Non-GMO Project Standard

Biennial public comment periods on the Standard in its entirety are held for 60 days beginning in April of even years (e.g., 2020, 2022). 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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1 Introduction

The Non-GMO Project is a nonprofit organization whose mission is to preserve and build sources of non-GMO products, educate consumers, and provide verified non-GMO choices.

In support of our mission, the Non-GMO Project offers a Product Verification Program (PVP) whereby Participants may enroll wholesale and retail consumer goods as Products for evaluation against, and determination of compliance with, the Non-GMO Project Standard. The PVP also includes a written agreement between the Participant and the Non-GMO Project, and where applicable, a written agreement between the Participant and one or more Technical Administrators (TAs). If all elements of the PVP are satisfied, including meeting the compliance requirements set forth by the Non-GMO Project Standard, Products may attain Non-GMO Project Verification.

To monitor compliance with the PVP, the Non-GMO Project maintains surveillance and auditing programs. The surveillance program routinely tests Verified Products for compliance with the Action Thresholds outlined in the Non-GMO Project Standard. The auditing program is in place to ensure that the appropriate supporting documentation associated with Verified Products is on file and fulfills the requirements of the PVP.

Hereafter the Non-GMO Project will be referred to as "the Project" and the Non-GMO Project Standard as "the Standard."

English is the original and official language of this Standard. Terms defined in Appendix A and used in this Standard are capitalized throughout. Requirements listed under headers titled "Global Requirements" apply to the entirety of the section in which they appear (e.g., v15 Section 4.2, Global Chain of Custody Requirements, applies to all of v15 Section 4).

1.1 Purpose

The purpose of the Standard is to offer meaning and value to the marketing claim "Non-GMO Project Verified" by creating, maintaining, and keeping publicly available, a set of rigorous requirements against which all Non-GMO Project Verified Products are measured.

1.2 Methodology and Approach

The Project's PVP is based on a practice and process-oriented Standard that uses both testing and Affidavits as key strategic tools to confirm that practices and processes meet expectations.

Continuous improvement on the part of Participants is required with the common goal of eliminating any GMO-risk Inputs and Ingredients from their supply chains.

A Product is a unique branded formula and process, where process could be either the manufacturing or facility process. "Product" refers to Products that are involved in the PVP.

The breadth and depth of Product evaluation is informed by the nature of the Inputs and Ingredients that are represented in, or present in, the Product formulation. Inputs and Ingredients are classified according to three attributes: 1) weight percentage as represented in, or present in, the Product, 2) likelihood that they are derived from a Genetically Modified Organism (GMO), and 3) whether a testable precursor exists at any point in the supply chain.

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These three attributes are termed Weight Percentage, Risk Status, and Testability, respectively. Compliance of all Inputs and Ingredients associated with a Product, and whose evaluation is mandatory, is required for verification.

Activities occurring along the chain of custody (CoC) for Products and their Ingredients and Inputs are reviewed for compliance with the Segregation, Cleanout, Traceability, and Quality Assurance requirements outlined in this Standard. Products must comply, on an ongoing basis, with the Labeling requirements outlined in this Standard and cannot carry competing claims or 100% GMO absence claims.

While requiring the compliance of all Inputs and Ingredients to Products, the PVP is highly focused on Products, Ingredients, and Inputs that are likely to be, or be derived from, GMOs. Testable High-Risk Products, Ingredients, and Inputs must comply with the appropriate Action Threshold and Non-Testable High-Risk Products, Ingredients, and Inputs must comply with Affidavit requirements.

Addressing contamination of seed is a stated priority of the Project. Although traceability back to tested seed is not required for Product verification in general, the Project is actively developing sources of compliant seed as the basis for a sustainable Non-GMO supply chain.

In summary, all Project Verified Products must have systems in place for:

- **Labeling:** Accurate and clear Product labeling
- **Quality assurance:** Maintaining operational consistency and addressing Nonconformities promptly
- **Procurement:** Obtaining Inputs and Ingredients in accordance with uniform and meaningful specifications
- **Testing:** Meaningful, ongoing testing of Major High-Risk Inputs and Ingredients
- **Segregation and Cleanout:** Protecting compliant Inputs and Ingredients from commingling with non-compliant materials
- **Traceability:** Supply chain traceability, especially following Input and Ingredient testing or the establishment of a compliant Affidavit

2 Scope

The scope of the Standard and the PVP encompasses the following Product categories, including their Inputs, Ingredients, and Activities.

2.1 Product Categories

2.1.1 The following types of wholesale or retail goods are eligible for verification:

2.1.1.a Seed and vegetative propagation materials

2.1.1.b Wholesale or retail goods for human or pet use that are either ingested or topically applied

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2.1.1.c Over the counter (OTC) drugs and homeopathic remedies

2.1.1.d Wholesale or retail goods for human or pet use that are not ingested or topically applied

2.2.1.e Livestock, poultry, bee, and seafood feed and supplements

2.1.2 The following types of goods are ineligible for verification as Products under this Standard:

2.1.2.a Controlled substances under U.S. or Canadian law and all other prohibited Inputs and Ingredients listed under Section 2.2.3

2.1.2.b Goods that are not sold in the U.S. or Canada

2.1.2.c Certain medicines and other medical products

2.1.2.d Live animals

2.1.2.e Synthetic pesticides

2.1.2.f Goods composed entirely of Non-Risk Inputs and Ingredients and that are part of a Non-Risk Category

2.1.2.f.i Non-Risk Categories include, but are not limited to, unflavored still beverages, unflavored carbonated beverages, and unflavored electrolyte beverages

2.2 Input and Ingredient Evaluation

2.2.1 **Mandatory Input and Ingredient categories** (Input and Ingredient categories to Product formulations that must be evaluated and found compliant):

2.2.1.a Seeds and vegetative propagation materials ONLY when the same seeds or vegetative propagation materials are the Products seeking verification.

2.2.1.b All Inputs and Ingredients represented in, or present in, the Product formulation from the following categories must comply with the requirements of this Standard in order for the finished Product to be verified.

2.2.1.b.i Unprocessed raw agricultural materials such as vegetables, grains, fruit, greens, herbs, other fresh foods, fibers, etc.

2.2.1.b.ii Manufacturing Inputs and Ingredients, including flavorings, seasonings, colorings, additives, and all other substances present in final, manufactured Products.

2.2.1.b.iii Animal derivatives including dairy, meat, eggs, wool, hides, derivatives of apiculture including, but not limited to, honey and beeswax, and derivatives of seafood.

2.2.1.b.iv Processed agricultural Inputs and Ingredients

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2.2.1.b.v Packaging that is directly immersed or combined with liquid for the purpose of making the Product available for human consumption including tea, coffee, spice, and soup bags but not including any part of the packaging other than the bag.

2.2.1.b.vi Rations and supplemental feed for livestock, poultry, and other animals

2.2.1.c Other Inputs and Ingredients used in personal care and cosmetic Products, and textiles

2.2.1.d Dietary supplements, vitamins, and herbal preparations

2.2.1.e Microorganisms, enzymes, and growth media

2.2.1.f Processing Aids present in the finished Product at 0.5% or more

2.2.1.g Processing Aids listed on the Ingredient panel of a retail consumer good, or Input/Ingredient disclosure documentation of a wholesale consumer good

2.2.2 **Input and Ingredient categories that are out of scope of this Standard** (Input and Ingredient categories that do not affect the evaluation of the overall Product formulation including Weight Percentage, Risk Status, and Testability, do not need to be evaluated, and do not need to demonstrate compliance with this Standard):

2.2.2.a Processing Aids used in the manufacture or processing of a finished Product, Ingredient, or Input shall be out of the scope of review if present in the finished Product at less than 0.5% and not declared on the retail Ingredient panel or the Input/Ingredient disclosure documentation of a wholesale Product. For the purposes of this Standard, fermentation Microorganisms are not considered to be Processing Aids.

2.2.2.b Purified carbon dioxide (CO_2) from either biological or non-biological sources

2.2.2.c Fully composted materials and animal manures not sourced from GM animals

2.2.3 **Prohibited Inputs and Ingredients:**

2.2.3.a Controlled substances under U.S. or Canadian law

2.2.3.b Recombinant bovine growth hormone (rBGH)

2.2.3.c Recombinant bovine somatotropin (rBST)

2.2.3.d Genetically modified animals including those that are cloned, and their progeny

2.2.3.e Manure sourced from genetically engineered animals

2.2.3.f Synbio and its derivatives

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Deleted: , and derivatives, including those used for livestock feed (e.g., silage or hay inoculants, fermentation solids, or similar products) or human food

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Deleted: **Eligible input** categories (input categories for optional evaluation):In addition to the finished product, Participants may choose to verify inputs in the following categories in order to market them with reference to the Non-GMO Project verification mark or name. Verification of inputs listed in this Section II.B.2. is not required in order for a product to be verified. When the product itself, as opposed to an input to another product, the inputs below must be verified in accordance with this Standard and are not optional. In order for the following inputs themselves to be marketed with reference to the Non-GMO Project verification mark 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."). ¶
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 ...

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3 Input and Ingredient Classification

Each Input and Ingredient must be classified in accordance with this Section 3 and meet all applicable requirements under this Standard to be included in a verified Product.

3.1 Weight Percentage

All Inputs and Ingredients must be classified according to their Weight Percentage as represented in, or as present in, the finished Product, not counting the weight of salt or added water present in the finished Product. Excluded from the Weight Percentage calculation are: 1) Processing Aids present in the finished Product at less than 0.5% and not declared on the retail Ingredient panel or the Input/Ingredient disclosure documentation of a wholesale Product, and 2) purified CO_2.

For animal feed other than pet food, the Weight Percentage categories below are calculated based on the weight of the Input as a percentage of the Ration fed to the animal. Per Section 8.1, some Minor and all Micro Inputs of livestock and poultry Rations are exempt from evaluation.

Unless a Verified-Status Ingredient, the Inputs to each Major or Minor Ingredient must be classified and evaluated back to the point in the supply chain where they can be confirmed compliant with the Standard's requirements. If the Ingredient is classified as an exempt Micro Ingredient per Section 3.1.3.a, no further breakdown or classification is required.

3.1.1 **Major Inputs and Ingredients**, each of which represents, or is present as, 5% or more of the finished Product.

3.1.2 **Minor Inputs and Ingredients**, each of which represents, or is present as, at least 0.5% but less than 5% of the finished Product.

3.1.3 **Micro Inputs and Ingredients**, each of which represents, or is present as, less than 0.5% of the finished Product. The depth of evaluation for these Ingredients, including application of the limits in Section 3.1.3.a below, shall be limited to the organism from which they were derived, as opposed to growth medium or feed.

3.1.3.a **Micro Exemption.** Micro Ingredients not listed in Section 3.1.3.b directly below may be exempt from evaluation provided that any given Product does not contain more than 0.9% total Exempt Micro Ingredients, by Weight Percentage. Until May 20, 2019, a Product may contain up to 10 Exempt Micro Ingredients.

3.1.3.b **Micro Ingredients ineligible for Micro Exemption.**

3.1.3.b.i **Viable Microorganisms** and **Functional Enzymes** are not eligible for Micro Exemption if they are the result of Biotechnology, 1) For finished retail goods, if they are listed on the Ingredient panel; or 2) For goods sold without retail labeling, if they are listed on the Input/Ingredient disclosure documentation.

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3.1.3.b.ii **Defining Ingredients**, each of which are both present in the finished Product AND present on the Principal Display Panel of the finished Product. Flavors, Microorganisms, and Enzymes are not considered to be Defining Ingredients.

3.2 Risk Status

All Inputs and Ingredients must be classified according to their Risk Status. Risk Status denotes the likelihood that an Input or Ingredient is, or was derived from, a GMO. In order to focus the PVP on Inputs and Ingredients at risk for GMO contamination throughout the CoC, the Standard recognizes five Risk Statuses (Table 3-1).

