

**National Organic Standards Board  
Materials/GMO Subcommittee  
Discussion Document on Next Steps for Improving Seed Purity  
February 23, 2016**

**Introduction**

For several years now the National Organic Standards Board (NOSB) has been collecting public input on the issue of Seed Purity from GMOs. After two discussion documents, a report<sup>1</sup>, a collection of Prevention strategies to keep GMOs out, and an expert panel on seed purity, we are still not to the point of making a comprehensive proposal.

The obstacles are immense, and have been thoroughly vetted in our past posted documents. Suffice to say the obstacles are not shrinking with the passage of time, but the need for action is growing. This paper is a springboard to what are the next activities/recommendations/policies that could be undertaken to move forward on this issue. Some of these ideas are brought forward here, while any other new approaches are also welcome.

**Background**

At the spring 2015 NOSB meeting the expert panel on Seed Purity addressed many of the challenges around adopting any testing protocol or threshold. The NOSB had proposed instituting a seed purity testing requirement for only non-organic seed of at risk crops as part of the overall prevention strategies. As a result of the Expert Panel Discussion, this section was withdrawn from the final proposal on prevention strategies because it was felt more work was needed. That language is provided as an Appendix to this paper.

There are a number of good reasons to require a seed purity declaration for non-organic seed, including:

- Provides incentive for growers to use organic seed.
- Shifts the burden of routine GMO testing from organic seed producers to suppliers of non-organic seed.
- Reduces the inadvertent introduction of GMOs into organic crops through seed.
- Fits in with the organic regulations to prohibit excluded methods by providing ACAs with a tangible method of verification.

We are mindful of this quote from Matthew Dillon, from Clif Bar & Company, in his testimony to the NOSB during the expert panel, "We often say that seed work is slow work. It takes seven, ten, twelve years to breed a new variety and get it into the commercial marketplace. Sometimes longer. Seed work is slow work and we have to be deliberate in our approach to seed, whether it's in breeding and production or in our decisions regarding regulations."<sup>2</sup>

<sup>1</sup> Report on Seed Purity from GMOs

<https://www.ams.usda.gov/sites/default/files/media/materialstx.pdf>

<sup>2</sup> NOSB meeting transcript, Spring 2015, La Jolla, CA

<https://www.ams.usda.gov/sites/default/files/media/transcript.pdf>

## **Themes from Public Comment**

Several clear themes have emerged from both the public comment received from the past several years of discussions and the expert panel from the spring 2015 NOSB meeting. These are summarized below and should be used as a framework to be mindful of as we design the next steps.

### **1. We need more data.**

- Everyone agrees that contamination is occurring, but very little is known about how much comes from seed as opposed to pollen drift or co-mingling in harvest and cleaning. Without knowing a background level (or adventitious presence) in seed before planting, it is impossible to determine further sources that contribute to contamination.
- Although baby steps are being taken to enable more data to be collected, it is not enough or soon enough to tackle the problem of contamination. Most of the data now collected is proprietary to seed companies or grain buyers who do their own testing.
- It all starts with seeds and so this is a good place to start in data collecting activities.
- Seed companies could generate and provide some of their data if it was collected in a systematic way and if the organic seed guidance was strengthened.

### **2. The responsibility for genetic contamination should lie with the polluters.**

- The organic movement worldwide believes that organic producers should not be penalized for the trespasses of others and genetic contamination is trespass.
- Organic seed producers are already overcoming great hurdles to produce seed, from limited genetic resources to all the extra prevention strategies they must use. Burdening them with extra costs of testing is penalizing them such that their viability is at stake.
- A realistic balance must be sought between the need to keep genetically engineered content out of organic production and the practicality of keeping an organic seed industry alive and viable.
- The NOSB is limited in scope to what can be achieved through the organic regulations. Making polluters accept responsibility is outside of that scope. Only by being proactive in keeping these issues in the public eye and communicating them to the Secretary, can the NOSB make a difference.
- A recommendation with this statement in it will not be able to be published by the NOP. In order to keep this message in circulation, the concept needs to be expressed as part of other more achievable language.

### **3. All crop species are not the same**

- There may need to be separate requirements for the different at-risk crops, because the pollination, geographic, and economic differences result in large differences in how fast progress can be made away from GMO contamination.
- Soybeans, being largely self-pollinating, are already able to meet a fairly stringent threshold requirement.
- Cotton has only one or two commercial seed companies providing non-GE seed in the USA and one is threatened. There is only one public cotton breeder in the US. While many growers save their own seed, the cotton seed supply worldwide is under serious threat from GMOs but without access to clean varieties, this will not be able to change.

- Canola production for organic has almost entirely left the U.S. because of GMO contamination.
- Corn has very limited availability of inbred parent lines that are not contaminated and the seed companies providing them often prohibit GMO testing in them. Therefore the genetic diversity available to organic seed companies is much lower and this crop is particularly at risk from lack of genetic diversity. Also the special skill set needed to produce organic hybrid corn is now resting with only about 20 growers in the US. Corn pollen can travel several kilometers and so contamination is extremely likely no matter what steps are taken to prevent it.
- One suggestion floated several times has been to exempt breeding lines grown in organic systems from the treated seed prohibition in the rule. Many of the breeding lines are only available with seed treatments. Since these lines are not used to produce a crop, but only to produce the seed that then needs to be increased for sale, there might be a variance for the seed treatments that would give breeders access to a much larger assortment of germplasm.

