Non-GMO Project Standard

Public comment periods on the Standard in its entirety are held for 60 days beginning in April of each year. Comments may be submitted online during the public comment period at http://www.nongmoproject.org/product-verification/non-gmo-project-standard/
Comments may be sent at any time to standard@nongmoproject.org.

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I. Introduction

The Non-GMO Project is a non-profit organization committed to preserving and building sources of non-GMO products, educating consumers, and providing verified non-GMO choices.

A. Purpose

The Non-GMO Project's Standard aims to verify that systems are in place for:

1. **Testing:** Meaningful, ongoing testing of high GMO risk inputs.

2. **Traceability:** Supply chain traceability, especially following input testing.

3. **Segregation:** Protecting compliant inputs from contamination by non-compliant inputs.

4. **Formulation:** Obtaining inputs in accordance with uniform and meaningful specifications.

5. **Labeling:** Accurate and clear product labeling.

6. **Quality assurance:** Maintaining operational consistency and addressing non-conformities promptly.

B. Methodology and approach

1. The Non-GMO Project's Product Verification Program ("PVP" or "Program") is based on a practice/process-oriented Standard that uses testing as a key strategic tool to confirm that practices/processes are meeting expectations.

2. A core goal of the Project is to identify, create, and/or maintain sources and practices that effectively minimize GMO risk to the supply chain.

3. Release of products to the marketplace shall be contingent on products meeting requirements regarding Non-GMO Project Standard compliance, including traceability, segregation and testing.

4. Continuous improvement on the part of PVP Participants is required with the common goal of completely eliminating any GMO risk ingredients from the production chain.

II. Scope

The scope of the Non-GMO Project Standard and Product Verification Program (PVP) encompass the following inputs and activities:

A. Ingredient[1] classification

All ingredients are classified according to weight percentages of the product, not counting the weight of salt or added water in the finished product. For livestock feed, the categories below are calculated based on the weight of the input as a percentage of the ration fed to the animal.

1. **Major Ingredients**, each of which represents 5% or more of the product or is a defining ingredient.[1]

2. **Minor Ingredients**, each of which represents at least 0.5% but less than 5% of the product, and is not a defining ingredient.[2]

3. **Micro Ingredients**, each of which represents less than 0.5% of the product and is not a defining ingredient. The scope of review for these ingredients shall be limited to the active input used directly in the product, as opposed to growth medium, substrates or feed.[3]

    a. **Micro Ingredients that require evaluation.** The following inputs are not allowed in any amount if they are the direct product of genetic modification:
        i. Viable microbes. Examples include yeasts (saccharomyces sp.) used in beer and cultures like Lactobacillus used in yogurt.
        ii. Functional enzymes. Examples include Chymosin and catalase.
        iii. Ingredients that are direct products of GM microorganisms and are not in a purified form.[4] Examples include yeast extracts and algal oils.
        iv. Any added nutrient, vitamin or other active component contained in a finished supplement product.[5]
        v. Any product of synthetic biology.[6]

    b. **Exempt Micro Ingredients.** All micro ingredients not listed in II.A.3.a directly above are exempt from evaluation provided that any given product formulation does not contain more than:
        vi. 10 Exempt Micro Ingredients[7]; OR
        vii. 0.9% total Exempt Micro Ingredients.

[1] Refer to Appendix A for definition of these terms.
[2] Per section VI.A, all micro and minor inputs of livestock feed are exempt from evaluation.
[3] For Micro Ingredients of animal origin, the feed consumed by the animal is exempt from evaluation.
[4] An ingredient is considered to be in purified form if it has been extracted from other molecules, elements, or systems where the product was found or produced such that any impurities have been removed so that they have no technical effect.
[5] This restriction takes effect on May 20, 2019.
[6] See definition of GMO or genetically modified organism in Appendix A.
[7] This option applies for food products until May 20, 2019; after that no product formulation may have more than 0.9% Exempt Micro Ingredients.

B. Input Evaluation

1. **Inputs that must be evaluated:**
   All inputs from the following categories must comply with the requirements of this Standard in order for the finished product to carry the Non-GMO Project seal or name.

   Note: Addressing contamination of seed is a stated priority of the Non-GMO Project. While traceability back to tested seed is not required for product verification, the Project is actively developing sources of compliant seed as the basis for a sustainable non-GMO supply chain.

Input category	Comment
Unprocessed agricultural inputs, such as vegetables, grains, fruit, greens, herbs, and other fresh foods, fibers, etc.	
Livestock feed components, such as grains, vitamins, enzymes, minerals, etc. and seed used to grow feed	
Microbial starters and enzymes, media, and products	Includes those used for animal feed (e.g., silage or hay inoculants, fermentation solids or similar products) or human food
Manufacturing and processing inputs ("inputs"), including ingredients, flavorings, seasonings, colorings, additives, and all other substances present in final, manufactured products	Processing aids used by the Participant and present in the final product are also included in the scope of this Standard.
Animal products, including dairy, meat, eggs, bee products, wool and hides	For the purposes of the Standard, cloned animals and their progeny are not allowed.
Processed agricultural products or ingredients and manufactured food products	
Dietary supplements, vitamins and herbal preparations	
Health-care products	
Personal care products and cosmetics	Includes lotions, soaps, balms, makeup, etc.
Textiles	
Other agriculturally derived mercantile products	
Packaging that is directly immersed or combined with liquid for the purpose of making the product available for human consumption	This includes but is not limited to tea, coffee, spice and soup bags, but does not include any part of the packaging other than the bag.

2. **Inputs that may be evaluated:**
   Inputs in the following categories may be verified, but this is not required in order to comply with section **II.B.1.** above. In order for the following inputs themselves to be marketed with reference to the Non-GMO Project seal or name, they must meet all of the relevant requirements of this Standard. Such inputs may then be marketed as the product itself (e.g. selling Non-GMO Project Verified packaging materials to a final consumer or product manufacturer) or denoted as part of another product (e.g. "This product's packaging is Non-GMO Project Verified.")

Input category	Comment
Seeds	
Other agricultural inputs, such as fertilizers, pesticides, and herbicides	The scope of this Standard contains an exclusion for composted materials and animal manures. These may be used from any source, *except* manure from animals that have been genetically engineered. An example of an animal engineered to produce a novel material would be a goat that is genetically engineered to have antibiotics or hormones secreted in its milk. Examples of non-compliant fertilizers are oilcake/oilseed meal from genetically engineered soybeans, canola, or cotton, un-composted GMO cornstalks, etc. An example of a non-compliant pesticide is genetically altered *Bacillus thuringiensis (Bt).* An example of a non-compliant herbicide is corn gluten from genetically engineered corn.
Cleaning products	
Packaging materials	
Veterinary inputs such as vaccines, hormones, semen and medicines	Does *not* include rBGH or rBST

C. Activities

The scope of the Program encompasses the following types of activities and sectors of food and related production systems:

Type of activity	Comment
Agricultural production—seeds and crops	Includes farm production, harvest, and post-harvest handling and storage on farm or farm-related facilities.
Handling	Includes any form of post-harvest movement, storage, transformation, or labeling of goods along the entire chain of custody from seed to consumer, except for products enclosed in final retail packaging.
Storage	Includes all links in the chain of custody from seed to finished product.
Distribution	This may or may not involve physical handling of goods.
Processing	Includes all conveyance, storage, processing, handling, assembly, or packaging of goods within any given production facility, including restaurants or other food service facilities.
Manufacturing	Involves the combination of inputs to make the final product sold by the operation in question.
Packaging and labeling	Includes any and all events where the package or labeling of goods is altered.

III. Risk classification and requirements

In order to focus the Program on inputs at risk for GMO contamination, the Standard classifies inputs into three categories.