Table 3-1. The Five Risk Statuses

Risk Status	Definition
Verified-Status	Products that have been verified under the PVP at wholesale or retail and are purchased for use as Inputs or Ingredients to different Products enrolled in the PVP.
High-Risk (see Appendix B)	Organisms and the Inputs and Ingredients derived from them for which GMO counterparts are widely commercially available.
Monitored-Risk (see Appendix C)	Organisms and the Inputs and Ingredients derived from them for which GMO counterparts are in the research and development stages, which have been developed but are not widely commercially available, or for which known GMO contamination has occurred.
Low-Risk	Organisms and the Inputs and Ingredients derived from them that are not classified as Monitored-Risk or High-Risk.
Non-Risk	Inputs and Ingredients that are not derived from biological organisms and are not, therefore, susceptible to Genetic Modification.

3.3 Testability

Inputs and Ingredients are either Testable or Non-Testable. Testable Inputs and Ingredients have a point in the supply chain where the Input or Ingredient contains sufficient intact deoxyribonucleic acid (DNA) or protein to return a valid polymerase chain reaction (PCR) result or immunological test result, and PCR tests or immunological tests are publicly commercially available to cover all events for which the Project requires testing. Non-Testable Inputs and

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Deleted: 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 demonstrating consistently low risk of GMO contamination (in accordance with this Standard). Individual inputs may only be downgraded by the TA with the approval of the Non-GMO Project.

Deleted: a. An example would be cornstarch produced in a country where GMOs are prohibited, Non-GMO Project Standard compliant seed was confirmed as having been used, and documented identity preservation (IP) procedures are in place for the manufacture and transport of the input.

Deleted: 2. . **From High-Risk to Verified-Status:**¶
High-Risk Inputs that have been verified under the Program as Verified Products (also referred to as Verified-Status Inputs) are subject to a modified evaluation, as described in Section III.A.

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The Project maintains a surveillance program, one purpose of which is to evaluate GM risk and GM content on a Project-wide basis, using cumulative data. Using data from the surveillance program, the Project may re-classify a Low-Risk Input classified as a High-Risk Input. In such case, the verification of the input shall be carried out according to the requirements for High-Risk Inputs.

Ingredients do not currently have such publicly commercially available tests. Some crops are both Testable and Non-Testable according to the above criteria.

For Testable High-Risk Inputs and Ingredients other than animal feed, PCR is the only acceptable testing methodology. For Testable High-Risk Inputs to animal feed, either PCR or immunological tests may be used to demonstrate compliance with the Action Threshold.

Inputs and Ingredients from animals for which there are no commercially available GM counterparts are considered Testable because the animals' feed may be Testable. Where commercially available GM counterparts for a specific animal do exist, Testability will be assigned separately to the animal and the feed Inputs, and the appropriate compliance pathways will apply.

3.4 Product Compliance by Input and Ingredient Classification

A full Input and/or Ingredient disclosure is required in most cases for Products, Ingredients, and Inputs. Table 3-2 summarizes the compliance pathways available to Verified-Status, Monitored-Risk, Low-Risk, and Non-Risk Inputs and Ingredients. The compliance pathways of these four Risk Statuses are unaffected by Weight Percentage in the finished Product and Testability. Table 3-3 summarizes the compliance requirements of Defining Ingredients, which are influenced by Weight Percentage in the finished Product and Testability. Table 3-4 summarizes the various compliance pathways for Testable and Non-Testable High-Risk Inputs and Ingredients when they are Products, Majors, Minors, and Micros.

Additional requirements may also apply to Products, Ingredients, and Inputs including those outlined in Section 9 and Section 10.

Table 3-2. Compliance of Verified-Status, Monitored-Risk, Low-Risk, and Non-Risk Inputs, Ingredients, and Products

Verified-Status
1. Provide a current and valid Certificate of Verification (COV) of appropriate scope 2. Provide proof of purchase 3. Comply with Section 4, Chain of Custody, from the point of the Participant's procurement to the finished Product 4. Comply with Section 5, Inspections, from the point of the Participant's procurement to the finished Product
Monitored-Risk
See requirements for Low-Risk.
Low-Risk
1. Comply with Section 4.3, Segregation. If the facility does not use any High-Risk Inputs or Ingredients, then demonstration of this fact is sufficient to fulfill this requirement **AND EITHER** 2. Comply with Section 7.5, Low-Risk Major, Minor, and Micro Inputs and Ingredients **OR**

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2. Components of the input do not need to be re-evaluated.¶
3. Comply with the traceability and segregation measures outlined in Section IV.¶

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Commented [A34]: Moved from v14.2 Section III.A., Table 2., Low-Risk, Required for Compliance

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2. Verify that the input was produced under conditions designed to avoid cross-contamination with genetically modified (GM) materials.¶

Deleted: 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 Input from potential sources of High-Risk contamination within the facility.¶

Table 3-2. Compliance of Verified-Status, Monitored-Risk, Low-Risk, and Non-Risk Inputs, Ingredients, and Products

3. Provide a complete Input and Ingredient disclosure
Non-Risk
1. Comply with Section 7.6, Non-Risk Major, Minor, and Micro Inputs and Ingredients **OR** 2. Provide a complete Input and Ingredient disclosure

Note: Inputs and Ingredients from the Verified-Status, Monitored-Risk, Low-Risk, and Non-Risk Risk Statuses have the same compliance pathways regardless of Weight Percentage as represented in, or present in, the Product, and regardless of Testability.

Table 3-3. Compliance of Defining Ingredients

Defining Ingredient
Major
1. Comply with Standard requirements as a Major Ingredient based on the combination of Risk Status and Testability
Minor
1. Comply with Standard requirements as **EITHER** a. A Major Ingredient **OR** b. A Minor Ingredient based on the combination of Risk Status and Testability
Micro
1. Comply with Standard requirements as **EITHER** a. A Major Ingredient **OR** b. A Minor Ingredient **OR** c. Based on the combination of Risk Status and Testability, comply as a Micro Ingredient under Section 7.2 or Section 7.3 2. Defining Ingredients present in the finished Product as Micros are ineligible for Micro Exemption under Section 3.1.3.a and must be Non-GMO

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Deleted: Examine the complete input disclosure for compound inputs, including all components of the input in question, to confirm the absence of components with GMO risk.¶

Table 3-4. Compliance of Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients

Product/Major	Minor	Micro
Testable High-Risk		
1. Submit a complete Input and Ingredient disclosure **AND** 2. Comply with Section 4, Chain of Custody 3. Comply with Section 5, Inspections **AND EITHER** a. Comply with Section 6, Sampling and Testing **OR** b. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin	1. Submit a complete Input and Ingredient disclosure **AND** a. Comply as a Product/Major **OR** b. Comply with Section 7.3, Testable High-Risk Minor and Micro Inputs and Ingredients	1. Comply as a Product/Major **OR** 2. Comply as a Minor **OR** 3. Comply with Section 3.1.3, Micro Inputs and Ingredients
Product/Major	**Minor**	**Micro**
Non-Testable High-Risk		
1. Submit a complete Input and Ingredient disclosure **AND** 2. Comply with Section 4, Chain of Custody 3. Comply with Section 5, Inspections 4. Comply with Section 7.2, Non-Testable High-Risk Inputs and Ingredients	1. Submit a complete Input and Ingredient disclosure **AND** 2. Comply with Section 4, Chain of Custody 3. Comply with Section 5, Inspections 4. Comply with Section 7.2, Non-Testable High-Risk Inputs and Ingredients	1. Comply as a Product/Major **OR** 2. Comply as a Minor **OR** 3. Comply with Section 3.1.3, Micro Inputs and Ingredients

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4 Chain of Custody

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Project compliant Products, Ingredients, and Inputs must maintain their integrity while being moved through various Activities along the CoC. CoC requirements apply from the point of testing or compliant Affidavit forward to the finished Product.

4.1 Activities

CoC requirements apply beginning at the point of testing or procurement of compliant Affidavits. When relevant to the verification of the Product, the following Activities are subject to review and must be found compliant with the Standard (Table 4-1).

Table 4-1. Activities Along the Chain of Custody

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 CoC from seed to consumer, except for Products enclosed in final retail packaging
Storage	Includes all links in the CoC 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
Manufacturing	Involves the production, and combination of, Inputs and Ingredients to make the finished Product
Packaging and labeling	Includes any and all events where the package or labeling of goods is added, removed, or altered

4.2 Global Chain of Custody Requirements

4.2.1 All required procedures must be written and accessible to all appropriate staff and updated as necessary.

4.2.2 All appropriate staff working with compliant Inputs, Ingredients, and Products shall be adequately trained in the required procedures.

4.2.3 All records shall be maintained for a minimum of 3 years.

4.3 Segregation

4.3.1 Systematic procedures shall be in place during Activities to keep compliant Inputs, Ingredients, work in progress, and finished Products separate from all non-compliant High-Risk materials.

4.3.2 Segregation measures are also required for instances where any required testing occurs after the Input or Ingredient in question has entered the facility.

4.4 Cleanout

4.4.1 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.

Commented [A37]: Moved from v14.2 Section II.C.

Deleted: The scope of the evaluation encompasses the following types of activities and sectors of food and related production systems.

Commented [A38]: Moved from v14.2 Section II.C.

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Commented [A39]: Moved from v14.2 Section IV.B.2. and IV.B.3.

Deleted: (e.g., when a Participant, rather than an ingredient supplier, is taking responsibility for testing).

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4.5 Traceability

4.5.1 Each lot of Verified Product must be traceable back to specific lots of the Inputs and Ingredients used in its production. If lots of compliant Inputs and/or Ingredients are commingled 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.

4.5.2 Testable High-Risk Inputs and Ingredients must be traceable back to the lots that demonstrate compliant test results. Non-Testable High-Risk Inputs and Ingredients must be traceable back to the lots associated with compliant Affidavits.

4.5.3 Systematic procedures shall be in place for tracking lot numbers and/or marking and labeling of packaging, containers, and storage facilities to ensure traceability of Inputs, Ingredients, work-in-progress, and finished Products at all points in the production process.

4.5.4 Traceability records shall explicitly trace and track the compliant status of Inputs, Ingredients, and finished Products.

5 Inspections

5.1 Producing Facilities are required to be inspected annually when Parallel Processing of the same Major High-Risk Input or Ingredient to a Product is occurring.

5.2 Unless the TA finds cause for inspection, inspections are not required for:

5.2.1 Products in which there are only Low-Risk Inputs and Ingredients.

5.2.2 Products in which the only Low-Risk and/or High-Risk Inputs and Ingredients are Minors or Micros compliant with Section 7.

5.2.3 Products produced in a facility where there is no Parallel Processing of the same Major High-Risk Inputs and Ingredients used in those Products.

5.3 Contract processors that are not Participants are exempt from inspection through December 31, 2020.

5.4 At the TA's discretion, unannounced inspections may be used to ensure compliance with this Standard.

6 Sampling and Testing

All High-Risk Inputs and Ingredients must comply with the relevant Action Threshold through either this Section 6 or Section 7, unless otherwise allowed by a different section of this Standard. The combination of Weight Percentage, Risk Status, and Testability determines the

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Deleted: 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.

Deleted: D. . Cleanout and Segregation¶
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.

Deleted: <#>Systematic procedures shall be in place during production to keep compliant inputs, work in progress, and finished products separate from all materials that are not compliant with the Non-GMO Project Standard.¶
<#>Segregation measures are also required for instances where any required testing occurs after the input in question has entered the facility (e.g., when a Participant, rather than an ingredient supplier, is taking responsibility for testing).¶

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Deleted: facility is exempt from inspection by an applicable part of this Standard, all facilities

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Deleted: Products of a facility that is dedicated to certified organic production, if no parallel processing of the specific Major High-Risk Inputs is occurring in the facility.