#### **4. Let the marketplace guide the way**

- The best way to gain more credibility in the USDA and conventional agricultural industry is to gain enough market share that they have to pay attention.
- Labelling of GMOs will eventually cause enough awareness in the marketplace for the tide to turn. Continued efforts are needed to make labelling a reality, but this is not the role of the NOSB.
- The marketplace is doing a lot of testing now, but are not required or inspired to share their results in any way to provide anonymous collective information to regulators or researchers. If a structure could be set up to have a central data collection system in which individual results could remain anonymous and no penalty assessed for contamination while the data was collected, the whole organic community would benefit.
- Whatever policy is adopted as to be workable for producers of all sizes and not solely favor the larger scale enterprises.

#### **5. Thresholds and testing are a tool to be used responsibly**

- The best use of testing is in specified situations, such as when negligence is suspected or to assess if established safeguards are sufficient.
- Many organic producers are suffering severe economic consequences already if all their hard work to prevent GMOs still results in contamination that lowers the value of their crop or is not accepted by their buyers.
- Without addressing many of the specific issues above, and also the appropriate repercussions when a test is failed or a threshold not met, the organic community is not ready for a one-size-fits-all threshold requirement.
- That being said, aiming to move towards establishing crop specific thresholds and standardized testing protocols is worthwhile and has a role in maintaining organic integrity.

## Discussion

The following are some solution-oriented suggestions that have arisen from public comment and from discussions within the organic community. These are broad ideas at this point and we have not attempted to fully flesh out the logistics of how any of these would work. They are not mutually exclusive for the most part. We are suggesting them as a way to get reaction from stakeholders on what the NOSB should work on next in this arena and what should inform that work. We are also open to any brand new ideas that aim to bring the organic industry towards consensus on improving seed purity of seed used in organic systems.

### A. Enabling Data Collection

"A first step of action to protect organic seeds and crops from GMO contamination could be to require the evaluation of the non-GMO status of **nonorganic** seeds intended for use in organic production." This sentence is quoted from our previous work on this subject (in the Appendix).

We could start by recommending through guidance (but not an absolute requirement subject to violations and penalties) for ACAs to collect a seed purity declaration from non-organic seed of high risk crops being planted on organic farms (preferably on the seed tag of each bag of seed with a lot number). If there is no seed tag, an inspector could collect a sample that could be sent to the ACA for an inexpensive GMO strip test. There would be no threshold, the test results would not be made public except as compiled anonymous data, nor would the ACA take any action concerning any level stated in the test. At first this program would only be for growers large enough to plant a whole sack or more of at-risk seed.

Waiting for the government to collect data, using non-objective data from the trade, or expecting the polluters to suddenly pay for this is clearly not happening soon. The tests could be paid for by seed companies who value organic customers, by growers themselves, by their contracted buyers, or by ACAs who have some funds allocated for testing. This would share these expenses across the supply chain without undue burden for penalties looming. Those who absolutely could not afford it would not be forced to do the testing in the first two years.

This would be a big start to the data we are looking for to make future recommendations, as long as there was an identified home for the data to go until it is used. ACAs could turn in their collected data once or twice per year to a central location. The need for assembling this data is so great that perhaps the NOP could provide a grant to an NGO or other third party entity to compile the data. Possible homes might include AOSCA (American Organization of Seed Control Officials,) or the U.S. Testing Network, or other entities who might be willing or designated by the NOP. Crops grown from those reported seeds could also be tested in the marketplace and then matched (by ID number) in the data collection system. This would enable buyers who test to turn in some of their data anonymously also so that it could be correlated with seed.

If this much could be achieved for 2 to 3 years successfully then it could possibly branch into testing organically grown seed as well. It might also provide guidance into where contamination comes from, how it spreads and magnifies, and what a realistic and appropriate threshold might be. Other areas of expansion of these testing efforts could include buffer zones and various distances from a contamination source. This knowledge could lead to more fine-tuned

guidance on isolation distances and amount of buffers needed, and also what separation might be needed in timing of plantings of corn.

Only when at least several years of data were collected would there start to be policies set regarding protecting organic integrity from contamination coming from seeds. While there certainly might be flaws in this approach, it seems the most likely to enable some data to be collected in a way that is as timely, fair, and systematic as possible.

### **B. USDA Task Force**

The NOSB could recommend that the USDA establish a Seed Purity Advisory Task Force. The task force members would be appointed by the USDA, primarily through NOP but possibly in conjunction with the AC21 FACA board.

The task force would design a feasibility study based on testing that would be administered and carried out by USDA. The study would be crop specific and would evaluate what a rigorous yet realistic threshold might look like, focusing on non-organic seed. The task force would design a 3 - 5 year action plan, after which time the testing could begin and data from it could be collected.