A. Input categories

Category	Definition	Required preventative measures
Non-Risk	Materials that are not derived from biological organisms and are not, therefore, susceptible to genetic modification.	Examining the complete ingredient disclosure for compound ingredients, including all components of the input in question, to confirm the absence of components with GMO risk.
Low-Risk	Species for which genetically modified versions have not yet been commercialized, or for which there are no known or suspected instances of contamination.	1. Examining the complete ingredient disclosure for compound ingredients to confirm the absence of components with GMO risk. 2. Verifying that the Product was produced under conditions designed to avoid cross-

		contamination with GM materials. *a.* If the facility does not use any High-Risk Inputs, then demonstration of this fact is sufficient to fulfill this requirement. *b.* If the facility does use High-Risk Inputs, fulfillment of this requirement will involve demonstrating that procedures and systems are in place that effectively segregate the Low-Risk Product from potential sources of High-Risk contamination within the facility.
High-Risk (See **Appendix B**)	Genetically modified crops that are grown on a large scale in North America and certain other parts of the world. Animal products are included in the list of High-Risk Inputs because animal feed commonly contains High-Risk Inputs. In addition, injections of recombinant bovine growth hormone are sometimes used to increase milk production, and other High-Risk Inputs may be used to treat problems encountered in livestock production.	1. Examining the complete ingredient disclosure of the input to identify all High-Risk Ingredients. For each unique input received from each supplier, a specification sheet or similar description disclosing all components contained in the input must be on file with the Technical Administrator (TA). 2. Compliance with the traceability and segregation measures outlined in section **IV.** 3. Compliance with the testing requirements outlined in section **V.** *For animal products, verification is based on compliance with the requirements outlined in section **VI.A.***

B. Reclassification of risk

1. **From High Risk to Low Risk:**
   On a case-by-case basis, certain High-Risk Inputs may be downgraded to Low-Risk status based on source, documentation, protocols for contamination prevention/avoidance, and/or laboratory results (in accordance with this Standard) demonstrating consistently low risk of GMO contamination. Individual inputs may only be downgraded by the TA with the approval of the Non-GMO Project.
   a. An example would be cornstarch produced in a country where GMOs are prohibited, Non-GMO Project Standard compliant seed was verified as having been used, and documented identity preservation (IP) procedures are in place for the manufacturing and transport of the product.

2. **From Low Risk to High Risk:**
   A Low-Risk Input that is found through verified, random testing to contain GM material at levels above the Action Threshold (defined in section **V.A.**) at a frequency of greater than 1 sample per 50 samples tested, or that is projected to contain such GM material at a frequency greater than 1 in 50 samples based on existing test results, shall be classified as a High-Risk Input, the verification of which shall be carried out according to the requirements for High-Risk Inputs.
   a. Such risks will be evaluated on a Project-wide basis, i.e., from compiled experience with Participants using any given Low-Risk Input.

3. **Monitoring of Low-Risk Inputs with suspected contamination (see Appendix C):**
   Certain crops for which genetically modified versions have not yet been commercialized may be subject to higher contamination risk. Such crops are subject to monitor testing by the Non-GMO Project, and will be reclassified as High-Risk Inputs by the Standard Committee and Board of Directors if results indicate persistent contamination in accordance with section **III.B.2.** Crops may be added to **Appendix C** for either of the following reasons:
   a. Suspected or known incident of contamination at any point in the production chain. Examples include flax, for which known contamination by an unapproved variety has occurred.
   b. Genetically modified relatives are in commercial production with which cross-pollination is possible. Examples include table beets, which have a risk of cross-pollination with genetically modified sugar beets.

IV.Traceability, segregation, and inspections

A. Traceability

1. Each lot of Non-GMO Project Verified product or input must be traceable back to specific lots of the inputs used in its production. Systematic procedures shall be in place for tracking lot numbers and/or marking and labeling of packaging, containers, and storage facilities to assure traceability of inputs, work-in-progress, and final products at all points in the production process.

2. Traceability records shall explicitly trace and track the Non-GMO Project Standard compliant status of both inputs and the final product. If lots of a given input are co-mingled in storage before use in production of a certain lot of product, the lot numbers related to all lots commingled shall be linked to that particular lot of product.

3. Tracking of lot numbers and labeling/marking on packaging and containers shall be used as necessary to identify and segregate Non-GMO Project Standard compliant materials from non-compliant materials.

B. Cleanout and segregation

1. Receiving, production, processing, manufacturing, transfer, and storage facilities, as well as shipping and transportation conveyances, shall be inspected and cleaned/purged as needed to remove sources of GMO contamination, and all relevant cleaning, purging, and inspections shall be documented.

2. Systematic procedures shall be in place during production to keep Non-GMO Project Program Verified inputs, work-in-progress, and finished products separate from all materials that are not compliant with the Non-GMO Project Standard.

3. Segregation measures are also required for instances where any required testing occurs after the input in question has entered the facility. For example, when a Participant, rather than an ingredient supplier, is taking responsibility for testing.

C. Inspections

1. Unless the producing facility is exempted from inspection by an applicable part of this Standard, all facilities are required to be inspected annually.

2. Unless the TA finds cause for inspection, inspections are not required for:
    a. Products in which there are only Low-Risk Inputs
    b. Products in which the only Low-Risk and/or High-Risk Inputs are excluded from evaluation under section **II.A.3** or approved under section **V.E.4.**
    c. Products produced in a facility where there is no parallel processing[8] of the specific Major High-Risk Inputs used in those products.
    d. Products of a facility that is dedicated to certified organic production, if no parallel processing of High-Risk Ingredients is occurring in the facility.
    e. Contract processors that comply with the requirements of section **VIII.D.3**

V. Testing

In order to be considered valid under the Non-GMO Project Standard, tested samples are required to have sufficiently intact DNA.

A. Action Thresholds

Absence of all GMOs is the target for all Non-GMO Project Standard compliant products. Continuous improvement practices toward achieving this goal must be part of the Participant's quality management systems. A key requirement of such quality management systems is to meet and continually be below an Action Threshold. Inputs that do not comply with the testing requirements may not be intentionally used in verified products.

[8] See definition of Parallel Processing in Appendix A

1. The Non-GMO Project has established the following Action Thresholds for High-Risk Inputs and Products:

Category	Action Threshold
Seed and other propagation materials	0.25%*
Human food, ingredients, supplements, personal care products, and other products that are either ingested or used directly on skin	0.9%
Animal feed and supplements	5%**
Packaging, cleaning products, textiles and other products that are not ingested or used directly on skin	1.5%

** For seed of species not listed in **Appendix B**, and for all species not listed in **Appendix B or C**, there is no allowable presence.*
*** This Action Threshold is based on the annual average of all lots tested.*

2. **Participants must demonstrate compliance with the Action Threshold.**
    a. In general, compliance should be demonstrated by ensuring that each batch of High-Risk Input used has tested below the relevant Action Threshold prior to its use in verified product. In this case, test results are submitted to the Technical Administrator for review at the time of annual renewal.
    b. In cases where the requirement immediately above is demonstrated to be problematic to achieve, and the product is not planting seed or other propagation material, compliance may be demonstrated by ensuring that test results for all batches of High-Risk Input used during each 6 month period average at or below the relevant Action Threshold, with no single batch of input ever exceeding the relevant Action Threshold by more than a factor of 2. In this case, all test results are submitted to the Technical Administrator for review at least annually, and the Participant is responsible for ongoing monitoring of test results to ensure compliance for each period.
    c. For livestock products, compliance must be demonstrated according to the requirements in section **VI.A.**

3. **When tested lots are mixed after testing has been conducted**, the Participant must:
    a. Demonstrate reasonable efforts to achieve homogeny prior to testing.
    b. Investigate and document the cause of any individual lot's contamination over the relevant Action Threshold.
    c. Implement and document practical continuous improvement practices to reduce, and ultimately eliminate, the need for any future blending of lots. An example of one such practice would be to help growers secure Non-GMO Project Standard compliant planting seed.