Deleted: that comply with the requirements of Section IX.E.2. The contract processor's exemption from inspection under this Section IX.E.2. expires after 3 years, unless otherwise exempt from inspection. After that point, the Participant must EITHER:

Deleted: <#>Adopt a defined plan for bringing contract processor into full participation in the Product Verification Program and full standard compliance within a defined time frame; OR¶
<#>Submit to a facility survey and onsite inspection for contract operations. Such inspections shall be completed by an approved inspector.¶

pathways available for the demonstration of compliance with the relevant Action Threshold. Refer to Tables 3-2, 3-3, and 3-4 for summaries of the appropriate compliance pathways.

6.1 Action Thresholds

Absence of all GMOs is the target for all Verified Products. Continuous improvement practices toward achieving this goal must be part of the Participant's quality assurance systems. A key outcome of such quality assurance systems is to meet or continually be below the applicable Action Threshold. Testable High-Risk Inputs and Ingredients that do not comply with the applicable Action Threshold may not be intentionally used in Verified Products, unless otherwise allowed by a different section of this Standard.

The Non-GMO Project has established the following Action Thresholds for Testable High-Risk Inputs and Ingredients (Table 6-1).

Table 6-1. Action Thresholds

Category	Action Threshold[a]
Seed and vegetative propagation materials	0.25%
Wholesale or retail goods for human or pet use that are either ingested or topically applied including over the counter drugs and homeopathic remedies	0.9%
Livestock, poultry, bee, and seafood feed and supplements, including those used for animal-derived Inputs and Ingredients to all Products	5%[b]
Wholesale or retail goods for human or pet use that are not ingested or topically applied including, but not limited to, Inputs and Ingredients to packaging, cleaning supplies, and textiles	1.5%

[a] For all crops not listed in Appendix B.1.1 and Appendix C.1.1, there is no allowable presence.

[b] ~~This Action Threshold is based on the annual average of all lots tested.~~

6.2 Global Sampling Requirements

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

6.2.1.a The sampling and testing plan must be approved by the TA prior to the submission of any test results acquired on the basis of said sampling and testing plan.

6.2.1.b Unless otherwise allowed by a different section of the Standard, compliant sampling and testing must occur at least once post-harvest for all Inputs and Ingredients, depending on contamination risks.

Deleted: For use in a Verified Product, compliance with this Section V. is required for (1) Testable High-Risk Major or Minor Ingredients; (2) High-Risk Inputs present in feed of an animal-derived Major or Minor Ingredient;[8] and (3) Testable High-Risk Inputs present in the growth medium or feed of microbial Major or Minor Ingredients[9] (collectively referred to as "Testable High-Risk Inputs").[10] In order to be considered compliant under the Non-GMO Project Standard, tested samples are required to have sufficiently intact deoxyribonucleic acid (DNA).

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Deleted: Inputs to human food, ingredients, supplements, personal care products, and other products that are either ingested or applied directly to skin, and pet food

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Commented [A43]: The Non-GMO Project is considering eliminating the annual average pathway currently available for Testable Major High-Risk Inputs/Ingredients to feed rations. PLEASE CLICK HERE TO COMMENT (Questions 1 and 2).

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Deleted: Risk assessment and monitoring must be done according to a

Deleted: Sampling plans must be designed to achieve 90% confidence in quantification of GMO at or below the applicable Action Threshold.

6.2.1.c When achieving statistical validity through crop sampling cannot be done without destroying the consumer product, the TA may shift testing to the seed level with limited post-harvest spot testing.

6.2.2 Compositing samples

Statistical calculations can also be used to design compositing strategies through which portions of multiple samples can be combined and tested together to reduce the number of tests required.

6.2.2.a Compositing must be done in a manner that ensures that any single sample in excess of the relevant Action Threshold produces a positive result for the composite sample as a whole. If a result is obtained for the composite which indicates that one or more single samples exceeds the relevant Action Threshold, the lot must be rejected, or if sub-lots were segregated and not commingled, then retesting of individual lot samples may be possible to salvage compliant lots.

6.3 Global Testing Requirements

6.3.1 Participants must demonstrate compliance with the applicable Action Threshold.

6.3.2 Compliance must be demonstrated by ensuring that each lot of Testable High-Risk Input or Ingredient is compliant with this Section 6 prior to its use in a Verified Product.

6.3.3 The sample Matrix must be appropriate for the testing method to yield valid results. If necessary, the precursor from which the Input or Ingredient was derived must be tested.

6.3.3.a All GM events for which the Project requires testing must be tested for and the results must be conclusive.

6.3.3.b Test results must be traceable back to the lot number(s) of the precursor, Input, or Ingredient.

6.3.3.c From the point of testing forward, the Activities associated with the precursor, Input, or Ingredient must comply with Section 4.

6.3.4 Test results must be submitted to the TA for review prior to initial verification to ensure compliance with the applicable Action Threshold.

6.3.5 All test results from the preceding year must be submitted to the TA for review at annual renewal to ensure continued compliance with the applicable Action Threshold.

6.3.6 In cases where the requirements of Section 6.1 are demonstrated to be problematic to achieve for every lot, compliance may be demonstrated by ensuring that test results for all lots of High-Risk precursor, Input, or Ingredient used during each 6-month period average at or below the relevant Action Threshold, with no single lot of precursor, Input, or Ingredient ever exceeding the relevant Action Threshold by more than a factor of two.

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Deleted: an IP system is in place to ensure the given lot of the input and precursor (if applicable) in question has not been exposed to any other GM material. All such systems are subject to review and must be approved by the TA.

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Commented [A51]: The Non-GMO Project is considering applying a sunset date of December 31, 2019 to the compliance pathway set forth in Section 6.3.6 of the redline of v14.2 of the Standard. PLEASE CLICK HERE TO COMMENT (Question 3).

6.3.6.a Planting seed, vegetative propagation materials, and livestock, poultry, bee, fish, and other animal feed cannot demonstrate compliance via Section 6.3.6.

6.3.6.b The Participant is responsible for ongoing monitoring of test results to ensure compliance for each 6-month period. Test results in excess of a factor of two trigger a Major Nonconformity.

6.3.6.c This compliance pathway is available until [Insert Sunset Date Here], after which all lots of Testable High-Risk precursor, Input, or Ingredient must comply with Section 6.1, unless specified elsewhere in this Standard.

6.4 Molecular Testing Methods

6.4.1 Testable High-Risk Inputs and Ingredients shall be compliant with this Section 6.4 if all the following criteria are met:

6.4.1.a Appropriate laboratory controls indicate that the DNA of the precursor, Input, or Ingredient is sufficiently intact to allow valid quantitative analysis by PCR.

6.4.1.b The testing is conducted by an approved laboratory in compliance with Section 6.4.2, and the analysis report is issued by the same laboratory and references by lot number the specific lot of precursor, Input, or Ingredient, where applicable, used by the Participant.

6.4.1.c The PCR test shows that the GMO contamination of the precursor, Input, or Ingredient in question is at or below the relevant Action Threshold.

6.4.2 **Laboratories approved** by the Project must carry out testing, except in cases where Inputs and Ingredients are compliant with Section 7.4. Such laboratories are accredited to ISO 17025 and must use tests that are included within the scope of their ISO 17025 accreditation for the Testable precursor, Input, or Ingredient in question. Approved laboratories possess a Certificate of Approval and are listed on the Project's website.

6.4.3 **Laboratory testing** may employ quantitative, semi-quantitative, or qualitative PCR when the following requirements can be met:

6.4.3.a Quantitative PCR may be used to demonstrate compliance with the Action Threshold if:

6.4.3.a.i For each test panel conducted on a precursor, Input, or Ingredient, the sum of all test results is at or below the relevant Action Threshold.

6.4.3.b Semi-quantitative PCR may be used to demonstrate compliance with the Action Threshold if:

6.4.3.b.i Appropriate laboratory controls indicate that the DNA of the precursor, Input, or Ingredient is sufficiently intact to allow for valid quantitative analysis using PCR;

6.4.3.b.ii the upper limit of the range in which the result is reported must be at or below the relevant Action threshold.

Commented [A52]: Moved from v14.2 Section V.B.4.

Commented [A53]: The Non-GMO Project is considering applying a sunset date of December 31, 2019 to the compliance pathway set forth in Section 6.3.6 of the redline of v14.2 of the Standard. PLEASE CLICK HERE TO COMMENT (Question 3).

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Deleted: must target all commercialized GM events relevant to the input and the production system

Deleted: Where quantitative results are required, the Real-Time or Digital PCR test must employ primers sufficient to accurately quantify the percent GM content for that event.

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6.4.3.c Qualitative PCR may be used to demonstrate compliance with the Action Threshold if:

6.4.3.c.i The PCR limit of detection is 0.01%;

6.4.3.c.ii each test result for each Testable High-Risk precursor, Input, or Ingredient is negative;

6.4.3.c.iii should any test result be positive for a GM event, the Testable High-Risk precursor, Input, or Ingredient must be tested in compliance with Section 6.4.3.a or Section 6.4.3.b to demonstrate compliance with the Action Threshold.

6.5 Immunological Testing Methods

6.5.1 Immunological testing methods such as Enzyme-linked Immunosorbent Assay (ELISA) or lateral flow strip tests may be used in lieu of molecular testing methods to demonstrate compliance of animal feed (other than pet food) with the appropriate Action Threshold, when the methods meet the criteria in this Section 6.5.

6.5.2 **Analysts must be trained and their performance** established to ensure that they use the tests reliably and according to the manufacturer's specifications. Participants shall document the in-house training and evaluation of performance.

6.5.3 **In cases where immunological testing methods are permissible by this Standard**, they must cover all GM events for which the Project requires testing. Where all GM events for which the Project requires testing are not covered, samples must be tested in compliance with Section 6.4.

6.5.3.a Quantitative immunological methods may be used to demonstrate compliance with the Action Threshold when:

6.5.3.a.i The result for each assay must either be below the limit of detection, or return a number within the range of quantification, and cannot go above the upper limit of the range of detection;

6.5.3.a.ii the sum of each test panel for the Testable High-Risk precursor, Input, or Ingredient is at or below the relevant Action Threshold.

6.5.3.b Qualitative immunological methods may be used to demonstrate compliance with the Action Threshold when:

6.5.3.b.i Each test result per GM event per Testable High-Risk precursor, Input, or Ingredient is negative;

6.5.3.b.ii should any test results be positive, the Testable High-Risk precursor, Input, or Ingredient must be tested according to Section 6.5.3.a, Section 6.4.3.a, or Section 6.4.3.b to demonstrate compliance with the Action Threshold.

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Commented [A55]: The Non-GMO Project is considering whether the limit of detection (LOD) for qualitative PCR should vary depending on the product category; for example, should testing for GMO contamination in seeds require a different LOD than in crops? PLEASE CLICK HERE TO COMMENT (Question 4).

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7 Affidavits

Affidavits may be required in more than one situation to determine compliance with elements of the Standard.

7.1 Global Affidavit Requirements

7.1.1 All Affidavits must include the signature and the printed name of the party signing the Affidavit, and the date.

7.1.2 The party signing the Affidavit must have sufficient knowledge of the supply chain to authoritatively sign.

7.1.3 If appropriate, Affidavits should be accompanied by supporting documentation.

7.1.4 All Affidavits must be updated on an annual basis at time of Product renewal.

7.2 Non-Testable High-Risk Inputs and Ingredients

7.2.1 For Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients (identified in Appendix B.2), no point in the supply chain exists at which the non-GMO can be distinguished from its GMO counterpart using current testing methodologies. An Affidavit stating that any such Non-Testable High-Risk Major, Minor, or Micro Input or Ingredient is not the result of Biotechnology is required to establish compliance with this Standard.

7.2.2 For any Non-Testable High-Risk Major, Minor, or Micro Input or Ingredient, an Affidavit must be submitted to the TA for review prior to initial verification and upon renewal as required to ensure compliance with this Section 7.

