# National Organic Standards Board
# GMO ad hoc Subcommittee
# Discussion Document
# GMOs and Seed Purity

**February 6, 2013**

## Introduction

The GMO ad hoc Subcommittee is extending the public comment period on the GMOs and Seed Purity Discussion Document by reissuing this document and is especially interested in hearing suggestions from those in the organic community who did not previously submit comments. The Subcommittee would particularly like to hear from organic and identity-preserved seed and crop producers to learn about the challenges in preserving seed purity and enforcing protections from contamination.

Organic stakeholders are concerned about keeping genetically modified organisms (GMOs) (i.e., the products of transgenic plant or animal breeding) out of organic livestock feed, crops, and food. The use of “excluded methods,” including transgenic modification, are prohibited in the production and handling of organic goods. This prohibition applies to seeds used on organic farms. The organic community continues to be proactive in developing positions, procedures, and practices to encourage prevention of GMO contamination. An important part of this is ensuring genetic purity of seed used on organic farms. Pure seed is a cornerstone of true sustainability in an organic farming system.

Policy Memo 11-13 from the National Organic Program (NOP) affirms that organic certification is process-based. The public comments to National Organic Standards Board (NOSB) and NOP continue to indicate a strong concern by both producers and consumers of organic foods for stronger steps to limit the potential and/or unintended presence of GMOs.

In 2012, the NOSB established the GMO ad hoc Subcommittee. In this discussion document, the subcommittee seeks input from organic stakeholders on the possibility of strengthening seed purity as one step to avoid the potential contamination of crops with GMOs. Seed may be the most impactful and efficient point in the supply chain at which GMO contamination of organic feed, crops, and food could be limited and controlled. This suggestion implies that recommending standards for the genetic content of seeds used in organic production would be an appropriate point of focus for NOSB.

## Background

• The NOP Organic Rule refers to Genetic Engineering (GE) as an "excluded method". “Organic” is a label that indicates that a process has been followed to exclude GMOs.

• Producing organic feed, crops, and food 'free' of GMOs requires starting with seed that is not contaminated by GMOs.
• Public and marketplace expectations for the absence of GMOs in organic goods call for implementing best practices on conventional and organic farms to minimize the potential for such contamination.

• We suggest that the process for ensuring genetic purity of commercial seeds in organic production must be stricter than conventional crop production. Clean seed must be planted for the farmer to harvest uncontaminated food or feed. Planting and harvesting contaminated seed can increase the likelihood of "creeping contamination" from year to year, since any additional GE drift into a field planted with partially contaminated seed would produce food, crops, or feed with a higher level of contamination than in the original seed.

• Genetic purity in seed cannot be addressed by field observations of various visual off-types as has been practiced by the seed industry in the past. Genetic purity must also now encompass the presence or absence of GE contamination, with the protocols for making such a determination structured to meet the concerns and demands in the marketplace.

**Relevant Areas of the Rule**

**NOP standards**[1] adopted by USDA in a final rule published in December 2000 and fully implemented in October 2002 prohibited the use of GMOs in the production and handling of organic products certified to national organic standards.

The terminology used for GMOs in the NOP Regulation is "excluded methods" and is specified under section 205.2 (Terms Defined) as:

**Excluded methods**. A variety of methods used to genetically modify organisms or influence their growth and development by means that are not possible under natural conditions or processes and are not considered compatible with organic production. Such methods include cell fusion, microencapsulation and macroencapsulation, and recombinant DNA technology (including gene deletion, gene doubling, introducing a foreign gene, and changing the positions of genes when achieved by recombinant DNA technology). Excluded methods do not include the use of traditional breeding, conjugation, fermentation, hybridization, *in vitro* fertilization, or tissue culture.

**Detection and Testing Requirements:** Under the residue testing requirements of NOP, 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:

[1] Title 7 CFR Part 205 - National Organic Program

**§ 205.670 Inspection and testing of agricultural product to be sold or labeled "organic."**

(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 finalized a Policy Memo on July 22, 2011 (Policy Memo 11-13) on GMOs. This policy memo reiterates that the use of GMOs is prohibited under NOP regulations, and answers questions that have been raised concerning GMOs, organic production, and handling. The clarification provided is consistent with the explanations provided in the preamble, thus emphasizing that organic certification is a process-based standard and the presence of detectable GMO residue alone does not necessarily constitute a violation of the regulation.