In all cases, the finished lot must be below the relevant Action Threshold.

B. Genetics-based testing using the Real-Time or Digital PCR method

1. **Genetics based testing** is required before a finished product can be verified, except for livestock products verified under section **VI.A.** The frequency and location of Real Time or Digital PCR testing can be tailored to accommodate the Participant's supply chain.
2. **A statistically valid sampling and testing plan** shall be designed on the basis of risk assessment of the production/handling system, and shall reflect the level of monitoring appropriate for the risks inherent in the production/handling system, as well as industry standards.
    a. Risk assessment and monitoring must be done according to a sampling and testing plan approved by the Technical Administrator.
    b. Compliant sampling and testing must occur at least once post harvest, depending on contamination risks, except for livestock products verified under section **VI.A.** Sampling plans must be designed to achieve 90% confidence in quantification of GMO at the Action Threshold set by this Standard. When achieving this level of confidence through crop sampling cannot be done without destroying the consumer product (e.g. for large crops such as sweet corn on the cob, zucchini and papaya), the testing program may be shifted to the seed level with limited post-harvest spot testing.

3. **Compositing samples**
   Statistical calculations can also be used to design compositing strategies through which portions of multiple samples can be combined and tested together for the purpose of reducing the number of tests required and therefore the costs for testing.
    a. Compositing must be done in a manner that assures that any single sample in excess of the relevant Action Threshold produces a positive result for the composite sample as a whole. If a positive result is obtained for the composite, it will be necessary to retest all samples individually.

4. **Approved laboratories**
   Testing shall be carried out by a laboratory that is accredited to ISO17025, approved by the Non-GMO Project, and uses methods that are included within the scope of their ISO17025 accreditation, for the crops/inputs in question. http://www.nongmoproject.org/product-verification/about-gmo-testing/accredited-labs-and-resources/.
    a. Appropriate laboratory controls must indicate that the DNA of the input is sufficiently intact to allow valid quantitative analysis by PCR. Inputs that do not meet this criterion, and are therefore not "testable" in this manner, must be verified by lot-specific traceability back to testable precursors for the input.

5. **Laboratory testing** must target all commercialized GM events relevant to the product and the production system.
    a. Where quantitative results are required, the Real-Time or Digital PCR test must employ primers sufficient to accurately quantify the % GMO for that event.
    b. Qualitative analysis using Real-Time PCR is sufficient if:

i. the PCR limit of detection is 0.01%; and
ii. GMOs are not detected; and
iii. appropriate laboratory controls indicate that the DNA of the input is sufficiently intact to allow for valid quantitative analysis by PCR

C. Immunologically-based testing using strip tests

1. **In cases where lateral flow strip tests are suitable**, they must cover all commercialized GM events for the crop in question.
    a. These methods shall be used when rapid, qualitative in-field testing is needed and when accuracy, sensitivity, and ramifications of false negative results are not significant concerns. An example includes use of strip tests for the purpose of spot testing input samples. Compositing can be used for subsequent confirmatory Real-Time PCR testing. Frequency of Real-Time PCR testing and method of compositing to be determined such that there is 90% confidence in quantification of GMO at the Action Threshold set by the Standard.

2. **A statistically valid sampling and testing plan** shall be designed on the basis of risk assessment of the production/handling system and shall reflect the level of monitoring appropriate for the risks inherent in the production/handling system, as well as industry standards.

3. **Analysts must be trained and their performance verified** to assure they use the tests reliably.
    a. Participants shall document the in-house evaluation of performance.

D. Verification of inputs based on testing alone

1. This section allows for High-Risk Inputs to be verified as compliant with the Standard if:
    a. A copy of the original result for the PCR test shows that the GMO content of the input in question is below the relevant action threshold; and
    b. The testing must have been conducted by a laboratory in compliance with section **V.B.4.** and must reference by lot number the specific lot of product used by the Participant; and
    c. Appropriate laboratory controls indicate that the DNA of the input is sufficiently intact to allow valid quantitative analysis by PCR. (Inputs that do not meet this criterion and are, therefore not "testable" in this manner, must be verified by lot specific traceability back to precursors for the input that are testable.)

2. This section also allows for High-Risk Inputs to be verified as compliant with the Non-GMO Project Standard if:
    a. The precursor(s) to the input used by the Participant are tested by PCR; and
    b. For each precursor to an input used by the Participant, a copy of the original result for the PCR test of the specific lot of the precursor in question must show that the GMO content is below the relevant action threshold; and

c. The testing must have been conducted by a laboratory in compliance with section **V.B.4.** and must reference by lot number the specific lot(s) of the precursor used for lot of product used by the Participant; and
d. Appropriate laboratory controls indicate that the DNA of the tested precursor is sufficiently intact to allow valid quantitative analysis by PCR; and
From the point of the PCR testing forward, an identity preservation system is in place to ensure the given lot of the input in question has not been exposed to any other High-Risk GMO material. All such systems are subject to review and must be approved by the Technical Administrator.

E. Using supplier affidavits to confirm compliance

1. Affidavits may be used to confirm compliance of Low-Risk Inputs or inputs that have been downgraded to Low Risk per section **III.B.1.**

2. The affidavit must attest that the origin of the input as well as its chain of custody merits the classification of the input as Low Risk as described in section **III.A.**

3. The affidavit must be signed by the manufacturer of the input.

4. In cases where GMO analytical certificates or traceability linked to analytical certificates of precursors is not available, Non-GMO Project compliant status of Minor and Micro Ingredients (as defined in section **II.A.**) may be verified based on affidavits from suppliers, as long as these ingredients are the product of a system that has been designed to avoid GMOs. Examples of such systems are organic certification and other IP systems. Suitability of these other IP systems is subject to review by the Technical Administrator with the approval of the Non-GMO Project. Suppliers shall agree to provide further information or demonstration in support of affidavit when requested by the Technical Administrator.

VI. Special requirements for specific product sectors

The following requirements are intended to complement other sections of the Standard. Where specific topics are addressed below (e.g. testing), those requirements are authoritative. Where alternative requirements are not given, those from elsewhere in the Standard apply.

A. Livestock products and feed

Livestock products are qualitatively different from any other type of input verified under this Standard in that there is no point in the production chain at which it is possible to identify GMO contamination using current testing methodologies. It is therefore necessary to control contamination based on testing of feed, and/or of the seed used to grow the feed.

1. **Seed** used to grow crops for livestock feed
    a. From the point of enrollment, Participants have a five-year transition period to bring all seed into compliance with the requirements in subsections b. and c. immediately

below. During the transition period, seeds must be the product of a system designed to avoid GMOs.

b. **Commercially purchased seed** planted for on-farm feed production must be compliant with the requirements outlined in sections **V.A.** and **V.B.** of this standard.

c. **Farmer-saved seed** and seed purchased from any neighboring farmer who does not have a retail seed operation must be strip tested annually. Frequency of testing should increase if there are any changes that would significantly increase the likelihood of contamination (e.g. new neighbor planting GMOs). If the strip test results are positive, samples must be submitted to a lab for quantitative PCR testing. If the seed is over the Action Threshold the seed may not be planted.

2. **Commercially purchased feed:**
Compliance of commercially purchased feed shall be demonstrated through evaluation of Major Ingredients, including testing of High-Risk Major Ingredients.

a. **Commercially purchased feed for certified organic operations in which products are pooled before final processing (e.g. dairy, ground meat, egg mixtures):**
The sampling plan for certified organic operations shall be based on testing of a composite sample of the High-Risk feedstuffs from a representative selection of farms, with an intention of identifying and addressing any contamination occurring in the Participant's operation. The farms chosen for such testing shall be representative of the Participant's operations in a region (defined as a geographic area with relatively homogenous farm operations and sources of livestock feed, typically encompassing one or more states, in which farms ship unprocessed livestock products to one or a few processors).