7.2.3 Testable High-Risk Major Inputs and Ingredients listed in Appendix B.1 must be compliant with Section 6 or Section 7.4 and are not eligible for compliance through an Affidavit. Testable and Non-Testable High-Risk Inputs and Ingredients (listed in both Appendix B.1 and Appendix B.2), must comply with both Section 6 and this Section 7.

7.3 Testable High-Risk Minor and Micro Inputs and Ingredients

7.3.1 Testable High-Risk Minor and Micro Inputs and Ingredients may demonstrate compliance based on Affidavits as long as these Inputs and Ingredients are the result of a system that has been designed to avoid GMOs. Suitability of systems designed to avoid GMOs is subject to review by the TA with the approval of the Project.

7.3.2 When available, valid certificates from third-party certifiers are acceptable alternatives to Affidavits under this Section 7.3, when the third-party certification program satisfies the requirements for which an Affidavit would be used in Section 7.3.1.

7.3.2.a Except for honey and other derivatives of apiculture, Testable High-Risk Minor and Micro Inputs and Ingredients that are certified organic do not require an Affidavit.

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7.4 Affidavit Compliance Based on Geographic Origin[11]

7.4.1 The frequency or necessity of testing of certain Testable High-Risk crops and their Mono-input derivatives may be reduced by the TA with the approval of the Project based on an Affidavit.

7.4.2 The Affidavit must state that:

7.4.2.a Procurement procedures are in place throughout the supply chain requiring that the crop source or Mono-input derivative is grown strictly in specific geographic locations;

7.4.2.b No crop or crop-derivatives from outside that geographic location may be commingled; AND

7.4.2.c Procedures throughout the supply chain are in place for segregation, cleanout, and traceability of compliant materials from non-compliant materials.

7.4.3 When available, valid third-party IP certificates are acceptable alternatives to Affidavits when the third-party certification program satisfies the requirements for which an Affidavit would be used in Section 7.4.2.

Deleted: An example would be cornstarch produced in a country where GMOs are prohibited, Non-GMO Project Standard compliant seed was confirmed as having been used, and documented identity preservation (IP) procedures are in place for the manufacture and transport of the input.

7.5 Low-Risk Major, Minor, and Micro Inputs and Ingredients

7.5.1 Affidavits may be used to confirm compliance of Low-Risk Major, Minor, and Micro Inputs and Ingredients.

7.5.2 The Affidavit must attest to compliance with the requirement for classification as Low-Risk as described in Section 3.2, Table 3-1.

Deleted: Section III.A.

7.6 Non-Risk Major, Minor, and Micro Inputs and Ingredients

7.6.1 Affidavits may be used to confirm compliance of Non-Risk Major, Minor, and Micro Inputs and Ingredients.

7.6.2 The Affidavit must attest to compliance with the requirement for classification as Non-Risk as described in Section 3.2, Table 3-1.

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8 Special Requirements for Specific Products, Ingredients, and Inputs

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

[11] The Project maintains the list of geographic locations (and associated frequencies and necessities of testing) that comply with Section 7.4.2.

8.1 Livestock and Poultry

Livestock and poultry-derived Products, Ingredients, and Inputs are Testable and High-Risk. These Products, Ingredients, and Inputs comply with the sampling and testing requirements of the Standard through the sampling and testing of Inputs to the animals' Rations and/or the seed used to grow the Inputs to the animals' Rations. Feed Inputs to Rations must be classified based on their Weight Percentage within the Ration, Risk Status, and Testability. In all cases the animals cannot be GM nor can they have been treated with, nor have been derived from, Prohibited Substances listed under Section 2.2.3.

8.1.1 Compliance of Livestock and Poultry-derived Products, Ingredients, and Inputs

Livestock and poultry-derived Products, and livestock and poultry-derived Ingredients and Inputs to Products, are considered Testable High-Risk and have different compliance pathways depending upon their Weight Percentage as present in the finished Product. Table 8-1 outlines the compliance requirements for livestock and poultry-derived Products, Majors, Minors, and Micros when the livestock or poultry-derived good is, or is present in, the Product under evaluation.

Table 8-1. Compliance of Livestock and Poultry-derived Products, Ingredients, and Inputs

Livestock and Poultry-derived Products, Ingredients, and Inputs
Product/Major
1. Animals must comply with Section 8.1.2, Life cycle 2. Major Inputs to Rations are within the scope of review and must be found compliant with Table 8-2 3. Inputs to Ration formulations are classified based on the combination of Weight Percentage as present in the Ration formulation, Risk Status, and Testability 4. Major High-Risk Inputs to the Ration formulation must comply with: a. Section 4, Chain of Custody, b. Section 8.1, Livestock and Poultry, c. Section 8.1.8, Farm Inspections. 5. In addition to Ration compliance, the livestock or poultry-derived material must comply with: a. Section 4, Chain of Custody, b. Section 5, Inspections, c. Section 8.1.8, Farm Inspections, d. Section 9, Product Specifications and Labeling, and e. Section 10, Quality Assurance
Minor
1. Comply with Standard requirements as a Product/Major **OR** 2. Comply with Section 7.3, Testable High-Risk Minor and Micro Inputs and Ingredients (e.g., organic certification)

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Commented [A60]: The Non-GMO Project is considering requiring classification of Inputs/Ingredients to feed rations on a Dry Matter basis rather than an As-Fed basis. PLEASE CLICK HERE TO COMMENT (Question 3).

Table 8-1. Compliance of Livestock and Poultry-derived Products, Ingredients, and Inputs

Livestock and Poultry-derived Products, Ingredients, and Inputs
Micro
1. Comply with Standard requirements as either a Product/Major **OR** 2. Comply with Standard requirements as a Minor **OR** 3. All Inputs to Rations are outside the scope of review; comply with Section 3.1.3, Micro Inputs and Ingredients

8.1.2 Life cycle

Livestock and poultry-derived Products, Ingredients, and Inputs must be from animals that comply with the following life cycle feed guidelines:

- Meat animals, including culls (other than poultry): starting at birth (the feed of nursing mothers is not evaluated) and ending at slaughter
- Poultry: starting on the 2nd day after hatching and ending at slaughter
- Laying hens: starting 30 days prior to initial verification and for the remainder of the animal's productive life (including rest and molt periods)
- Dairy animals: 30 days prior to initial verification and for the remainder of the animal's productive life (including dry periods)

Animals cannot be intentionally cycled on and off compliant feed. The use of non-compliant Major Inputs to the animals' Rations triggers a Major Nonconformity. Removal of animals from a Non-GMO compliant herd for medical treatment is permitted, during which time their feed is out of the scope of review and their milk must not be collected for use in the Non-GMO supply chain. The animals must immediately resume Non-GMO compliant feed once treatment is concluded and may be returned to the herd.

8.1.3 Compliance of Feed Rations

The Weight Percentage of Inputs to Rations is calculated based on the weight of the Input as present in the Ration formulation.

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Deleted: Animal-derived Major Ingredients may be used in a verified product only if the feed of the animal from which the input is derived is compliant with this Section VII.A.

Deleted: Animal-derived Minor Ingredients may be used in a verified product either by demonstration of compliance with this Section VII.A. or by an affidavit that the animal-derived input is the product of a system that has been designed to avoid GMOs in compliance with Section VI.C.¶
Animal-derived Verified-Status Inputs must comply with Section VI.C. and are exempt from review.

Deleted: <#>Live animals may not be verified under this Standard.¶

Table 8-2. Compliance of Inputs to Rations for Livestock and Poultry-derived Products and Majors

Testable High-Risk		
Major	**Minor**	**Micro**
1. Sampling and testing must comply with Section 8.1.4, Section 8.1.5, Section 8.1.6, and Section 8.1.7, as applicable 2. Comply with Section 4, Chain of Custody, from the point of testing onward 3. Farming operations must comply with Section 8.1.8, Farm Inspections	1. A limited number or amount of Testable and Non-Testable High-Risk Inputs, by Weight Percentage as present in the Ration, are out of scope 2. Testable and Non-Testable High-Risk Inputs in excess of that number or amount comply with Section 7, Affidavits	1. Out of scope **OR** 2. Comply with Section 7, Affidavits
Non-Testable High-Risk		
Major	**Minor**	**Micro**
1. Comply with Section 7.2, Non-Testable High-Risk Inputs and Ingredients 2. Comply with Section 4, Chain of Custody, from the point of compliance with Section 7.2, onward 3. Farming operations must comply with Section 8.1.8, Farm Inspections	1. A limited number or amount of Testable and Non-Testable High-Risk Inputs, by Weight Percentage as present in the Ration, are out of scope 2. Testable and Non-Testable High-Risk Inputs in excess of that number or amount comply with Section 7, Affidavits	1. Out of scope **OR** 2. Comply with Section 7, Affidavits

Commented [A61]: The Non-GMO Project is considering how best to limit the number of Testable and Non-Testable High-Risk Minor Ingredients that are exempt from evaluation in feed rations. PLEASE CLICK HERE TO COMMENT (Questions 4 and 5).

Commented [A62]: The Non-GMO Project is considering how best to limit the number of Testable and Non-Testable High-Risk Minor Ingredients that are exempt from evaluation in feed rations. PLEASE CLICK HERE TO COMMENT (Questions 4 and 5).

8.1.4 Feed sampling

Feed grown from commercially purchased seed and commercially purchased or produced feed shall demonstrate compliance through the evaluation of, at minimum, Testable and Non-Testable Major Inputs to the animals' Rations. Ongoing testing of Testable High-Risk Major Inputs is required.

8.1.4.a Certified organic farming operations in which goods are pooled before final processing (e.g., dairy, ground meat, egg mixtures):

The sampling plan for certified organic operations shall be based on testing a composite sample of the High-Risk feed Inputs from a representative selection of farms, with the intention of identifying and addressing any contamination occurring in the Participant's operation. Farms shall be chosen based on the

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quarterly sampling density and selection requirements outlined in Table 8-3. Such sampling and testing shall be representative of the Participant's operations in a Region.

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8.1.4.a.i Regions

Regions must be designed such that farms within a Region are relatively similar and source their feed from the same or similar location(s). In order to inform the design of Regions, Participants should supply the TA with:

Commented [A63]: Moved from v14.2 Footnote 13

- farm locations within each state
- feed mill locations
- list of feed mills serving each farm
- processing facility locations
- proposed Regions

This basic documentation must be accompanied by a global rationale for what factors were considered in creating the different Regions, how the consideration of these factors leads to variation within the Participant's operation being captured among Regions, and how farms within a Region are more alike than different.

8.1.4.a.ii Quarterly sampling density and selection:

The number of farms within a Region determines the number of farms to be sampled. Fractions of farms are rounded up to the next whole number. Should a farm be chosen for sampling and testing and not have any Major High-Risk Inputs to sample and test onsite, another farm must be chosen at random from within that same Region.

Table 8-3. Quarterly Sampling Density Selection

Number of Farms per Region	Number of Farms to be Sampled and Tested
Fewer than 10 farms per region	minimum of 1 farm tested per region per quarter
10 to 20 farms per region	minimum of 2 farms tested per region
21 to 50 farms per region	10% of farms tested per region
51 to 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 TA and may be adjusted over time to provide the most technically sound basis for continuous improvement.

Deleted: 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.

Farms should retain a portion of each sample until test results come back compliant, in case re-testing is necessary or a sample tests above the Action Threshold and the Participant must seek the cause of contamination.

8.1.4.a.iii Ration Reporting within the Regional Model

All farms in the Participant's supply chain must be prepared to supply full Rations to TAs. Full Ration reporting may include all Rations fed annually from every farm that is part of the Participant's operation or, at minimum, must include the full Rations from the previous quarter and any additional Major High-Risk Inputs to the current Rations, if not captured in the previous quarter's Rations, of each farm randomly selected for sampling and testing by the TA. The Major High-Risk Inputs to the Rations must be evaluated and found compliant.

