Accredited Certifiers Association, Inc.

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Best Practices for Developing Consistency in GMO Sampling

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Summary

ACAs are required to conduct residue testing from a minimum of five percent of their certified operations annually, according to §205.670. While most current testing focuses on pesticide residues, many ACAs choose to sample for GMO contamination. However, most NOP instruction related to sample testing pertains to pesticide residues and does not apply directly to GMO testing. As a result, consistency in practices among ACAs has been a challenge. This document addresses common questions ACAs ask when considering GMO sampling and addresses "best practices" for sample collection and follow-up with the operator.

Selecting a Lab

NOP 2611 Laboratory Selection Criteria for Pesticide Residue Testing states that ACAs should select a lab that is accredited to ISO/IEC 17025:2005. This is considered best practice when selecting a laboratory for GMO testing also. NOP 2611 requests ACAs obtain accreditation certificates for the labs they use, as well as results from the lab's most recent round of proficiency testing.

Genetic ID in Fairfield, IA, and Eurofins GeneScan in New Orleans, Louisiana, both hold accreditation to ISO/IEC 17025:2005 at the time of this drafting. These labs are both recommended by ACAs for their professionalism and their helpfulness in testing and interpretation of results. Best practices for lab selection call for verification of the required accreditation. Labs should also be selected based on willingness to communicate regarding interpretation of test results.

Choosing a Test

In GMO testing, selecting an appropriate test is typically more complicated than test selection for pesticide residue sampling. Some labs recommend contacting them for consultation on individual test selection.

The lab may offer qualitative or quantitative test results. Qualitative results simply indicate whether GMO presence exists. Quantitative results indicate a specific amount of contamination, which can be helpful since the amount detected can provide clues to the source of contamination. In some cases (especially if contamination is *not* suspected), the lab may recommend starting with a qualitative result and proceeding from there, in order to save on costs. If sampling grain or another crop where contamination *is* suspected, it may be most

effective to start off with the quantitative test. Consult with the lab about the best way to meet your objectives.

Tests for single species are commonly used, but it may also be possible to run a broad spectrum test, which can be useful in testing multi-ingredient products. Tests can also look for specific GMO varieties, including branded traits such as Roundup Ready Soy.

Selecting Which Products to Test

Similar to test selection, it is best to consult with the lab about what products to test. While complaint-based investigations are subject to the specific needs of the ACA, the lab should be consulted in advance to make sure they can test the product in question.

At this point in time, most GMO testing by ACAs focuses on single crops such as corn and soybeans. While multi-ingredient products can often be tested, the test might not reveal exactly which ingredient is the source of contamination in a product. This can be a challenging situation, comparable to the discovery of pesticide residue in multi-ingredient products; supply chain investigation can become burdensome or result in unresolved questions.

Processing of ingredients can result in a product that is easier to test in some cases, but more difficult in others, depending on the ingredient and method of processing. Talk with your lab about test capabilities with regard to ingredients that have undergone processing activities.

The most suitable crops to test will be dependent on your circumstances -- that is, your geographic region, crops typically grown there, and internal investigative needs. Best practices include sampling of only those crops or ingredients that are commercially available in GMO varieties. We recommend each ACA develop a "High Risk GMO Crops and Ingredients" list that is monitored and updated at least annually. Recommended resources for tracking this information include but might not be limited to: Non GMO Project, International Service for the Acquisition of Agri-Biotech Applications, and the Center for Environmental Risk Assessment.

Collecting and Handling the Sample

Sampling procedures are specific to each circumstance. Variation in crop type, harvested portions, and method of storage will require different sampling methods. It is important to communicate closely with your lab about the details of your situation to ensure that a large enough sample is collected. Certifiers should work with inspectors who have training on how to collect representative samples.