Testing methodology:
The testing method must yield valid results for all Major High-Risk Ingredients. When feedstuffs can be isolated into their raw material components, strip testing may be used. When feedstuffs are tested as a blend form, PCR testing must be used.

Quarterly sampling density:
- Fewer than 10 farms per region: minimum of 1 farm tested per region per quarter
- 10-20 farms per region: minimum of 2 farms tested per region
- 21-50 farms per region: 10% of farms tested per region
- 51-100 farms per region: 5% of farms tested per region
- Over 100 farms per region: minimum of 6 farms tested per region

The sampling plan within each region shall include a random selection of farms each quarter. Annual sampling plans shall be reviewed with the Technical Administrator and may be adjusted over time to provide the most technically sound basis for continuous improvement. Adjustments shall be mutually agreed upon and might

include increased/decreased sampling frequency or density in regions with unusually high/low percentages of samples over the Action Threshold.

Composite samples shall be tested on a quarterly basis. When more than one test is needed, results shall be averaged. Quarterly results or averages in excess of the Action Threshold shall trigger an assessment of the cause of contamination and appropriate steps to eliminate identified sources of contamination.

Participants shall provide a report upon renewal on any significant changes in the frequency of GMO presence in livestock feed, the percent of samples exceeding the Action Threshold, and steps taken to secure feed below the action threshold.

b. **Commercially purchased feed for non-organic operations and all operations in which products are NOT pooled before final processing (e.g. shell eggs, cut meat):** The sampling plan for non-organic operations must include quarterly composite testing of feed samples for each shipment of feed purchased by each farmer in the Participant's operations. If more than 20% of the Participant's farmers fail to supply samples, it will be considered a major nonconformity, subject to section **VIII.C.3.**

Testing Methodology:
Testing method must yield valid quantitative results for all Major High-Risk Ingredients. When feedstuffs can be isolated into their raw material components, strip testing may be used. When feedstuffs are tested as a blend form, PCR testing must be used.

Feed must be in compliance according to the following life cycle guidelines:

- Meat animals (other than Poultry): starting at birth
- Poultry: starting from 2nd day after hatching
- Dairy animals and laying hens: 30 days prior to verification and continuously thereafter

3. **Commercially produced feed:**
Compliance of commercially produced feed shall be demonstrated through evaluation of Major Ingredients, including testing of High-Risk Major Ingredients.
   a. The testing method must yield valid results for all Major High-Risk Ingredients.
   b. When feedstuffs can be isolated into their raw material components, strip testing may be used as described in section **V.C.**
   c. When feedstuffs are tested as a blend form, PCR testing must be used as described in section **V.B.**

4. **Onsite inspections for farms and feed mills:**
Inspections may be completed via a group certification model. In order to be considered compliant, the Participants' internal control system (ICS) must conduct a documented assessment visit to each farm at least once every year.

a. In addition to the ICS, third party inspections must be conducted on 10% of all farms every year. Results of the third party audit will be compared with results of the ICS assessment of the farms to verify effectiveness of the ICS process.
b. For certified organic operations, additional inspections (beyond those required for organic certification) are not required.
c. Inspections of feed mills are only required in cases where the feed mill itself is a Participant seeking verification.

B. Restaurant Made Products (RMP)

This section applies to dishes made within a restaurant or other food service facility.

1. Inspections

a. Unless exempt from inspection per IV.C.2, every restaurant seeking verification for RMP must be inspected annually.
b. In addition to annual inspections, unannounced inspections requested by the Technical Administrator (TA) will be performed based on suspected non-compliance with the requirements for verification of RMP.
c. If the restaurant is a chain of facilities of 25 or more, and if purchasing is centrally controlled, the annual inspection requirement may be met by inspecting only the square root of the total number of facilities. Facilities to be inspected will be chosen at random by the TA.

2. High-Risk Ingredients

a. All High-Risk Ingredients used in any RMP for which the restaurant seeks verification must be continuously tested and/or monitored in compliance with the Standard.
b. All High-Risk Ingredients used in the restaurant, even if they are not used in RMP, must be managed according to Standard-compliant systematic traceability and segregation procedures and reflected in the restaurant's written Standard Operating Procedures (SOP).

3. Low-Risk Ingredients

a. GMO contamination of all Low-Risk Ingredients used in the restaurant must be minimized through the use of preventive measures required by the Standard and reflected in the restaurant's SOP.

4. Restaurant Internal Control Systems

a. Internal Control Systems (ICS) must be developed and implemented to ensure that the restaurant complies with all applicable SOP.
b. The restaurant's ICS must include the following:
    i. Training for all restaurant staff involved in meeting the requirements for RMP
    ii. Regular review of invoicing and other internal purchasing records for possible non-compliance with the requirements for RMP
    iii. Document retention for all training and purchasing review
    iv. Anything else deemed necessary by the TA.

C. Honey and Bee Products

Honey and other bee products must meet the following requirements:

1. The bees' forage area must be sufficiently free of GM commercial agriculture, within a 4-mile radius of hives, to minimize contamination of the bees with GM pollen.

2. Any non-forage feed for the bees must be evaluated for compliance with the required preventative measures listed in Section III. A. for high-risk inputs.

VII. Product specifications and labeling

A. Specifications for obtaining inputs

1. For products verified under the Program, Participants shall not knowingly plant, purchase, or use inputs that are not compliant with the Standard.

2. The written specifications for all inputs and products shall include requirements regarding Non-GMO Project Standard compliance, and shall be updated when the Participant changes suppliers or inputs.

3. Spot purchasing of unverified inputs should be avoided. Participants must seek out Non-GMO Project Verified inputs. If a spot purchase of unverified input is made, the Participant must justify to the Technical Administrator why a verified input was not used. Spot purchases of unverified inputs are only allowed on the following basis:
    a. Any High-Risk Input that is spot purchased must be tested in accordance to the requirements of this Standard, and must be below the relevant Action Threshold.
    b. The Participant must provide the Technical Administrator with documentation of the purchase, including sampling information and test results. This reporting shall be done at least once per year, according to a schedule determined between the Technical Administrator and the Participant.
    c. Constraints on spot purchasing may be enforced at the discretion of the Technical Administrator. For example, repeated spot purchases from the same supplier could be grounds for this allowance to be revoked or restricted.

B. Labeling

1. **Labeling claims must be accurate and truthful**, and must not mislead the consumer about the GMO content of the product. Any reference to the Non-GMO Project or use of the seal must be approved by a written agreement with the Non-GMO Project. Examples of claims that are not acceptable are "contains zero GMOs," "GMO-free" and "GE-free."

2. **Certain products made with livestock and bee product inputs may use a "made with" claim** in accordance with the following guidelines:
    a. Livestock/bee product inputs may not collectively constitute more than 25% of the product, and may not be a defining ingredient.
    b. The product must contain approved Major, High-Risk Inputs other than those from the livestock/bee products (e.g. corn meal, soy flour, etc. constituting more than 5% of the product).
    c. The "made with" claim may only be made in relation to approved Major, High-Risk Inputs. For example, a corn chip with a seasoning blend containing more than 5% of an unverified dairy ingredient could claim "Made with Non-GMO Project Verified Corn."
    d. The "made with" claim is a text only claim. The Non-GMO Project verification mark may not be used on products approved under section **VII.B.2.** For more details, see the Non-GMO Project Licensing Agreement.
    e. If the product contains dairy inputs, supplier affidavits must show that no recombinant bovine growth hormone (rBGH, rBST) was used.