8.1.4.a.iv Testing within the Regional Model

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 of any significant changes in the frequency of GMO presence in feed Inputs, the percentage of samples exceeding the Action Threshold, and steps taken to secure feed that tests at or below the Action Threshold.

8.1.4.b Certified organic farming operations in which goods are not pooled (e.g., shell eggs, cut meat), and conventional farming operations;

The sampling plan for certified organic farming operations in which goods are not pooled and conventional farming operations may include either:

8.1.4.b.i Sampling of every incoming lot of Testable High-Risk Major Input, testing each sample in compliance with Section 6.5 by each farmer in the Participant's operations, and quarterly averaging of results to comply with the Action Threshold; **OR**

8.1.4.b.ii Sampling of every incoming lot of Testable High-Risk Major Input, compositing of samples, and quarterly testing of composite samples by each farmer in the Participant's operations in compliance with Section 6.2.2.

8.1.5 Testing methodology

The testing method must yield valid results for all Testable High-Risk Inputs. Immunological testing methods may be used when compliant with Section 6.5. Molecular testing methods compliant with Section 6.4 must be used where

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immunological testing methods cannot be used, and may be used in all cases in lieu of immunological testing methods.

8.1.6 Feed compliance based on use of compliant seed

Under certain circumstances, compliance of Livestock and poultry feed may be demonstrated based on use of compliant seed; in such cases post-harvest feed testing is not required. Neither compliant seed, nor feed derived from compliant seed, is eligible for verification under Section 8.1.6.a and Section 8.1.6.b.

8.1.6.a **Farmer-saved seed** and seed purchased from any neighboring farmer who does not have a retail seed operation must be tested annually. Frequency of testing should increase if there are any changes that would significantly increase the likelihood of contamination. Testing may be conducted in compliance with either Section 6.4 or Section 6.5. If testing is conducted in compliance with Section 6.5, and the immunoassay is positive for any event, samples must be re-tested with molecular testing methods per Section 6.4 to demonstrate compliance with the 0.25% Action Threshold. If the sample tests above the Action Threshold, it cannot be planted.

8.1.6.b **High-moisture Crops.** When post-harvest testing is not feasible for High-moisture Crops, compliance may be demonstrated through seed testing. In all cases, the grower must demonstrate traceability from the planted field to the harvested feed crop.

8.1.6.b.i When test results are available, each lot of seed planted must be compliant with Section 6 and test at or below the Action Threshold.

8.5.1.6.ii When test results are not available, each lot of seed planted must have a seed tag, an Affidavit from the seed supplier establishing that the seed is not the result of Biotechnology, and an invoice and Affidavit from the grower confirming planting location.

8.1.6.b.iii When Verified-Status seed is planted, each lot of seed must have the seed supplier seed tag, an invoice, and an Affidavit from the grower confirming planting location.

8.1.7 Feed Mills:

8.1.7.a Rations formulated by feed mills may be found compliant with Section 8.1 if:

8.1.7.a.i Every lot of Testable Major High-Risk Input to the Ration complies with Section 6.

8.1.7.a.ii Every lot of Non-Testable Major High-Risk Input to the Ration complies with Section 7.

8.1.7.b Or, feed sold by feed mills may be found compliant with Section 8.1 if:

8.1.7.b.i Every incoming lot of Testable High-Risk crop destined for the Non-

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Commented [A66]: Taken from v13 Section VI.A.1.c.

Deleted: Strip testing below 0.25% Action Threshold. 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., a new neighbor planting GMOs). If the strip test results are positive for levels over the Action Threshold set forth in Section V.A., samples must be submitted to a lab for quantitative PCR testing. If the seed is over the 0.25% Action Threshold, the seed may not be planted. This provision is only available in cases where farmers are growing their own feed onsite.

Commented [A67]: The Non-GMO Project is proposing the following definition of High-Moisture Crops: *"A High-Moisture Crop contains 20% or more moisture content and is fermented."* PLEASE CLICK HERE TO COMMENT (Question 6).

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GMO supply chain, regardless of future Weight Percentage in the on-farm Ration, complies with Section 6, **AND**

8.1.7.b.ii Every incoming lot of Non-Testable High-Risk crop destined for the Non-GMO supply chain, regardless of future Weight Percentage in the on-farm Ration, complies with Section 7, **AND**

8.1.7.b.iii The Non-GMO integrity of every Testable and Non-Testable High-Risk crop compliant with Sections 8.1.7.a and 8.1.7.b is maintained through compliance with Section 4.

8.1.8 Farm Inspections

This section is in addition to the provisions of Section 5. Inspections may be completed via a group certification model. In order to be considered compliant, the Participant's internal control system (ICS) staff must conduct a documented assessment visit to each farm at least once every year.

8.1.8.a In addition to the ICS, third-party inspections must be conducted on 10% of all farms every year. Results of the third-party inspection will be compared with the results of the ICS assessment of the farms to verify the effectiveness of the ICS process.

8.1.8.b For certified organic operations, additional inspections (beyond those required for organic certification) are not required.

8.2 Apiculture

Honey and other goods derived from apiculture must meet the following requirements:

8.2.1 The bees' forage area (defined as the area within a 4-mile radius of the hives) must be sufficiently free of GM commercial agriculture.

8.2.2 Any supplemental bee feed must be evaluated for compliance with Section 3. All Major, Minor, and Micro Inputs to bee feed are within the scope of review and must be found compliant.

8.2.3 Certified organic honey and other Inputs or Ingredients derived from apiculture may be deemed compliant with the Standard based on a signed Affidavit from an organic certifier. The Affidavit must:

8.2.3.a Meet all requirements of Section 7;

Deleted: <#>The testing method must yield valid results for all Testable Major High-Risk Ingredients.¶
<#>When feed inputs can be isolated into their raw material components, strip testing may be used as described in Section V.D. ¶
<#>When feed inputs are tested as a composite, PCR testing must be used as described in Section V.C.

Commented [A69]: The Non-GMO Project is considering further developing the content set forth in the Standard regarding inspection of livestock and poultry farms where such operations are employing an Internal Control System. PLEASE CLICK HERE TO COMMENT (Question 7).

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8.2.3.b attest that the organic certifier has confirmed that the apiary is adhering to the Organic Apiculture Standard as formally recommended by the National Organic Standards Board (NOSB) to the National Organic Program (NOP). [14]

8.3 Seafood

8.3.1 Farm-raised seafood (in captivity from egg to harvest and/or where nutrient additions are provided) shall be fully evaluated as an animal-derived High-Risk Product, Ingredient, or Input and requires the evaluation of Ration Inputs. Products, Ingredients, and Inputs derived from farm-raised seafood shall be evaluated in the same manner as animal-derived Inputs in Section 3 and Section 8.1.

8.3.2 The feed of wild-caught seafood may be found compliant under Section 7.5 if the Affidavit establishes that the organism was caught in the wild.

8.4 Vitamins and Supplements

The growth media for probiotic Microorganism Inputs and Ingredients, and the growth media for Microorganisms from which Enzyme Inputs and Ingredients to vitamin and supplement Products are derived, are temporarily outside the scope of evaluation. This temporary exemption will be revisited during the 2020 comment period.

8.5 Beer, Wine, and Liquor

8.5.1 Fermentation Microorganisms used in the production of beer, wine, and liquor Products, Ingredients, and Inputs are not considered Processing Aids under the Standard, are ineligible for Section 3.1.3.a, Micro Exemption, and cannot be the result of Biotechnology.

8.5.2 Processing Aids used in the production of beer, wine, and liquor are subject to the same compliance requirements as Section 2.2.2.

8.5.3 Inputs to the fermentation media for beer, wine, and liquor Products, Ingredients, and Inputs are classified according to their Weight Percentage as represented in the finished Product, Risk Status, and Testability and found compliant according to the appropriate compliance pathways.

8.5.4 Beer, wine, and liquor goods will be held to the same level of evaluation as those with Ingredient panels.

8.6 Microorganisms

When Microorganisms, or Inputs or Ingredients derived from Microorganisms, are Products, or are Major or Minor Ingredients, both the Microorganism and the growth media are within the scope of review and must be found compliant. Inputs to growth media must be categorized into Major, Minor, and Micro Ingredients based on their representative Weight Percentage in the finished Product and found compliant according to the appropriate compliance pathways.

[14] NOSB. 2010. Formal Recommendation by the National Organic Standards Board (NOSB) to the National Organic Program (NOP), Subject: Apiculture Recommendation. October 28, 2010. https://www.ams.usda.gov/sites/default/files/media/NOP%20Livestock%20Final%20Rec%20Apiculture.pdf

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When Microorganisms, or Inputs or Ingredients derived from Microorganisms, are Micro Ingredients, the Microorganism is within the scope of review, but the growth media is not.

9 Product Specifications and Labeling

9.1 Specifications for Obtaining Inputs and Ingredients

9.1.1 For Products verified under the PVP, Participants shall not knowingly plant, purchase, or use Inputs or Ingredients that are not compliant with the Standard.

9.1.2 The written specifications for all Products, Ingredients, and Inputs shall include requirements regarding Standard compliance and shall be updated when the Participant changes suppliers, Inputs, or Ingredients.

9.1.3 When spot purchasing is necessary, unverified Inputs and Ingredients should be avoided; Participants must seek out Verified-Status Inputs and Ingredients. If a spot purchase of unverified Input or Ingredient is made, the Participant must justify to the TA why a Verified-Status Input or Ingredient was not used. Spot purchases of unverified Inputs or Ingredients are only allowed on the following basis: Any Testable High-Risk Input that is spot purchased must be tested in accordance with the requirements of this Standard and must be at or below the relevant Action Threshold.

9.1.3.a Any Non-Testable High-Risk Input or Ingredient, Verified-Status Input or Ingredient, or Low-Risk Input or Ingredient that is spot purchased must be compliant with all applicable requirements of Table 3-4 and Table 3-2, respectively.

9.1.3.b The Participant must provide the TA with documentation of the purchase, including Affidavits, sampling information, and test results. This reporting shall be done at least once per year, according to a schedule determined by the TA and the Participant.

9.1.3.c Constraints on spot purchasing may be enforced at the discretion of the TA. For example, repeated spot purchases from the same supplier could be grounds for this allowance to be revoked or restricted.

9.2 Labeling

9.2.1 Wholesale and retail Products must comply with the labeling requirements outlined in this Standard.

9.2.2 The TA will review labels to assess compliance with these claim guidelines.

9.2.3 **Labeling claims must be accurate, truthful,** and not mislead the consumer about the GMO content of the Product. Any reference to the Non-GMO Project or use of the verification mark must be approved by a written agreement with the Project. Claims that imply 100% absence are not acceptable and include, but are not limited to, "contains zero GMOs," "GMO-free," and "GE-free."

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9.2.4 "Made with" Text-only Claim

The "made with" text-only claim is "Made with Non-GMO Project Verified ." The Non-GMO Project trademark may not be used on retail consumer goods approved under this Section 9.2.4. The "made with" text-only claim may only be made in relation to Verified-Status High-Risk Major Ingredient(s) or a Verified-Status High-Risk Major Defining Ingredient in retail consumer goods that satisfy Section 9.2.4.a or Section 9.2.4.b, respectively. Derivatives of fermentation as retail consumer goods, or Inputs or Ingredients to wholesale goods, are ineligible for "made with."

Retail consumer goods with formulations containing animal-derived Ingredients, derivatives of apiculture, or a single High-Risk Major Defining Ingredient, may use a "made with" claim in accordance with the following guidelines:

9.2.4.a For consumer goods containing animal-derived Ingredients and/or derivatives of apiculture:

9.2.4.a.i The animal-derived Ingredients and Ingredients derived from apiculture may not collectively constitute more than 25% of the retail consumer good and none may be a Defining Ingredient.

