High-Risk Inputs: Testing

Testing Basics

The **Non-GMO Project Standard** requires testing of major **testable** high-risk inputs to ensure that Verified products meet the Standard's rigorous requirements for GMO avoidance. Not all inputs will require testing; read through this guide and consult your Technical Administrator (TA) before sending any samples to an approved laboratory.

HIGH-RISK INPUTS

High-risk inputs have genetically modified versions that are widely commercially available. Testing may be required if your product contains any of these high-risk inputs or their derivatives at 5% or more by weight. Your TA will determine if testing is required.

High-Risk Inputs

- Alfalfa
- Canola
- Corn
- Cotton
- Papaya
- Soy
- Sugar beet
- Yellow summer squash / zucchini
- Potato
- Microorganisms and enzymes
- Animal products

TESTABLE VERSUS NON-TESTABLE

Some high-risk inputs are **non-testable**, meaning that no point in the production chain exists at which GMOs can be identified using current methodologies. An affidavit stating that any such non-testable high-risk input is not the product of genetic modification is required to be submitted to your TA to establish compliance with the Standard.

Some inputs have both testable and non-testable varieties. These inputs need to comply with the rules for testable inputs and the rules for non-testable inputs. This may require both GMO testing and a signed affidavit.

Read more about **Non-GMO Project affidavits**.

TYPES OF GMO TESTING

The frequency and methodology of tests will be determined by your TA.

PCR testing: Major testable high-risk inputs into human food must be tested in a laboratory using the polymerase chain reaction method (PCR). PCR is very precise and can accurately quantify GMO contamination. The PCR testing process multiplies a small piece of DNA many times over, amplifying the DNA until there is enough information for accurate testing.

Strip testing: Immunological testing methods such as lateral flow strip tests may sometimes be used in lieu of molecular testing methods to demonstrate compliance of animal feed in the field. Analysts using such tests must be trained to ensure that they use the tests reliably.

Testing FAQs

WHEN ARE INPUTS TO PRODUCTS TESTED?

The Product Verification Program (PVP) is designed to employ testing at the most meaningful point in the supply chain. The Standard allows for flexibility in where testing is conducted in the supply chain as long as there is sufficient DNA intact to yield meaningful results. Technical Administrators can help determine the most efficient point for testing. From there, traceability and segregation ensure that the tested ingredient maintains its purity.

WHY ISN'T TESTING THE FINISHED PRODUCT ALWAYS SUFFICIENT?

PCR testing works by detecting DNA sequences. Some manufacturing processes degrade DNA to the point where it can no longer be tested by PCR as the results obtained would not be reliable. In those cases, analysis must be completed on the source material used to produce the input.

For example, corn syrup does not contain DNA and therefore PCR analysis would not yield conclusive results. In order to properly assess the level of GMO contamination in the input, the corn used to make that corn syrup would be tested prior to processing instead.

ARE FINISHED PRODUCTS TESTED?

The Non-GMO Project operates a quality assurance program which includes surveillance of finished products. Some finished products are randomly tested to check for compliance with the **Non-GMO Project Standard**. Participants are not informed that their product has undergone this testing unless a problem is discovered; there is no fee associated with this testing.

WHY MUST INPUTS BE TESTED AT A NON-GMO PROJECT APPROVED LABORATORY?

All PCR testing must be conducted at Non-GMO Project approved laboratories. Laboratories on this list have met the criteria for the Non-GMO Project approved laboratory program; they perform PCR testing in accordance with ISO 17025 standards and are accredited for the specific tests needed to detect commercialized GMO events.

Please see the Non-GMO Project's website for a **current list of approved laboratories**.

ARE TECHNICAL ADMINISTRATORS AND LABORATORIES THE SAME THING?

No. Approved laboratories and TAs serve different functions in the Product Verification Program. Your TA will guide you through the evaluation and determine if your products comply with the Standard. Approved laboratories are utilized for conducting any required testing. Your TA will determine whether testing is necessary and approve a statistically valid sampling and testing plan. Once this plan is in place, you can move forward and contact one of the approved laboratories. The laboratory will conduct tests and provide results.

HOW MUCH DOES LABORATORY TESTING COST?

Testing fees are set by individual laboratories. Please **contact a laboratory** directly for a quote unique to your input.

IS TESTING REQUIRED FOR MONITORED-RISK INPUTS?

Monitored crops are evaluated as low-risk and do not require testing.

The Non-GMO Project carefully tracks the development of new genetically engineered products. Once monitored items become widely commercially available, they are moved to the High-Risk List in the Non-GMO Project Standard. Note that an input does not first have to be on the monitored list to be added to the High-Risk list. When an input is moved to the High-Risk List, participants have six months or until time of next renewal (whichever is longer) to come into compliance.

DO NON-GMO PROJECT VERIFIED INPUTS REQUIRE TESTING?

No, Non-GMO Project Verified inputs have already been evaluated and do not require further testing. Your TA will request the certificate of verification and proof of purchase for that input to demonstrate compliance.

ARE CERTIFIED ORGANIC INPUTS SUBJECT TO TESTING REQUIREMENTS?

Yes. The Non-GMO Project is designed to honor the National Organic Program's excellent guidelines for traceability and segregation and build on that work with the added measure of ongoing testing at critical control points. While an organic certification can help demonstrate compliance with other sections of the Standard, Certified Organic status does not impact testing requirements.

IS TESTING REQUIRED FOR ANIMAL-DERIVED PRODUCTS?

Yes. Animal-derived inputs are tested at the feed level due to the prevalence of GMOs in animal feed. Animal feed testing has specific procedures; please see the **Animal-Derived FAQ** for specifics.