**Commercial Availability of Organic Seed:** The NOP regulations at 7 CFR § 205.204 require that organic producers use organic seeds, annual seedlings, and planting stock. The regulations allow producers to utilize non-organic seeds and annual or perennial planting stock when organic varieties are not commercially available.

The term "commercial availability" is defined under section 205.2 (Terms Defined) as: *The ability to obtain a production input in an appropriate form, quality, or quantity to fulfill an essential function in a system of organic production or handling, as determined by the certifying agent in the course of reviewing the organic plan.*

**Discussion**

**1.** Currently the organic standards require that seed used in organic production not be produced using excluded methods; and the marketplace is increasingly sensitive to contamination of organic crops by GMOs yet no standard or system exists to determine that the foundation of the value chain – seed – is free of GMOs.

**2.** The private sector has a variety of requirements and standards related to quantification of genetic materials (GM) content yet most of that data is not accessible to an accredited certifying agent and, therefore, is not currently helpful in terms of oversight and compliance. If it were available, there is no protocol within the organic sector for evaluating and using the testing results.

**3.** Farmers growing seed are increasingly being required to test for GMOs by their buyers in an ad hoc manner. Buyers may have different test protocols and evaluation of results which makes it difficult to compare and use the information.

**4.** Securing a supply of GMO free seed is critical to the long-term ability of organic to meet consumers' expectation of organic vis a vis GMOs.

**5.** Current NOP policy does not require verification that seed is free of GMOs. However, if someone desires to have as thorough a process as possible to exclude GMOs, they may want to address their seed purity to the extent possible.

**6.** Despite the distinction between "excluded methods are not used" and "no traces of GMOs are present," the expectations of some consumers confuse these claims (and some marketers encourage this confusion).

**7.** The NOSB may consider in the future a universal genetic purity standard for seed to be used in organic production systems. An example of the standard would be the presence or absence of GE content, and the standard is equally applicable to conventional and organic seed. For example, no GE seeds found in a 3,000 seed sample. "None found" in a 3,000 seed sample corresponds statistically to a 95% probability that the actual GE contamination level in the seed lot is between zero percent and 0.10%. The use of terms like "non-detect" or" none found in the sample" is consistent with this goal, and less confusing than the statistical expression summarizing what "none found" in a sample means relative to the level of certainty that the whole lot is not contaminated.

**8.** The need to use organically grown seed is affected by the need for commercially available GMO-tested seed to satisfy buyers. Farmers are challenged to balance prevention of GMO contamination with adherence to the guidance on organic seed.

**Discussion Questions**

The GMO ad-hoc subcommittee is seeking response from the organic community to several questions regarding seed purity as follow:

1. Is there a need to establish a seed purity standard or protocol to ensure that planting seed meets the requirements of the NOP rule? Explain your answer.

2. What is currently known about the level of GMO contamination of seed used by organic farmers and any associated testing of seed on the farm or in the supply chain? Comments from farmers, seed companies, or buyers describing the following would be relevant:

- the scope of testing (e.g. frequency, methods, costs);
- the threshold used for rejection; and
- the outcome of seeds that are rejected.

3. What testing methods are appropriate to use in order to determine and label for seed purity and to verify compliance to a seed purity standard?

4. How would an example, such as proposed in Discussion point #7 above, affect your farm or business?

5. Is there a better suggestion for a seed purity standard than that proposed in Discussion point #7 above? Describe.

6. What is known about relevant sampling, testing, and detection level protocol necessary to implement such a standard?

7. What training, guidance, or resources do certifiers need to verify compliance to a seed purity standard?

8. What approach could an organic seed producer use to safeguard against GMO contamination from an adjacent or neighboring conventional farm? Buffer zones, distance, planting time, pollination factors, and contamination possibilities/solutions could be included in your response.

**Subcommittee Vote:**

**Motion to adopt the proposed Discussion Document on GMOs and Seed Purity.**

Moved: Colehour Bondera  Second: Jennifer Taylor

Yes: 7  No: 0  Abstain: 0  Absent: 0  Recuse: 0