9.2.4.a.ii The retail consumer good must contain at least one High-Risk Major Ingredient other than those sourced from animals or apiculture constituting 5% or more of the formulation.

9.2.4.a.iii The High-Risk Major Ingredient(s) for which the "made with" claim is sought must be verified as Product(s) under this Standard.

9.2.4.a.iv The retail consumer good may not contain any Prohibited Inputs or Ingredients (Section 2.2.3). Affidavits (Section 7) may satisfy this requirement.

9.2.4.b For consumer goods not containing animal-derived Ingredients and/or derivatives of apiculture:

9.2.4.b.i The consumer good must contain a single compliant High-Risk Major Defining Ingredient that constitutes at least 70% of the formulation.

9.2.4.b.ii The "made with" claim must be sought for the single compliant High-Risk Major Defining Ingredient.

9.2.4.b.iii The High-Risk Major Defining Ingredient for which the "made with" claim is sought must be verified as a Product under this Standard.

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10 Quality Assurance

10.1 Total Quality Management Systems

10.1.1 The Participant's quality assurance and quality control program, including SOPs, forms, and documents, shall be revised as needed to ensure compliance with the Standard, and revisions shall be documented.

10.1.2 Compliance with applicable requirements of the Standard shall be identified as key quality indicators of the Participant's total quality system.

10.1.3 The Participant shall monitor and control the compliance of Inputs and Ingredients purchased and finished Products, and this shall be documented.

10.1.4 Where needed, additional training shall be provided to relevant staff to ensure that SOPs in support of Standard compliance are followed and training shall be documented.

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

10.1.6 Records shall be retained for a minimum of 3 years.

10.2 Nonconformities and Corrective Actions

10.2.1 Global Nonconformity and Corrective Action Requirements

10.2.1.a Changes in processes, procedures, Inputs, Ingredients, or Products, which could impact compliance with any aspect of the Standard, are deemed Nonconformities and shall trigger corrective actions.

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

10.2.1.c Identification of Nonconformities, corrective actions, root cause analyses, and successful remediation of the Nonconformity shall all be documented.

10.2.2 Major Nonconformities

Major Nonconformities shall be reviewed at the time of occurrence, documented, and immediately reported in writing to the TA by the Participant.

10.2.2.a Discovery of any Major Nonconformity must be followed by a timely root cause analysis. "Timely" is typically considered to be within 7 days and rarely longer than 30 days.

10.2.2.b Findings of the root cause analysis must be reported in writing to the TA, together with the planned corrective actions to be undertaken.

10.2.2.c Corrective action plans shall include the identification of persons responsible for their execution, defined timelines for actions, and the desired results of the corrective action plan.

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10.2.2.d The TA will review and approve the findings of the root cause analysis and the planned corrective actions.

10.2.2.d.i Under certain circumstances, the Participant may propose blending a non-compliant tested lot with a compliant tested lot as part of their corrective action plan. This optional cure is temporary and shall not be incorporated into the Participant's SOPs nor implemented on a recurring basis. In this case, the Participant must:

- demonstrate that a homogenous blend was achieved;
- retest the blend in accordance with Section 6;
- confirm that the finished lot tests at or below the relevant Action Threshold;
- and implement and document practical continuous improvement practices to reduce, and ultimately eliminate, the need for any future blending of lots.

10.2.2.e Corrective actions must be completed in a timely manner, typically within 30 days, rarely longer than 90 days, of the completion of the root cause analysis. Documentary evidence must be submitted to the TA within 5 days of the completion of 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 TA will review and approve all corrective action evidence.

10.2.2.f Any delays in the timeline from reporting to completion of corrective actions must be justified in writing and approved by the TA.

10.2.2.g Any known Major Nonconformity that goes unreported and/or uncorrected and/or keeps recurring according to the requirements in Section 10.2.2 shall be cause for the Product or the Participant to be removed from the PVP. Prior to removing the Participant or Product from the PVP, the TA must notify the Participant via email of this intended action. The Participant will have 10 days from date of said notice to provide all required documentary evidence to avoid withdrawal from the PVP.

10.2.2.h Repeated nonconformance with the Action Threshold may require mid-term reevaluation of the Product.

10.2.3 Minor Nonconformities

10.2.3.a Minor Nonconformities shall be reviewed at the time of the annual evaluation. Verification renewal shall be contingent upon appropriate resolution of any such Nonconformity.

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. An example of one such practice would be to help growers secure Non-GMO Project Standard compliant planting seed.

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10.3 Renewal

Renewal evaluation of every Verified Product shall be required at least annually. Renewal evaluation must ensure that all compliance requirements are active, current, and have been met, no changes to the Product or its manufacture and processing that would compromise the Product's compliance with this Standard have occurred, and that the Product is compliant with any applicable Standard revisions. The TA 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 include, but are not limited to, the following: changes in Product composition that involve High-Risk Inputs or Ingredients, changes in suppliers of High-Risk Inputs or Ingredients, changes in processes or procedures that alter the segregation, cleanout, or traceability of Inputs, Ingredients, or Products, or changes in specifications of High-Risk Inputs, Ingredients, or of a final Product that contains High-Risk Inputs and Ingredients.

10.4 Participation

10.4.1 In addition to Participants, suppliers, distributors, contract processors, and other members of the CoC shall also provide information to TAs as necessary to confirm compliance with the Standard.

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Deleted: 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 Non-GMO Project Board of Directors based on an evaluation of said program by the TA using a procedure duly approved by the Board of Directors. In such cases, certificates of compliance from such a program may be accepted as equivalent to verification by the Non-GMO Project.

Deleted: **<#>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 contract 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. Organic certification is an example of such a system. All such systems are subject to review by the TA, especially in cases where parallel processing occurs within the certified system (e.g., processing certified organic soybeans in both Non-GMO Project verified and non-verified forms). In such cases, lot-by-lot IPs will likely be necessary.¶

Appendix A –Terms and Definitions

Affidavit – A written and signed statement confirming specific characteristics of a given organism, crop, precursor, Input, and/or Ingredient.

Biotechnology[16] **–** the application of:

a. in vitro nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA) and the direct injection of nucleic acid into cells or organelles; or
b. fusion of cells beyond the taxonomic family, that overcame natural physiological, reproductive, or recombination barriers and that are not techniques used in traditional breeding and selection.

Certificate of Approval – Annually renewed document confirming a laboratory's current compliance with, and participation in, the NGP Approved Laboratory Program. It includes the list of High-Risk crops for which the laboratory is approved to test.

Certificate of Verification (COV) – Annually renewed document demonstrating Product level compliance with the Standard, as determined by a Technical Administrator.

Compliant/Compliance – In accordance with the referenced and applicable requirement of this Standard. Compliance refers to one or more particular Standard sections as opposed to the Standard or PVP as a whole.

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 material present in the finished Product and whose name appears on the Product's principal display panel.

Enzyme – A protein molecule produced by a living organism, which acts as a catalyst to bring about a specific biochemical reaction.

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.

Genetically Modified or Genetic Modification (GM)—A term referring to processes of Biotechnology used to create GMOs.

Genetically Modified Organism (GMO) – An organism in which the genetic material has been changed through biotechnology in a way that does not occur naturally by multiplication and/or natural recombination; cloned animals are included within this definition.

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Component – An input to an input (excluding processing aids).

Deleted: defining ingredient is an ingredient

Deleted: name of the product.

Deleted: ; specific examples include chymosin, catalase, and amylase.

Deleted: – Genetically Modified or Genetic Modification

Deleted: GMO or

[16] Secretariat of the Convention on Biological Diversity (2000). Cartagena Protocol on Biosafety to the Convention on Biological Diversity: text and annexes. Montreal: Secretariat of the Convention on Biological Diversity

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

High-moisture – Describing Inputs to feed Rations containing at least 20% water and are fermented.

Ingredient – Any material or substance including, but not limited to, preservatives, sweeteners, color additives, flavors, spices, flavor enhancers, fat replacers, nutrients, emulsifiers, stabilizers, thickeners, binders, texturizers, buffers, acidulants, leavening agents, anti-caking agents, humectants, dough strengtheners, dough conditioners, firming agents, and enzyme preparations used in the creation of a wholesale or consumer good and present in said good, although possibly in a modified form.

Input – Any material or substance that is used in the activities along the CoC during the production of a consumer or wholesale good.

Major Nonconformity – A deviation that could affect the compliance of an Ingredient with the relevant Action Threshold, such as unintentional contamination of the Ingredient with GM material, or that could affect the compliance of an Input or Ingredient with Section 7.2.

Matrix – sample constituents other than the analyte of interest. This encompasses the composition of the sample (single or multi ingredient) and the state of processing (raw grain vs flour). The matrix can have a large impact on the effectiveness of a testing method, and a testing method run on the wrong sample matrix could yield invalid results.

Microorganism – A microscopic organism (such as a bacterium, yeast, fungus, or alga).

Minor Nonconformity – A deviation that could not cause any of the relevant inputs to the Product to exceed the relevant Action Threshold. This includes small changes to procedures, recordkeeping, documentation, or anything else small that does not have the potential to impact compliance with the relevant Action Threshold.

Mono-input – A material containing a single Input.

Nonconformity – Any deviation in operations that has not been approved by the TA.

Non-GMO or Non-GM – An organism or derivative of such an organism whose genetic structure has not been altered by, nor been exposed to, Biotechnology.

Non-Risk Category - A group of one or more types of wholesale or retail goods whose formulations involve no Inputs nor Ingredients of biological origin.

Non-Testable – Not having any precursor at any point in the supply chain for which current testing methodologies can distinguish between the wild type and genetically modified versions.

Parallel Processing – The practice of using the same facility for handling both Project-compliant and non-compliant Inputs, Ingredients, and/or Products.

Participant – A company that is seeking verification within the Product Verification Program and signs a License Agreement with the Project.

Commented [A82]: The Non-GMO Project is proposing the following definition of High-Moisture Crops: *"A High-Moisture Crop contains 20% or more moisture content and is fermented."* PLEASE CLICK HERE TO COMMENT (Question 6).

Deleted: input, including an additive,

Deleted: manufacture or preparation

Deleted: product

Deleted: the finished product

Deleted: becomes a part of the finished product, or a component of which becomes a part of the finished product, or

Deleted: otherwise in

Deleted: product

Deleted: These include the following:¶
Agricultural materials, such as seeds, fertilizers, and pesticides.¶
Unprocessed agricultural materials, such as vegetables, grains, fruit, greens, herbs, and other fresh foods.¶
Feed materials, such as grains, forage plants, vitamins, enzymes and minerals.¶
Livestock production materials, such as vaccines, hormones, and other veterinary materials.¶
Manufacturing and processing materials, including ingredients, flavorings, seasonings, colorings, additives, enzymes, cultures, and all other substances present in final manufactured products.¶
This definition does not distinguish between "mono" (composed of only one component) or "compound" (composed of more than one component) inputs. If the product is made of only one input, with no components (e.g., a "single input product"), the input and the product are the same.

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Deleted: **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.

Deleted: **Microbe**

Deleted: microorganism, especially

Deleted: or

Deleted: causing fermentation or otherwise metabolizing media. Specific examples include yeasts (e.g., *Saccharomyces*) and bacteria (e.g., *Lactobacillus*).

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Principal Display Panel[17] – Portion of the package label that is most likely to be seen by the consumer at the time of purchase (often the front face of the packaging).

Processing Aid[18] – (a) Substances [Inputs] that are added to a food [Product or Ingredient] during the processing of such food but are removed in some manner from the food before it is packaged in its finished form. (b) Substances [Inputs] that are added to a food [Product or Ingredient] during processing, are converted into constituents normally present in the food, and do not significantly increase the amount of the constituents naturally found in the food. (c) Substances [Inputs] that are added to a food [Product or Ingredient] for their technical or functional effect in the processing but are present in the finished food at insignificant levels and do not have any technical or functional effect in that food.