3. The Technical Administrator will review labels to assess compliance with these claim guidelines.

VIII. Quality assurance

A. Quality assurance systems

1. The Participant's quality assurance and quality control program shall be revised as needed to assure compliance with the Standard.

2. Compliance with applicable requirements of the Standard shall be identified as a key quality indicator of the Participant's products, and standard operating procedures (SOPs) shall be revised, or added where necessary, to incorporate measures that assure such compliance of products with the Standard.

3. Where needed, additional training shall be provided to staff to assure that they are capable of fulfilling their duties in a manner that supports compliance of the operation, and the products produced, with the Standard.

4. Documents and forms shall be revised, as necessary, to include compliance with the requirements of the Standard as a key quality indicator, and to assure that the Participant operates in a manner that fulfills the requirements of the Standard.

5. All documents, forms, reference materials, and specifications needed by personnel to fulfill the requirements of the Standard shall be readily available to relevant personnel.

6. Records shall be retained for 3 years.

B. Monitoring of critical control points

1. Monitoring and control of key parameters relevant to compliance with the Standard shall be incorporated into the Participant's quality assurance and quality control program. Key parameters include traceability, segregation, and testing for compliance with Action Thresholds.

2. The Participant shall monitor and verify the compliance with this Standard of inputs purchased and of products sold, and this shall be documented.

C. Nonconformities and corrective actions

1. Non-conformities in processes, procedures, inputs, or products, which could impact compliance with the Standard, shall trigger corrective actions.

2. Nonconformities discovered during the Program application or renewal process must be satisfied in order to achieve or maintain compliance with the Standard. Mid-term nonconformities discovered through internal quality-assurance processes, complaints from customers, or third party surveillance, require corrective action as described below.

3. Major nonconformities shall be reviewed at the time of occurrence, documented, and immediately reported in writing to the Product Verification Program's Technical Administrator by the Participant.
    a. Discovery of any major nonconformity must be followed by timely root cause analysis. "Timely" is considered to be typically within 7 days, and rarely longer than 30 days. Longer delays must be justified in writing. The plan for root cause analysis must include an explanation of the action steps already being taken, and the expected completion date of the root cause analysis.
    b. Findings of the root cause analysis must be reported in writing to the Technical Administrator, together with expected corrective actions to be undertaken.
    c. Corrective actions must be completed within 15 days of completing the root cause analysis. The Technical Administrator will review and approve the planned corrective actions. Corrective action plans shall include identification of persons responsible for their execution, defined timelines for actions, and realization of the desired results of the corrective action plan. Documentary evidence must be submitted to the Technical Administrator within 5 days of completing corrective actions. Such evidence might include new/modified quality assurance SOPs such as updates to training and record keeping or changes to sampling and testing plans, and, where possible, evidence that these updated SOPs are achieving compliance with the Standard. The Technical Administrator will review and approve all corrective evidence.
    d. Any delays in the timeline from reporting to completion of corrective actions must be justified in writing and approved by the Technical Administrator.

4. Any major known nonconformity that goes unreported and/or uncorrected according to the requirements above shall be cause for product or the company to be removed from the Program. Prior to removing company or product from the program, the Technical Administrator must notify company via email of this intended action. Company will have 10 days from date of said notice to provide all required documentary evidence to avoid withdrawal from the program.

5. Identification of nonconformities, corrective actions, root cause analysis, and successful remediation of the noncompliance shall all be documented.

6. Repeated nonconformance with the Action Threshold may require company mid-term re-evaluation of the facility and possibly including an onsite inspection and/or input supplier verification.

7. Minor nonconformities shall be reviewed at the time of the annual evaluation. Renewal of verified status shall be contingent upon appropriate resolution of any such nonconformity.

D. Participation

1. **In addition to Participants,** suppliers and contractors shall also participate in the Program as necessary to verify compliance with the Standard.
    a. In some cases, inputs certified by other non-GMO certification programs may be approved as equivalent for use in verified products. A program would be acceptable as long as that program is fully equivalent to or exceeds the requirements of the Non-GMO Project Standard. The decision on equivalency will be made by the Board of Directors based on evaluation of said program by the Technical Administrator via a procedure duly approved by the Board. In such cases, certificates of compliance from such a program may be accepted as equivalent to verification by the Non-GMO Project.
    b. Such suppliers and contractors must still, in all cases, provide their product, ingredient and facilities data to the Technical Administrator.

2. **Renewal evaluation of every verified product** shall be required at least annually. The Technical Administrator may require a Participant to submit updates more frequently, if history shows cases of major nonconformities occurring as a result of unannounced changes to the operation. Such changes could include the following: changes in product composition that involve High-Risk Inputs, changes in suppliers of High-Risk Inputs, changes in processes or procedures that alter segregation or traceability of products, or changes in specifications of a High-Risk Input or of a final product that contains High-Risk Inputs.

3. **Participants with contract processors.**
    The Program follows a process-based approach that is supported by testing at strategic points in the supply chain. The Non-GMO Project acknowledges contractual agreements between certain Participants (e.g., brand owners) and their contracted processors. Thus, any manufactured product that is made by an operation contracted by the Participant may

be evaluated and approved under the Program as long as it is a product of a system that has been designed to avoid GMOs. Examples of such systems are organic certification and other identity preservation systems. All such systems are subject to review by the Technical Administrator, especially in cases where parallel processing occurs within the certified system (for example, processing certified organic soybeans in both Non-GMO Project Verified and non-verified forms). In such cases lot-by-lot identity preservation will likely be necessary.

The Participant and/or the contracted operation must provide evidence of testing as described in section **V.**, and, unless the product is being co-packed in a facility that is dedicated to certified organic production and no parallel processing of High-Risk Ingredients is occurring in the facility, the contracted processor's exemption from inspection under this section **VIII.D.3** expires after three years. After that point, the Participant must EITHER:

a. Adopt a defined plan for bringing contracted operations into full participation in the Product Verification Program and full standard compliance within a defined time frame; OR
b. Submit to a facility survey and onsite inspection for contracted operations. Such inspections shall be completed by an inspector approved by the Non-GMO Project.

Appendix A – Additional terms and definitions

Compost – Decayed organic material used as a fertility amendment in agricultural production, produced by a combination of actions over time by microbes, invertebrates, temperature, and other elemental factors (e.g., moisture content, aeration). Composted material shows practically no macroscopic indication as to the original substrate(s) from which it was made.

Defining ingredient – A defining ingredient is one whose name appears in the name of the product.

Enzyme – A protein molecule extracted from a living organism, which acts as a catalyst to bring about a specific biochemical reaction capable of breaking down materials; specific examples include chymosin, catalase, and amylase.

Farming operation – Any operation involved with production, handling, storage, or management of crops until legal ownership or physical transformation of crops or livestock products occurs.

Functional Enzyme – An enzyme that has not been denatured (e.g. by being subjected to high heat, harsh acids or bases, ultrafiltration, or centrifugation), and thus retains its catalytic functioning capability.

GM – Genetically Modified or Genetic Modification—A term referring to products or processes employing gene splicing, gene modification, recombinant DNA technology, or transgenic technology, and referring to products of the gene-splicing process, either as inputs or as process elements.

GMO or genetically modified organism – A plant, animal, microorganism, or other organism whose genetic makeup has been modified using recombinant DNA methods (also called gene splicing), gene modification, or transgenic technology. Cloned animals and their progeny are also considered GMOs under this Standard, as are the products of synthetic biology. Any organism or input from an organism—whether used as inputs or as process elements in the creation of substances or materials—is a product of synthetic biology if it is associated with synthetically created nucleic acid sequences and/or genes.

Growth Media – Materials or mixtures of materials designed to support the growth of microorganisms.