During this time the NOSB would request the funding mechanism be established so that the USDA pay for all the GMO testing. The testing would not start until the funding and logistical details were in place.

### **C. Strengthening the Organic Seed requirement**

Members of the Expert Panel stated that the cost of maintain each inbred line used for corn breeding is \$8000 to \$10,000 for the lab work to verify purity. This clearly is a very large investment for an organic breeding program or even for organic seed increase efforts. While the State of the Seed report will show that organic seed use is increasing, the progress has not been sufficient to sustain the work needed in at-risk crops. The whole viability of any efforts to keep GMOs out of organic are predicated on increasing the supply of organic seed with reasonable purity.

One of the areas that the NOSB can continue to work on is strengthening the organic seed provisions in the regulation through the guidance process. Many stakeholders felt that the NOP seed guidance issued in March 2013 did not go far enough to address the NOSB recommendation or the public comment in response to the draft guidance. Further suggestions are needed to move towards continuous improvement in this area, or what organic seed people are calling, "closing the loophole".

Several of the ideas for the NOSB to discuss for further recommendations include:

- How to determine continuous improvement in seed sourcing. For both ACAs and producers this may mean setting a percentage goal by acreage or variety, changing the "3 seed sources" guidance into something more specific if it is not leading to improvement, or asking for more measurable progress in the context of the Organic System Plan.
- The role of variety trials and research in compliance efforts.

- Handlers who require certain seeds for their contracted growers should be subject to the organic seed requirements and procurement efforts as well as growers themselves. There also needs to be some oversight of export traders as handlers who slip through the cracks of the organic seed regulations.
- NOP should provide meaningful training to ACAs annually on how to monitor progress in complying with the need for continuing improvement in seed sourcing. Particularly equal verification/enforcement for all scales of production was a frequently mentioned concern.

#### **D. Start with a Soybean Testing Project**

Numerous public commenters at NOSB meetings and in public gatherings have stated that soybean purity is relatively easily achievable compared to other at-risk crops. The NOSB could advance just a soybean testing mandate for both organic and non-organic seed to the proposal level at the next meeting. We need to determine still what the appropriate testing protocol, sample size, and threshold is for soybeans, as well as what happens when a test is failed. Starting with just one crop could provide valuable learning that would make it easier to adopt a more tailored proposal in the future to other crops.

#### **E. Your ideas are welcome!**

#### **Discussion Questions**

1. Do you think that any of the suggestions above (A - D) are workable? What would you change to make them better?
2. Do you have a new suggestion to add under letter "E"?
3. If you think that A is workable how and where would you suggest for the testing data to be collected and compiled?
4. If you think that C should be taken up by the NOSB, are there other portions of the Seed Guidance that should be strengthened?
5. If you think that D is feasible at this time, please provide input on sample size and testing protocol for soybeans.

#### **Subcommittee Vote**

Motion to adopt the discussion document on Next Steps for Improving Seed Purity

Motion by: Zea Sonnabend

Second: Emily Oakley

Yes: 4 No: 0 Abstain: 0 Absent: 2 Recuse:0

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## Appendix

Discussion document on Prevention Strategies Seed Purity language, NOSB Spring 2015.  
(Withdrawn from the final Recommendation.)

### **Seed Purity Requirement for Non-organic Seed**

The longer we wait to set limits for controlling contamination in organic seed, feed and crops, the further we fall behind market demand, and the longer organic farmers are subject to the variability of the private market vs. the requirements of the organic regulations. A first step of action to protect organic seeds and crops from GMO contamination could be to require the evaluation of the non-GMO status of **nonorganic** seeds intended for use in organic production.

- The regulations require that non-organic seed be non-GMO. Organic producers must provide ACAs with supporting evidence that non-organic seed is non-GMO. To address this requirement, NOP could in guidance request that ACAs collect a seed purity declaration for high risk crops made (preferably on the seed tag of each bag of seed with a lot number) by the seed supplier or organic operation to verify the non-GMO status of non-organic seed.
- Since organic seed must comply with the organic standards and is subject to residue sampling by ACAs, requiring seed purity declaration for organic seed could undermine confidence in the process-based standards. For organic seed, an organic certificate is adequate. However, requiring a seed purity declaration on **non-organic seed** would obligate seed suppliers or organic operations to test non-organic seed for GMOs and to withhold seeds that were contaminated from entering the organic supply chain. A suggested threshold for planting seed is 0.1%, a figure in common use.

Requiring a seed purity declaration for non-organic seed would:

- Shift the financial burden of routine GMO testing from organic seed producers to suppliers of non-organic seed;
- Significantly reduce the inadvertent introduction of GMOs into organic crops through seed;
- Show confidence in the processed based standards that have proved successful in preventing pesticide contamination on organic products; and
- Incentivize the expansion of the organic seed industry
- However, such a requirement might reduce crop seed and variety options for organic producers if seed suppliers were unwilling to test non-organic seeds for GMOs.