Producing Facility – Location where Inputs and Ingredients are combined to create the finished Product.

Product – A unique branded formula and process, where process could be either the manufacturing or facility process. "Product" refers to products that are involved in the Non-GMO Project Product Verification Program.

Ration – The feedstuffs fed to an animal during a 24-hour period.

Region - 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.

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.

Supplier – Any party from whom an Input and/or Ingredient is obtained.

Synthetic Biology (synbio) –The development of novel, artificial nucleic acid sequences, biological pathways, organisms, or devices or the redesign of existing natural biological systems.

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

Testable – Having one or more precursors at at least one point in the supply chain for which current testing methodologies can distinguish between the wild type and GM versions.

Deleted: An input that is (1) added during the processing of the product but is removed in some manner from the product before it is packaged in its final form; (2) added during the processing of the product and converted into constituents normally present in the product and which does not significantly increase the amount of the constituents naturally found in the product; or (3) added to the product for its technical or functional effect during processing but is present in the finished product at insignificant levels and does not have any technical or functional effect in the finished product.

Commented [A83]: Moved from v14.2 Footnote 13.

[17] U.S. Department of Health and Human Services. 2013. A Food Labeling Guide, Guidance for Industry. January, 2013. https://www.fda.gov/downloads/food/guidancecomplianceregulatoryinformation/guidancedocuments/foodlabelingnutrition/foodlabelingguide/ucm265446.pdf

[18] 21CFR §101.100 2017

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 prevent GMO contamination.

Verified – A finished Product's status when the TA establishes that the Product is compliant with all applicable requirements of this Standard and has satisfied all other elements of the PVP. Verified refers to the PVP as a whole, as opposed to particular requirements.

Viable Microorganism – A microorganism that performs metabolic functions and reproduces/multiplies.

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Appendix B – High-Risk List

Organisms, and Products, Ingredients, and Inputs derived from organisms, for which GM versions are widely commercially available; this includes certain crops, their derivatives, and animal-derived materials.

Deleted: [19]

Commented [A84]: Moved from v14.2 Footnote 15.

B.1 Testable High-Risk Inputs and Ingredients

B.1.1 Crops

The following list of Testable High-Risk crops is exhaustive:

- Alfalfa
- Canola[20]
- Corn (except popcorn)
- Cotton
- Papaya
- Soy
- Sugar beets
- Zucchini and yellow summer squash

B.1.2 Animal-derived Inputs and Ingredients[21]

Deleted: Processed Inputs/Derivatives

- Meat, dairy, eggs, wool, hides, honey, seafood, and any other materials or substances originating from animals
- Livestock and poultry feed
- Bee forage and feed
- Fish and other aquatic animal feed[22]

Deleted: , and Aquaculture

B.1.3 Inputs, Ingredients, and Derivatives

Deleted: Crop

- Ascorbic acid, sodium ascorbate, vitamin C
- Citric acid, sodium citrate – derived from glucose syrup
- Ethanol – derived from corn or GMO sugar beets
- Corn syrup
- Hydrolyzed vegetable protein
- Maltodextrins
- Molasses – derived from sugar beets
- Monosodium glutamate

[20] Note that canola is also on the list of Non-Testable High-Risk Products, Ingredients, and Inputs and must therefore be compliant with the requirements in both Section 6 and Section 7.

[21] This is a non-exhaustive list of Inputs, Ingredients, and derivatives that should be considered High-Risk when sourced from crops in Appendix B.1.1. It is meant to provide examples of materials that are considered High-Risk by the Project.

Deleted: Non-GMO

[22] Per Section 8.1., Section 8.2, and Section 8.3., verification of livestock and poultry, bee, and seafood Products and Major Inputs and Ingredients requires the testing of feed.

Deleted: aquaculture

- Sucrose – derived from sugar beets
- Textured vegetable protein – including soy protein

Deleted: c.Other Derivatives

- Amino acids
- Aspartame
- Flavorings, "natural" and "artificial" – including all carriers and co-formulants
- Lactic acid
- Microbial growth media
- Vitamins – vitamin A (various forms), vitamin B6 (pyridoxine hydrochloride), vitamin B12 (cyanocobalamin), vitamin C (ascorbic acid), and vitamin E (various forms). Vitamins in general are often formulated with dispersants and related ingredients that also have GMO risk (e.g., corn oil)
- Xanthan gum

Deleted: ¶
Yeast products

B.2 Non-Testable High-Risk Inputs and Ingredients

B.2.1 Crops

- Canola (ODM)[23]
- Potato

Deleted: RTDS [

B.2.2 Microorganism and Enzyme Inputs and Ingredients

Deleted: be

- Algae
- Bacteria
- Enzymes
- Microbial cultures and starters
- Yeast

Deleted: – including chymosin

Deleted: – including yeast

Deleted: Algae from aquaculture

B.2.3 Ingredients or Substances with Synbio Counterparts

Deleted: Potentially Sourced via Synthetic Biology

[23] Note that canola is also on the list of Testable High-Risk Products, Ingredients, and Inputs and must therefore be compliant with the requirements in both Section 6 and Section 7.

Deleted: Section V

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Appendix C –Monitored-Risk List

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Organisms, and Products, Ingredients, and Inputs derived from those organisms, for which GM counterparts are in the research and development stages, which have been developed but are not widely commercially available, or for which known GMO contamination has occurred.

Deleted: Certain inputs

Deleted: organisms

Commented [A85]: Moved from v14.2 Footnote 19

Deleted: organism

C.1 Testable Monitored-Risk Inputs

C.1.1 Crops

- *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* (e.g., acorn squash, delicata squash, patty pan squash, pumpkin, and spaghetti squash) – cross-pollination risk from GM squash
- Flax
- Mustard
- Rice
- Wheat

C.2 Non-Testable Monitored-Risk Inputs

C.2.1 Crops

- Apple
- Camelina (false flax)
- Corn (CRISPR-Cas9)[25]

Deleted: , INzyme®

- Mushroom
- Orange
- Pineapple
-

Deleted: Potato

Deleted: Salmon

- Soy (TALEN)
- Sugarcane
- Tomato

C.2.2 Animal-derived Inputs and Ingredients

- Salmon

C.2.3 Ingredients or Substances with Synbio Counterparts

Deleted: Potentially Sourced via Synthetic Biology

- Spider silk

[25] Note that corn is also on the list of Testable High-Risk Inputs and must therefore be compliant with the requirements in Section 6.

Deleted: Section V

Appendix D – Extended Timelines

Non-GMO Project Standard

Biennial public comment periods on the Standard in its entirety are held for 60 days beginning in April of even years (e.g., 2020, 2022). 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.

Table of Contents

Tables

1 Introduction

The Non-GMO Project is a nonprofit organization whose mission is~~committed~~ to preserve and build sources of non-GMO products, educate consumers, and provide verified non-GMO choices.

In support of our mission, the Non-GMO Project offers a Product Verification Program (PVP) whereby Participants may enroll wholesale and retail consumer goods as Products for evaluation against, and determination of compliance with, the Non-GMO Project Standard. The PVP also includes a written agreement between the Participant and the Non-GMO Project, and where applicable, a written agreement between the Participant and one or more Technical Administrators (TAs). If all elements of the PVP are satisfied, including meeting the compliance requirements set forth by the Non-GMO Project Standard, Products may attain Non-GMO Project Verification.

To monitor compliance with the PVP, the Non-GMO Project maintains surveillance and auditing programs. The surveillance program routinely tests Verified Products for compliance with the Action Thresholds outlined in the Non-GMO Project Standard. The auditing program is in place to ensure that the appropriate supporting documentation associated with Verified Products is on file and fulfills the requirements of the PVP.

Hereafter the Non-GMO Project will be referred to as "the Project" and the Non-GMO Project Standard as "the Standard."

English is the original and official language of this Standard. Terms defined in Appendix A and used in this Standard are capitalized throughout.~~defined in Appendix A.~~ Requirements listed under headers titled "Global Requirements" apply to the entirety of the section in which they appear (e.g., v15 Section 4.2, Global Chain of Custody Requirements, applies to all of v15 Section 4).

1.1 Purpose

The purpose of the Standard is to offer meaning and value to the marketing claim "Non-GMO Project Verified" by creating, maintaining, and keeping publicly available, a set of rigorous requirements against which all Non-GMO Project Verified Products are measured.

1.2 Methodology and Approach

The ~~Non-GMO~~ Project's PVP~~roduct Verification Program ("Program")~~ is based on a practice and process-oriented Standard that uses both testing and Affidavits as key strategic tools to confirm that practices and processes meet expectations.

Continuous improvement on the part of ~~Program~~ Participants is required with the common goal of ~~completely~~ eliminating any GMO-risk Inputs and Ingredients from their supply~~production~~ chains.

Commented [A1]: Moved from v14.2 Section I.B.4.

A Product is a unique branded formula and process, where process could be either the manufacturing or facility process. "Product" refers to Products that are involved in the PVP.

The breadth and depth of Product evaluation is informed by the nature of the Inputs and Ingredients that are represented in, or present in, the Product formulation. Inputs and Ingredients are classified according to three attributes: 1) weight percentage as represented in, or present in, the Product, 2) likelihood that they are derived from a Genetically Modified Organism (GMO), and 3) whether a testable precursor exists at any point in the supply chain. These three attributes are termed Weight Percentage, Risk Status, and Testability, respectively. Compliance of all Inputs and Ingredients associated with a Product, and whose evaluation is mandatory, is required for verification.

Activities occurring along the chain of custody (CoC) for Products and their Ingredients and Inputs are reviewed for compliance with the Segregation, Cleanout, Traceability, and Quality Assurance requirements outlined in this Standard. Products must comply, on an ongoing basis, with the Labeling requirements outlined in this Standard and cannot carry competing claims or 100% GMO absence claims.

While requiring the compliance of all Inputs and Ingredients to Products, the PVP is highly focused on Products, Ingredients, and Inputs that are likely to be, or be derived from, GMOs. Testable High-Risk Products, Ingredients, and Inputs must comply with the appropriate Action Threshold and Non-Testable High-Risk Products, Ingredients, and Inputs must comply with Affidavit requirements.

Addressing contamination of seed is a stated priority of the Project. Although traceability back to tested seed is not required for Product verification in general, the Project is actively developing sources of compliant seed as the basis for a sustainable Non-GMO supply chain.

~~Verification of products shall be contingent on products meeting requirements regarding Non-GMO Project Standard compliance, including traceability, segregation, and testing.~~

In summary, all~~The Non-GMO~~ Project Verified ~~Standard requires that all verified~~ Products must have systems in place for:

- **Labeling:** Accurate and clear Product labeling
- **Quality assurance:** Maintaining operational consistency and addressing Nonconformities promptly
- **Procurement~~Formulation~~:** Obtaining Inputs and Ingredients in accordance with uniform and meaningful specifications
- **Testing:** Meaningful, ongoing testing of Major High-Risk Inputs and Ingredients~~GMO risk inputs~~
- **Segregation and Cleanout:** Protecting compliant Inputs and Ingredients from commingling with non-compliant material~~inputs~~s
- **Traceability:** Supply chain traceability, especially following Input and Ingredient testing or the establishment of a compliant Affidavit

Commented [A2]: Moved from v14.2 Section II.B.1.

Commented [A3]: v14.2 Section I.B.3.

Commented [A4]: Moved from v14.2 Section I.A.

Commented [A5]: Moved from v14.2 Section I.A.5.

Commented [A6]: Moved from v14.2 Section I.A.6.

Commented [A7]: Moved from v14.2 Section I.A.4.

Commented [A8]: Moved from v14.2 Section I.A.1.

Commented [A9]: Moved from v14.2 Section I.A.3.

Commented [A10]: Moved from v14.2 Section I.A.2.