Input – Any material or substance that becomes a part of the final product, or a component of which becomes a part of the product, or is used otherwise in the production of a product. These include the following:

- Agricultural inputs, such as seeds, fertilizers, and pesticides.
- Unprocessed agricultural products, such as vegetables, grains, fruit, greens, herbs, and other fresh foods etc.

- Feed components, such as grains, forage plants, vitamins, enzymes and minerals.
- Livestock production inputs such as vaccines, hormones, and other veterinary materials.
- Manufacturing and processing inputs, including ingredients, flavorings, seasonings, colorings, additives, enzymes, cultures, and all other substances present in final manufactured products.

The Non-GMO Project distinguishes between inputs as being "mono" (composed of only one component) or "compound" (composed of more than one component).

Major nonconformity – A major nonconformity is a deviation that could affect the compliance of the product with the relevant Action Threshold, such as accidental contamination of the product with GM material.

Medicine (veterinary) – (i) Any synthetic material other than vitamins, minerals, or amino acids given to livestock at any time; or (ii) Any non-synthetic material given to an animal on a non-routine basis for the purposes of maintaining or restoring health.

Microbe – A microorganism, especially a bacterium or fungus causing fermentation or otherwise metabolizing media. Specific examples include yeasts as in Aspergillus and bacteria as in Lactobacillus.

Minor nonconformity – A minor nonconformity is a deviation that could not cause any of the relevant ingredients used throughout the operation to exceed the relevant Action Thresholds. This includes minor changes to procedures, recordkeeping, documentation, or anything else minor that does not have the potential to impact compliance with Action Thresholds.

Non-GMO or Non-GM – A plant, animal, or other organism or derivative of such an organism whose genetic structure has not been altered by gene splicing. A process or product that does not employ GM processes or inputs. Cloned animals and their progeny are considered GM, as are the products of synthetic biology.

Parallel processing – The practice of using the same facility for handling both Non-GMO Project compliant and non-compliant inputs or products.

Participant – A company or other entity independent of the Non-GMO Project that enrolls in the Program.

Product – A distinct product formulation that the Participant offers to the marketplace, at whatever stage of the production chain (i.e., final consumer product, ingredient for further manufacturing, raw agricultural crop or commodity, etc., as applicable). "Product" refers to products that are involved in the Non-GMO Project Product Verification Program.

Restaurant Made Products (RMP) – Includes food, food ingredients or other food-related items made, served or provided for sale to the public by any restaurant or other food service facility.

Shall or must – A mandatory requirement under the Standard.

Should or may – A non-mandatory recommendation or recommended practice.

Standard – The Standard for The Non-GMO Project Product Verification Program, which is this document.

Substrate – A material on which an enzyme acts. Examples include carbohydrates, proteins, and sugars.

Supplier – Any party from whom an input is obtained.

Technical Administrator – A certification body approved by the Non-GMO Project to assess compliance with the Standard on behalf of the Project.

Unintentional contamination – A contamination incident (event) will be deemed unintentional if available information confirms that: (i) The operator did not knowingly use GMOs or GMO-derived inputs; or (ii) The operator used all due diligence to exclude GMO contamination.

Viable Microbe – A microbe that performs metabolic functions and reproduces/multiplies.

Appendix B – Non-GMO Project risk list

(List of crops, livestock, processed/processing inputs, production inputs, and other organisms with known GMO risk)

A. Crops

- Alfalfa
- Canola
- Corn (except popcorn)
- Cotton
- Papaya
- Soy
- Sugar beets
- Zucchini and yellow summer squash

B. Animal derivatives

- Eggs
- Hides and skins
- Honey and other apiculture products
- Meat
- Milk
- Seafood from aquaculture

C. Livestock production inputs

- rBGH, rBST (recombinant bovine growth hormone or recombinant bovine somatotropin)
- Semen
- Vaccines
- Veterinary medicines

D. Microbes and microbial products

- Enzymes – including chymosin
- Microbial cultures and starters – including yeast
- Algae from aquaculture

Appendix B – Non-GMO Project risk list

E. Processed/processing inputs and ingredients, and related derivatives, derived from crops, livestock, or microorganisms[9]

- Amino acids
- Aspartame
- Ascorbic acid, sodium ascorbate, vitamin C
- Citric acid, sodium citrate – derived from glucose syrup
- Ethanol – derived from corn or GMO sugar beets.
- Flavorings, "natural" and "artificial" – including all carriers and co-formulants
- Corn syrup
- Hydrolyzed vegetable protein
- Lactic acid
- Maltodextrins
- Microbial growth media
- Molasses – derived from sugar beets
- Monosodium glutamate
- Sucrose – derived from sugar beets
- Synthetic biology products
- Textured vegetable protein – including soy protein
- Xanthan gum
- Vitamins – vitamin A (various forms), vitamin B6 (pyridoxine hydrochloride), vitamin B12 (cyanocobalamin), vitamin C (ascorbic acid), and vitamin E (various forms) are known to have GMO risk. Vitamins in general are often formulated with dispersants and related ingredients that also have GMO risk (e.g., corn oil).
- Yeast products

[9] The following is a non-exhaustive list of derivatives with high GMO risk that are commonly used in food production. It is meant to provide examples of materials that are considered High-Risk by the Non-GMO Project.

Appendix C – List of monitored crops[10]

- *Beta vulgaris,*(e.g., chard, table beets) – cross pollination risk from GM sugar beets
- *Brassica napa* (e.g., rutabaga, Siberian kale) – cross pollination risk from GM canola
- *Brassica rapa* (e.g., bok choy, mizuna, Chinese cabbage, turnip, rapini, tatsoi) – cross pollination risk from GM canola
- *Cucurbita pepo* (acorn squash, delicata squash, patty pan squash, pumpkin, and spaghetti squash) – cross-pollination risk from GM squash
- *Flax*
- *Rice*
- *Wheat*
- *Potato*

[10] Monitored crops include those for which suspected or known incidents of contamination have occurred, and those crops which have genetically modified relatives in commercial production with which cross-pollination is possible.

Appendix D – Map of Version 11 to Version 12 (Hyperlinked)

Standard Version 11	**Standard Version 12**
1. INTRODUCTION	I.
1.1. **Purpose**	I.A.
1.1.1. That the systems and procedures of the participant…	Consolidated in section I.B.
1.1.2. That the Participant consistently operates their…	Consolidated in section I.B.
1.1.3. The Non-GMO Project's Product Verification Program…	I.B.1.
1.2. **Scope**	II.
1.2.1. **Products**	Consolidated in section II.B.
1.2.1.1. Agricultural inputs, such as seeds, fertilizers…	II.B.2.
1.2.1.2. Unprocessed agricultural products, such as vegetable…	APPENDIX A
1.2.1.3. Livestock feed components, such as grains…	II.B.1.
1.2.1.4. Microbial starters, media, and products.	II.B.1.
1.2.1.5. Manufacturing and processing inputs...	II.B.1.
1.2.1.6. Animal products, including dairy, meat, eggs…	II.B.1.
1.2.1.7. Veterinary inputs such as vaccines, hormones…	II.B.2.
1.2.1.8. Processed agricultural products…	II.B.1.
1.2.1.9. Dietary supplements, vitamins…	II.B.1.
1.2.1.10. Health-care products.	II.B.1.
1.2.1.11. Personal care products and cosmetics.	II.B.1.
1.2.1.12. Cleaning products.	II.B.2.
1.2.1.13. Packaging, textiles and other agriculturally derived…	II.B.1. and II.B.2.
1.2.2. **Activities**	I.B.2. and II.
1.2.2.1. Agricultural production—seeds and crops	II.B.1. Note and II.C.
1.2.2.2. Handling	II.C.
1.2.2.3. Storage	II.C.
1.2.2.4. Distribution	II.C.
1.2.2.5. Processing	II.C.
1.2.2.6. Manufacturing	II.C.
1.2.2.7. Packaging and labeling	II.C.
1.2.3. **Program Elements**	I.A.
1.2.3.1. Traceability	I.A.2.
1.2.3.2. Segregation	I.A.3.
1.2.3.3. Specifications for Inputs and Products	VII.A.
1.2.3.4. Operating Procedures	I.A.6.
1.2.3.5. Quality System	I.A.6.
1.2.3.6. Quality Assurance and Quality Control	I.A.6. and VIII.A.
1.2.3.7. Training	VIII.A.3.
1.2.3.8. Document Control	VIII.A.4. - VIII.A.6.
1.2.3.9. Maintenance of Records and Data	VIII.A.4. - VIII.A.6.

