Transcription activator-like effector nucleases)
- Oligonucleotide directed mutagenesis (ODM) Rapid Trait Development System
- RNA-dependent DNA methylation (RdDM)
- Silencing via RNAi pathway RNAi pesticides
- Reverse breeding
- Genome elimination
- FasTrack
- Fast flowering
- Creating new DNA sequences
- Synthetic chromosomes
- Engineered biological functions and systems
- Somatic nuclear transfer
- Plastid transformation
- Cisgenesis
- Intragenesis
- Agro-infiltration

Currently in the U.S., testing is not required to verify if seeds planted on organically certified farms were produced using an excluded method. Organic farmers plant both organic and non-organic seed (when the organic seed is not commercially available in the form, variety, or quantity required). Some, but not all, certification agencies perform GE testing on a farmer client’s harvested crop; what is proposed here is an

additional step-- testing the seed the farmer plants in order to reduce the likelihood of a contaminated harvested crop.

To meet the current certification standard, farmers are required to provide documentation that the seed they plant was not produced using excluded methods. This standard is met in one of two ways. Certified organic seed breeding companies must verify excluded methods were not used in the production of certified organic seed. For non-organic seed, a non-GE affidavit is required if the crop has a genetically engineered equivalent in the marketplace. Affidavits typically state "to the best of the seed supplier's knowledge, the seed was not produced using excluded methods"; however, the affidavit does not address the issue of contamination of the seed lot with seed having been produced using excluded methods. The *intentional* use of seed produced by an excluded method is prohibited. Non-GE affidavits have been accepted as proof by organic certifiers that the seed is acceptable in organic systems.

A future proposal will address the "front end" of the food system, that is, the seed farmers plant. We argue that if farmers don't know what they are starting with, it puts them in a compromised position when they sell their crop; after all, they are committed to producing GE-free grains, fruits, and vegetables. The organic marketplace or the "back end" of the food system on the other hand, has developed a fairly robust testing protocol for organic foods intended for human consumption as well as livestock feeds. Depending on the market being served, various tolerance levels of genetic contamination must be met in order to sell into that market. Knowing the purity of the seed farmers plant on the "front end" is critically important for several reasons. The level of contamination at the beginning of the season will not decline and can only worsen by cross-pollination and post-harvest seed handling. To meet organic market demand and to provide farmers with what they need to make informed decisions when choosing seeds, transparency of GE contamination levels has become a necessity.

The NOSB put forth discussion and proposal documents addressing the issue of clarity around genetic purity of the seed supply in 2013, 2014, 2015, 2016, 2017, and 2018. The strong response from the public in the form of many comments clearly demonstrates the importance of this issue for organic farmers, processors, and consumers.

III RELEVANT AREAS OF THE STATUTE, RULE and RELATED DOCUMENTS

Detection and Testing Requirements: Under the NOP residue testing requirements, products from certified organic operations may require testing when there is reason to believe that certified products have come into contact with prohibited substances or have been produced using excluded methods. This requirement is specified in Subpart G (Administrative) of the regulations:

§205.670 Inspection and testing of agricultural product to be sold or labeled as "100 percent organic," "organic," or "made with organic (specified ingredients or food group(s))."

(b) The Administrator, applicable State organic program's governing State official, or the certifying agent may require pre-harvest or post-harvest testing of any agricultural input used or agricultural product to be sold, labeled, or represented as "100 percent organic," "organic," or "made with organic (specified ingredients or food group(s))" when there is reason to believe that the agricultural input or product has come into contact with a prohibited substance or has been produced using excluded methods. Such tests must be conducted by the applicable State organic program's governing State official or the certifying agent at the official's or certifying agent's own expense.

NOP Policy: The NOP issued a Policy Memo on April 15, 2011 (Policy Memo 11-13) on genetically engineered organisms. That memo clearly states that the use of genetically engineered organisms is prohibited and goes on to address questions that have been raised concerning the use of these organisms and how to minimize their presence in organic production and handling. The memo emphasizes that organic certification is a process-based standard, explaining the presence of detectable GMO residue alone does not necessarily constitute a violation of the regulation.

IV RESPONSE TO PUBLIC COMMENT

The organic seed industry, various NGOs, and certifiers felt more information should be gathered on the effect a proposal that provides transparency of the genetic integrity of seed planted on organic land would have on the availability of seed traits, the increase in cost of seed, and the paperwork burden to provide and collect the information needed. To allow the private sector to gather this information, the Materials Subcommittee has decided to not bring forward a proposal but to instead gather more information from stakeholders through this discussion document. We plan to bring a proposal forward for public discussion and an NOSB vote at the fall 2019 in-person NOSB meeting.