While this Best Practices document does not recommend any specific sampling method, many resources exist that may be appropriate, depending on the circumstances related to the operation being sampled. For example, techniques for quality sampling on mid- to large-scale grain operations can be found in the USDA Grain Inspectors, Packers and Stockyard Association (GIPSA) *Grain Inspection Handbook.* Likewise, Penn State Extension's *Collecting a Sample for Quality Analysis* is related to quality sampling for forages.

As described in NOP 2610 Sampling Instructions for Residue Testing, a proper chain of custody needs to be maintained in order to show chronological possession of samples from the sample collector to the lab. The sample must be packed in a way that prevents sample contamination. See NOP 2610 for further guidelines.

Sample collection paperwork should also include as many details as possible about the source of the sampled product, including lot number, field location, etc. If purchased ingredients were sampled, the source of the supplier, along with the certifier of that entity, should be documented.

Evaluating Positive Test Results

While any level of GMO detection requires investigation, there is no specific limit that requires a noncompliance to be issued. Standard background levels and other GMO thresholds (e.g., international thresholds or those used by the Non GMO Project), while they may be informative, should not be used as benchmarks for compliance. In the case of positive test results, investigation must assess how commingling or contamination occurred, as well as the nature and severity of breakdown within the Organic System Plan. Conversation with both the lab and the operator should contribute to the assessment. Based on the outcome, the certifier may proceed to noncompliance or adverse action if appropriate.

High or low detection levels alone might not determine compliance or noncompliance. Even a high level of detection might not necessarily result in a Notice of Noncompliance. For example, if an operator purchased seed that was fraudulently marketed as organic, and represented by an Organic Certificate, a Notice of Noncompliance might not be appropriate. If compliant seed sourcing and purchasing activities are documented, those actions could be interpreted to comply with the regulation.

On the other hand, if there is even a small level of GMO detection, it might result in a Notice of Noncompliance. For example, investigation of a grain handling facility may find a small portion of grain purchases were not certified organic; this would demonstrate a breakdown of the OSP and failure to comply with the regulations related to organic ingredient sourcing.

In other words, compliance is not determined solely by the level of contamination; certifiers must assess the operator's level of adherence to compliant OSP activities -- and this can only be determined by investigation. It is best practice to investigate before proceeding to noncompliance or adverse action.

Notifications about Test Results

Certifiers should notify operators of all test results, positive or negative. When notifying operations of positive test results, certifiers should refer to Policy Memo 11-13 and their responsibilities for working with organic producers to identify the source of contamination and implementing any necessary improvements.

Additional points to keep in mind:

- In the event that a noncompliance is issued, the NOP must be notified.
- In the event of a positive test result, notifications to operators should not include any "stop sale" language, as ACAs do not have the authority to exclude product from organic sales based solely on positive GMO test results.
- In cases where a sample collected from an operator consists of purchased organic product, the positive results should be communicated to the certifier of the supplier.
- It is not the role of certifiers to notify buyers or potential buyers of any positive test results for product that has been tested.

Unresolved Issues

- Deferring to NOP documentation related to pesticide residue sampling, and applying it to GMO sampling, seems to be suitable in some cases but not others. For example, general procedures for maintaining chain of custody records (NOP 2610) apply for both types of sampling. However, NOP 2613, instructions related to operator notifications and withholding from organic sale, seem largely non-applicable since there is no comparable threshold schema established by NOP.
- While NOP has clearly stated that planting contaminated seed does not constitute "use" of excluded methods (Policy Memo 11-13), some certifiers may hesitate to allow planting of large amounts of seed that is known to be contaminated and may also hesitate to apply the same principle to feeding of contaminated livestock feed without explicit NOP instruction to do so.
- There may be a need for inspector training related to representative sampling and safety during sample collection. Also, the sample collection process may be quite expensive depending upon methods used.

Resources

NOP 2610 Sampling Procedures for Residue Testing
NOP 2611 Laboratory Selection Criteria for Pesticide Residue Testing
NOP 2613 Responding to Results from Pesticide Residue Testing
NOP Policy Memo 11-13