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Standard Version 11	**Standard Version 12**
1.3. **Additional Terms and Definitions**	APPENDIX A
1.3.1. Compost	APPENDIX A
1.3.2. Farming operation	APPENDIX A
1.3.3. GM	APPENDIX A
1.3.4. GMO or Genetically Modified Organism	APPENDIX A
1.3.5. Input	APPENDIX A
1.3.6. Medicine (Veterinary)	APPENDIX A
1.3.7. Non-GMO or Non-GM	APPENDIX A
1.3.8. Parallel Processing	APPENDIX A
1.3.9. Participant	APPENDIX A
1.3.10. Product	APPENDIX A
1.3.11. Shall or Must	APPENDIX A
1.3.12. Should or May	APPENDIX A
1.3.13. Synthetically Modified Organism or SMO	APPENDIX A
1.3.14. Standard	APPENDIX A
1.3.15. Supplier	APPENDIX A
1.3.16. Technical Administrator	APPENDIX A
1.3.17. Unintentional Contamination	APPENDIX A
2. CORE REQUIREMENTS	I.A.
2.1. **Traceability**	IV.A.
2.1.1. Each lot of Non-GMO Project-verified product…	IV.A.1.
2.1.2. Traceability records shall explicitly trace and track…	IV.A.2.
2.1.3. The producer/manufacturer must be prepared…	Consolidated in IV.A.
2.2. **Cleanout and Segregation**	IV.B.
2.2.1. Cleanout	IV.B.
2.2.1.1. Receiving, production, processing, manufacturing…	IV.B.1.
2.2.1.2. Procedures shall be appropriate to the operation…	Consolidated in IV.B.
2.2.2. Segregation	IV.B. and IV.B.3.
2.2.2.1. If the operation is not dedicated to Non-GMO…	IV.B.2.
2.2.2.2. Tracking of lot numbers and labeling/marking…	IV.A.3.
2.3. **Specifications for Inputs and Products**	VII.A.
2.3.1. For products enrolled in the PVP…	VII.A.1.
2.3.2. Preventive measures, as defined below…	Consolidated in IV.B.
2.3.3. The written specifications for all inputs and products...	VII.A.2.
2.3.4. Purchase and use of inputs shall be contingent on...	VII.A.3. - VII.A.3.c.
2.3.5. Release of products to the marketplace shall be…	I.B.3.
2.4. **Input Categories**	III.A.
2.4.1. **Non-Risk Inputs**	III.A.

Appendix D – Map of Version 11 to Version 12 (Hyperlinked)

Standard Version 11	**Standard Version 12**
2.4.1.1. Preventive measures for Non-Risk Inputs consist of...	III.A.
2.4.2. **Low-Risk Inputs**	III.A.
2.4.2.1. Preventive measures for Low-Risk Inputs	III.A.
2.4.2.1.1. Examining the specification sheet for compound…	III.A.
2.4.2.1.2. Verifying that the input was produced...	III.A.2.-III.A.2b
2.4.2.2. Monitoring of Low-Risk Inputs with suspected…	III.B.3.- III.B.3.b.
2.4.3. **High-Risk Inputs:** Crops and their derivatives...	III.A.
2.4.4. Participants shall undertake preventative measures...	Consolidated in III.A.
2.4.4.1. Examining the specification sheet of the input...	III.A.1.
2.4.4.2. Verifying that the input was produced under...	III.A.2.
2.4.4.3. Monitoring for GMO contamination...	III.A.3.
2.4.4.4. This number was omitted in v11 in error.	N/A
2.4.4.5. Compliance of animal products with the Standard…	III.A.
2.5. **Reclassification of Specific High-and Low-Risk...**	III.B.
2.5.1. A Low-Risk Input that is found...	III.B.2.- III.B.2.a.
2.5.2. On a case-by-case basis, certain High-Risk inputs may…	III.B.1-III.B.1.a. and VI.C.
2.6. **Action Thresholds** for High-Risk Inputs…	V.A. - V.A.3.
2.6.1. Compliance with Action Thresholds shall be verified…	Consolidated in section V.
2.6.1.1. Genetics-based testing using the Real-Time or Digital...	V.B. -V.B.1.
2.6.1.1.1. A statistically valid sampling and testing plan…	V.B.2 - V.B.2.b.
2.6.1.1.2. Statistical calculations can also be used to design…	V.B.3. - V.B.3.a.
2.6.1.1.3. Testing shall be carried out by a laboratory that is...	V.B.4.
2.6.1.1.4. Appropriate laboratory controls must indicate...	V.B.4.a.
2.6.1.1.5. Laboratory testing must target all commercialized...	V.B.5. - V.B.5.b.
2.6.1.2. Immunologically-based testing using strip tests.	V.C.-V.C.1.a.
2.6.1.2.1. A statistically valid sampling and testing plan…	V.C.2.
2.6.1.2.2. Analysts must be trained and their performance...	V.C.3.-V.C.3.a.
2.6.1.3. Supplier Affidavits. In cases where…	V.E. and V.E.4.
2.6.1.3.1. The affidavit must attest that the origin of the input...	V.E.2.
2.6.1.3.2. The affidavit must be signed by the manufacturer...	V.E.3.
2.7. **Verification of Livestock Products and Feed**	VI.A.
2.7.1. **Seed** used to grow crops for livestock feed	VI.A.1. - VI.A.1.a.
2.7.1.1. **Commercially purchased seed** planted for on-farm...	VI.A.1.b.
2.7.1.2. **Farmer-saved seed** and seed purchased...	VI.A.1.c.
2.7.2. **Commercially purchased feed**	VI.A.2.
2.7.2.1. **Commercially purchased feed for Certified Organic...**	VI.A.2.a.