Public comment over the years, from most seed suppliers and producers, did not favor tolerance levels due to concerns that this approach would narrow the availability of needed crop traits and the overall crop choice. Concern was also raised that strict tolerance levels could result in the unintended consequence of causing damage to the growth and integrity of organic agriculture as well as negatively impacting organic growers and seed breeders. A future proposal will not include tolerance levels that could prohibit the planting of seed that exceeds any specific tolerance.

In the Fall of 2018 public commenters requested that the NOSB review the various licenses, utility patents, contracts, or other legal instruments that could limit producers from testing hybrid corn seeds for the presence of GE. In discussion with numerous seed suppliers, testing laboratories, and others involved in oversight of GE, it became clear that there are no current restrictions that would prevent a farmer from taking a sample of hybrid corn seed (a non-GMO variety) and having it tested for the presence of GE. There are agreements that seed breeders might encounter when purchasing the foundation seed for building their own hybrid varieties that could restrict them from testing that seed for the presence of GE. However, this proposal only requires testing of the seed that would be planted by an organic producer who has no legal impediments to this testing.

Another concern was that GE testing might restrict the availability of germplasm or seed traits needed by organic farmers. The Materials Subcommittee views this is a significant concern and looks forward to hearing back from the organic community about its validity. The nationwide availability of field corn seed that meets private agency non-GMO requirements widens the pool of seed available to organic farmers that seek low to no levels of GMO contamination beyond available organic varieties that may not have the traits they seek.

In addition, comments were made that it would be an unnecessary burden to require farmers to retain seed samples of corn seed they plant on organic land, and therefore a subsequent proposal will recommend, but would not mandate, the saving of samples by farmers.

The type of testing will be narrowed to all commercially available GE traits that can be found by testing and not all GE traits developed for field corn. The various responsibilities of organic seed suppliers, nonorganic seed suppliers, organic farmers, and organic certification agencies will be clearly identified by

entity and activity in a future proposal.

A future proposal will include the gathering of information for a database. This information would include whether or not the seed was organic, the level of purity of that seed, and the state/province and country where it was grown. The seed supplier, variety number/name, and farmer who planted it would remain anonymous and only be known to the farmer and certifier. The Materials Subcommittee is in discussion with the NOP to determine if the NOP can contract out this work to an outside entity or if they prefer to collect and summarize this information within the USDA.

V DISCUSSION QUESTIONS

1. Would the testing and knowledge of GE contamination of seed grown on organic land lead to less available corn seed varieties that contain traits or regional adaptability sought by organic farmers?
 - a. Please describe if there is a risk that nonorganic seed suppliers would not sell seed to organic farmers if the seed supplier is aware the seed could be tested for GE contamination.
 - b. Please describe if there is a risk that an organic farmer would choose to leave organic production or have a significant loss due to their choice to not plant corn seed if they were knowledgeable of the level of purity from GE contamination. Note, the level of purity from GE contamination is not proposed to affect the certified organic status of the seed or crop.
 - c. If there are any other negative consequences that might come from the testing and knowledge of GE contamination presence in seed planted on organic land, please be specific on what these might be.
2. Can organic seed growers and their certifiers provide information on how many entities are testing seed for the presence of GE contamination? If they are not testing, what are the reasons?
3. Can nonorganic seed growers and/or farmers and their certifiers provide information on how many entities are testing seed for the presence of GE contamination? If they are not testing, what are the reasons?
4. Should there be a sentence added to a proposal addressing a possible future legal impediment to testing seed for GE traits? Would requiring documentation from the seed seller to the certifier stating that it is illegal for the farmer to test that seed corn, hence exempting that farmer from testing the seed, be a solution?
5. Can you provide feedback on how to gather the “level of purity from GE contamination” information from the certification agencies, and which entity should receive and summarize that information for the public?

VI Subcommittee vote

Motion to accept the “Genetic Integrity Transparency of Seed Grown on Organic Land” discussion document

Motion by: Harriet Behar

Seconded by: Lisa De Lima

Yes: 5 No: 0 Abstain: 0 Absent: 0 Recuse: 0

Approved by Emily Oakley, Subcommittee Chair to transmit to NOSB, February 14, 2019