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Standard Version 11	**Standard Version 12**
2.7.2.2. **Commercially purchased feed for Non-Organic...**	VI.A.2.b.
2.7.3. **Commercially produced feed**	VI.A.3. - VI.A.3.c.
2.7.4. **Onsite Inspections for farms and feed mills**	VI.A.4. - VI.A.4.c.
3. QUALITY ASSURANCE AND QUALITY CONTROL	VIII.
3.1. The Participant's quality assurance and quality control...	VIII.A.1.
3.1.1. Compliance with applicable requirements...	VIII.A.2.
3.1.1.1. Where needed, additional training shall be provided...	VIII.A.3.
3.1.1.2. Documents and forms shall be revised, as necessary…	VIII.A.4.
3.1.1.3. All documents, forms, reference materials…	VIII.A.5.
3.1.1.4. Records shall be retained for 3 years.	VIII.A.6.
3.2. Monitoring and control of key parameters relevant...	VIII.B.1.
3.2.1. Traceability	VIII.B.1.
3.2.2. Segregation	VIII.B.1.
3.2.3. Compliance with Action Thresholds	VIII.B.1.
3.2.4. Labeling	VII.B. - VII.B.3.
3.3. The Participant organization shall monitor and verify…	VIII.B.2.
3.4. The Participant organization shall monitor and verify...	VIII.B.2.
3.5. Corrective actions.	VIII.C. - VIII.C.2.
3.5.1. Major nonconformities shall be reviewed at the time…	VIII.C.3.-VIII.C.4. APPENDIX A
3.5.1.2. Timely root-cause analysis.	VIII.C.3.a. - VIII.C.3.b.
3.5.1.3. Corrective actions designed to improve the system…	VIII.C.3.c. - VIII.C.3.d. VIII.C.6.
3.5.1.4. Identification of nonconformities, corrective actions…	VIII.C.5.
3.5.1.5. Minor non-conformities shall be reviewed at the time…	VIII.C.7. & APPENDIX A
3.6. In addition to Participants, suppliers and contractors…	VIII.D.1. - VIII.D.1.b.
3.6.1. A Product Verification Program update shall be…	VIII.D.2.
4. TRANSITION PERIOD AND CONTINUOUS IMPROVEMENT	I.B.4.
4.1. During this transition period Participants will develop...	Consolidated in section I.B.
4.2. During this transition period, while the industry is…	Consolidated in section I.B.
4.3. Variances can, in principle, be applied to any aspect…	Consolidated/various
4.4. Individual Participants may choose to either operate…	Consolidated/various
4.5. For manufactured food and feed products, distinct…	II.A.
4.5.1. Major Ingredients, each of which represents 5%...	II.A.1. & APPENDIX A
4.5.2. Minor Ingredients, each of which represents at least...	II.A.2.
4.5.3. Micro Ingredients, each of which represents less than...	II.A.3.
APPENDIX A: Current Variances to the Standard	See Variances #1-10 below
Variance #1—Elevated Action Thresholds	V.A.1. - V.A.2.b.
Variance #2—Including on the list of crops with high risk...	III.A.
Variance #3—Exemptions from production facility review...	IV.C.2. - IV.C.2.c

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Standard Version 11	Standard Version 12
Variance #4—Temporary exclusion of all Micro Ingredients	II.B.3. - II.B.3.d.
Variance #5—Verification of Non-GMO Project compliance…	V.E.4.
Variance #6—Eliminated Spring 2010	Eliminated Spring 2010 (N/A)
Variance #7—Verification of inputs based on testing alone...	V.D.
Variance #8 – Temporary Exclusion of vaccines and...	II.B.2.
Variance #9 – Approval of a Participant's Co-Processed...	VIII.D.3.
Variance #10—"Made with" claims for certain products...	VII.B.2.-VII.B.2.e
APPENDIX B: List of Crops, […] with GMO Risk	APPENDIX B
APPENDIX C: Monitored Crops	APPENDIX C

Appendix E – Changes with extended compliance deadlines

- Synthetic biology: Participants must comply with the Standard's requirements for synthetic biology no later than June 15, 2016.

Summary of changes to Standard Version 12 (Hyperlinked)

Standard Section	Change
II.A.3.a and II.A.3.b	To improve clarity, moved section II.B.3 “Inputs that can be excluded from evaluation” to section II.A.3. Micro Ingredients. Created two new sections: Micro Ingredients that require evaluation and Non-Exempt Micro Ingredients, with corresponding clarifying changes.
II.B.3.a.ii.	Replaced “Microbial products that have no viable microbes, or functional enzymes, unless they exist in a purified form. Examples include cheese, bread, wine, beer, and fruit purees.” with “Ingredients that are direct products of GM microorganisms and are not in a purified form. Examples include yeast extracts and algal oils.”
II.B.	Changed title from “Inputs” to “Input Evaluation” to more clearly label the section content.
II.B.1.	Added “and enzymes” to the Input category list “Microbial starters *and enzymes*, media, and products.”
II.B.2.	Separated “Seeds” into its own Input category.
II.C.	In the Comment section for Processing, replaced "movements, storage, transformations, combining, or labeling of goods" with the more common terminology used in industry: "conveyance, storage, processing, handling, assembly, or packaging."
III.A.	In the Required preventative measures column, replaced the term “specification sheet” with “complete ingredient disclosure.”
III.A.2.	In the Required preventative measures column for Low-Risk, item 2 and 2.b., replaced the word “Input” with “Product.”
IV.C.2.	Deleted “production facility review” and added the language “unless the TA finds cause for inspection.”
IV.C.2.c.	Added “the specific” to the following section: “Products produced in a facility where there is no parallel processing of *the specific* High-Risk Inputs used in those products.”
V.A.1.	Increased Action Threshold for animal feed and supplements to 5% based on the annual average of all tested lots.
V.B.2.b.	Reworded last sentence in this section to “When achieving this level of confidence through crop sampling cannot be done without destroying the consumer product (e.g. for large crops such as sweet corn on the cob, zucchini and papaya), the testing program may be shifted to the seed level with limited post-harvest spot testing.”

V.B.4.	Replaced "Accredited" with "Approved" and added URL as follows: Approved laboratories Testing shall be carried out by a laboratory that is accredited to ISO17025, approved by the Non-GMO Project, and uses methods that are included within the scope of their ISO17025 accreditation, for the crops/inputs in question. http://www.nongmoproject.org/product-verification/about-gmo-testing/accredited-labs-and-resources/.
V.C.1.a.	Replaced the word "large" with "significant" when referring to concern over ramifications of false negatives of lateral flow strip tests.
VI.A.	Deleted the word "major."
VI.A.2.	Reworded introduction for Commercially purchased feed to "*Compliance of commercially purchased feed shall be demonstrated through evaluation of Major Ingredients, including testing of High-Risk Major Ingredients.*"
VI.A.2.a. and VI.A.2.b.	Added "High-Risk" to first sentence under Testing methodology, "The testing method must yield valid results for all Major *High-Risk* Ingredients."
VI.A.2.b.	Set lifecycle requirements for "*Dairy animals and laying hens: 30 days prior to verification and continuously thereafter."*
VI.A.3.	Reworded introduction to Commercially produced feed, "*Compliance of commercially produced feed shall be demonstrated through evaluation of Major Ingredients, including testing of High-Risk Major Ingredients.*"
VI.A.3.a.	Added "High-Risk" as follows, "*The testing method must yield valid results for all Major High-Risk Ingredients."*
VI.B.1.a.	Clarified that certain exemption from inspection, per Section IV.C.2, may also be applied for restaurants.
VI.C.	Clarified the requirements for verification of Honey and Bee Products: forage area of 4 mile radius free from GM commercial agriculture and non-forage feed must be evaluated for compliance with the Standard.
VII.A.3.	Reworded spot purchasing requirements for greater clarity, "If a spot purchase *of unverified input is made*, the Participant must justify to the Technical Administrator why *a* verified input was not used. Spot purchases of unverified inputs are *only* allowed on the following basis:"
VIII.D.2.	Clarified that annual renewal refers to re-evaluation of every verified product.
VIII.D.3.	Replaced the language "Acknowledging pre-existing contracts" with "Participants with contract processors" and delete the word "pre-existing" from the second sentence in the introduction.

VIII.D.3.	Clarified that all contract-processing facilities that meet the requirements of Section VIII.D.3. are exempt from inspection for a maximum of 3 years.
Appendix A	Added definitions for Enzyme, Functional Enzyme, Growth Media, Microbe, Substrate, Viable Microbe.
Appendix A	Rewrote the definition to provide clarity for "*Parallel processing – The practice of using the same facility for handling both Non-GMO Project compliant and non-compliant inputs or products.*"
Appendix B. B.	Added "*seafood from aquaculture*" to High-Risk animal derivatives.
Appendix B. D.	Added "*algae from aquaculture*" to High-Risk Microbes and microbial products.
Appendix B. E.	Added "*synthetic biology products*" to High-Risk processed/processing inputs and ingredients.
Appendix E	Added appendix for extended compliance.