2 Scope

The scope of the ~~Non-GMO Project~~ Standard and the PVP~~rogram~~ encompasses the following Product categories, including their Inputs, Ingredients, and Activities.

2.1 Product Categories

2.1.1 The following types of wholesale or retail goods~~products~~ are eligible for verification:~~may be verified if found to be compliant with this Standard:~~

2.1.1.a Seed and vegetative~~other~~ propagation materials

2.1.1.b Wholesale or retail goods for human or pet use~~Products~~ that are either ingested or topically applied ~~directly to skin, such as human food, ingredients, supplements, and personal care products, including lotions, soaps, balms, makeup, etc.~~

2.1.1.c Over the counter (OTC) drugs and~~, including~~ homeopathic remedies

2.1.1.d Wholesale or retail goods~~Products~~ for human or pet use that are not ingested or topically applied ~~directly to skin, such as packaging, cleaning products, and textiles~~

2.2.1.e Livestock, poultry, bee, and seafood feed and supplements

Commented [A11]: Moved from v14.2 Section II.A.1.d.

~~f. Pet food~~

Commented [A12]: v14.2 Section II.A.1.f.

2.1.2 The following types of goods~~products~~ are ineligible for verification as Products~~may not be verified~~ under this Standard:

2.1.2.a ~~Products that include c~~Controlled substances under U.S. or Canadian law and all other prohibited Inputs and Ingredients listed under Section 2.2.3

2.1.2.b ~~Products~~Goods that are not sold in the U.S. or Canada

2.1.2.c Certain medicines and other medical products

2.1.2.d Live animals

2.1.2.e Synthetic pesticides

2.1.2.f ~~Products~~Goods composed entirely of Non-Risk Inputs and Ingredients and that are part of a Non-Risk Category

2.1.2.f.i Non-Risk Categories include, but are not limited to, unflavored still beverages, unflavored carbonated beverages, and unflavored electrolyte beverages

2.2 Input and Ingredient Evaluation

2.2.1 **Mandatory Input and Ingredient categories** (Input and Ingredient categories to Product formulations that must be evaluated and found compliant):

~~Inputs present in the finished product, including but not limited to:~~

Commented [A13]: v14.2 Section II.B.1.a.

2.2.1.a Seeds and vegetative propagation materials ONLY when the same seeds or vegetative propagation materials are the Products seeking verification.

2.2.1.b All Inputs and Ingredients represented in, or present in, the Product formulation from the following categories must comply with the requirements of this Standard in order for the finished Product to be verified.

2.2.1.b.i Unprocessed raw agricultural materials~~inputs,~~ such as vegetables, grains, fruit, greens, herbs, other fresh foods, fibers, etc.

2.2.1.b.ii Manufacturing Inputs and Ingredients, including flavorings, seasonings, colorings, additives, and all other substances present in final, manufactured Products.

2.2.1.b.iii Animal derivatives~~-derived inputs,~~ including dairy, meat, eggs, ~~bee-produced inputs,~~ wool, hides, ~~and~~ derivatives of apiculture including, but not limited to, honey and beeswax, and derivatives of seafood~~. or inputs derived from aquaculture~~[1]

2.2.1.b.iv Processed agricultural Inputs and~~or~~ Ingredients

~~Manufactured or processed food inputs or ingredients~~

2.2.1.b.v Packaging that is directly immersed or combined with liquid for the purpose of making the Product available for human consumption[2] ~~This~~ includinges, ~~but is not limited to,~~ tea, coffee, spice, and soup bags but ~~does~~ not includinge any part of the packaging other than the bag.

2.2.1.b.vi Rations and supplemental feed for livestock, poultry, and other animals~~ feed components, such as grains, vitamins, enzymes minerals, etc.~~

2.2.1.c Other Inputs and Ingredients used in personal care and cosmetic Products, and textiles

2.2.1.d Dietary supplements, vitamins, and herbal preparations

2.2.1.e Microorganisms,~~bial starters and~~ enzymes, and growth media~~, and derivatives, including those used for livestock feed (e.g., silage or hay inoculants, fermentation solids, or similar products) or human food~~

2.2.1.f Processing Aids present in the finished Product at 0.5% or more

2.2.1.g Processing Aids listed on the Ingredient panel of a retail consumer good, or Input/Ingredient disclosure documentation of a wholesale consumer good

~~Note: Addressing contamination of seed is a stated priority of the Non-GMO Project. Although traceability back to tested seed is not required for product verification,~~

Commented [A14]: v14.2 Section II.B.1.a.v.

Commented [A15]: Moved from v14.2 Footnote 2

[1] ~~Cloned animals and their progeny are not allowed.~~

[2] ~~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.~~

~~the Project is actively developing sources of compliant seed as the basis for a sustainable non-GMO supply chain.~~

Commented [A16]: Moved to v14.2 Redline Section 1.2

~~**Eligible input** categories (input categories for optional evaluation):In addition to the finished product, Participants may choose to verify inputs in the following categories in order to market them with reference to the Non-GMO Project verification mark or name. Verification of inputs listed in this Section II.B.2. is not required in order for a product to be verified. When the product itself, as opposed to an input to another product, the inputs below must be verified in accordance with this Standard and are not optional. In order for the following inputs themselves to be marketed with reference to the Non-GMO Project verification mark 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.").~~

~~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, and medicines; *not* including recombinant bovine growth hormone (rBGH) and recombinant bovine somatotropin (rBST), which are prohibited inputs~~

2.2.2 Input and Ingredient categories that are out of scope of this Standard (Input and Ingredient categories that do not affect the evaluation of the overall Product formulation including Weight Percentage, Risk Status, and Testability, do not need to be evaluated, and do not need to demonstrate compliance with this Standard):

2.2.2.a Processing Aids used in the manufacture or processing of a finished Product, Ingredient, or Input shall be out of the scope of review if present in the finished Product at less than 0.5% and not declared on the retail Ingredient panel or the Input/Ingredient disclosure documentation of a wholesale Product. For the purposes of this Standard, fermentation Microorganisms are not considered to be Processing Aids.

2.2.2.b Purified carbon dioxide (CO_2) from either biological or non-biological sources

2.2.2.c Fully composted materials and animal manures not sourced from GM animals

2.2.3 Prohibited Inputs and Ingredients:

2.2.3.a Controlled substances under U.S. or Canadian law

2.2.3.b Recombinant bovine growth hormone (rBGH)

2.2.3.c Recombinant bovine somatotropin (rBST)

2.2.3.d Genetically modified animals including those that are cloned, and their progeny ~~are not allowed~~

2.2.3.e Manure sourced from genetically engineered animals

2.2.3.f ~~Products of s~~Synbio~~thetic biology~~ and its derivatives~~(synbio).~~

Commented [A17]: Taken from v14.2 Section II.B.2.b.

Commented [A18]: Moved from v14.2 Section II.B.2.e.

Commented [A19]: Moved from v14.2 Footnote 1

Commented [A20]: Taken from v14.2 Section II.B.2.b.

Commented [A21]: Moved from v14.2 Section II.D.3.a.ii.c)

3 Input and Ingredient Classification

Each Input and ~~i~~Ingredient must be classified in accordance with this Section 3~~II.D.~~ and meet all applicable requirements under this Standard to be included in a verified ~~p~~Product.

Commented [A22]: Moved from v14.2 Section II.D.

3.1 Weight Percentage

All Inputs and ~~i~~Ingredients[3] must be classified according to their ~~w~~Weight ~~p~~Percentage~~s~~ as represented in, or as present in, the finished ~~p~~Product, not counting the weight of salt or added water present in the finished ~~p~~Product. Excluded from the ~~w~~Weight Percentage calculation are: 1) Processing Aids present in the finished ~~p~~Product at less than 0.5% and not declared on the retail ~~i~~Ingredient panel or the ~~i~~Input/Ingredient disclosure documentation of a wholesale ~~p~~Product, and 2) purified ~~Carbon Dioxide (~~CO_2~~).~~

Commented [A23]: Moved from v14.2 Footnote 3

For animal~~livestock~~ feed other than pet food, the Weight Percentage categories below are calculated based on the weight of the Input~~ingredient~~ as a percentage of the ~~r~~Ration fed to the animal. Per Section 8.1, ~~all~~ some Minor~~Micro~~ and all Micro~~nor~~ Inputs ~~gredients~~ of ~~l~~ivestock and poultry ~~feed~~ Rations are exempt from evaluation.

Commented [A24]: Moved from v14.2 Footnote 4

Commented [A25]: The Non-GMO Project is considering requiring classification of Inputs/Ingredients to feed rations on a Dry Matter basis rather than an As-Fed basis. PLEASE CLICK HERE TO COMMENT (Question 3).

Unless a Verified-Status ~~Input~~Ingredient, the Inputs ~~components~~ to each ~~compound~~ Major or Minor Ingredient must be classified and evaluated back to the point in the ~~input's~~ supply chain where they~~the input~~ can be confirmed compliant with the Standard's requirements ~~(e.g., sub-components can be confirmed as Low-Risk or meet an Action Threshold)~~. If the Ingredient it ~~is~~ classified as an ~~E~~exempt Micro Ingredient per Section 3.1.3.a~~Section II.D.3.b~~, ~~a compound input does not require~~no further breakdown ~~and~~or classification is required.

3.1.1 Major Inputs and Ingredients, each of which represents, or ~~represents~~ is present as, 5% or more of the finished ~~p~~Product. ~~or is a defining ingredient.~~

3.1.2 Minor Inputs and Ingredients, each of which represents, or is present as, at least 0.5% but less than 5% of the finished Product.

[3] ~~Excluded from the weight calculation are: 1) Processing Aids present in the finished product at less than 0.5% and not declared on the retail ingredient panel or the input disclosure documentation of a wholesale product, and 2) purified Carbon Dioxide (CO_2).~~

3.1.3 **Micro Inputs and Ingredients**, each of which represents, or is present as, less than 0.5% of the finished ~~p~~Product~~, and is not a defining ingredient.~~ The depth of evaluation~~scope of review~~ for these ~~i~~Ingredients, including application of the limits in Section 3.1.3.a below, shall be limited to the organism from which they were derived~~input used directly in the product~~, as opposed to growth medium or feed.

3.1.3.a **Micro Exemption~~-Micro Ingredients~~**. ~~All~~ Micro Ingredients not listed in Section 3.1.3.b~~Section II.D.3.a.~~ directly below~~above~~ may be~~are~~ exempt from evaluation provided that any given ~~p~~Product does not contain more than 0.9% total ~~e~~Exempt Micro Ingredients, by Weight Percentage.~~[4]~~ Until May 20, 2019, a Product may contain up to 10 Exempt Micro Ingredients.

3.1.3.b **Micro Ingredients ineligible for Micro Exemption.~~that require evaluation~~:**

~~i. Any added nutrient, vitamin, or other active component contained in a finished supplement product must be non-GMO, regardless of amount.~~[5]

~~ii.~~

3.1.3.b.i **Viable Microorganisms** and **Functional Enzymes**~~The following ingredients~~ are not eligible for Micro Exemption ~~allowed~~ if they are the ~~direct~~ result~~product~~ of Biotechnology~~genetic modification~~ 1) For finished retail goods, if they are listed on the Ingredient panel; or 2) For goods~~products~~ sold without retail labeling, if they are listed on the Input/Ingredient disclosure documentation.~~:~~[6]

~~Viable Microbes.~~

~~Functional Enzymes.~~

3.1.3.b.ii **Defining Ingredients**, each of which are both present in the finished Product AND present on the Principal Display Panel of the finished Product. Flavors, Microorganisms, and Enzymes are not considered to be Defining Ingredients.

3.2 Risk Status~~Classification and Requirements~~

~~Input Categories~~

All Inputs and Ingredients must be classified according to their Risk Status. Risk Status denotes the likelihood that an Input or Ingredient is, or was derived from, a GMO. In order to focus the PVP~~rogram~~ on Inputs and Ingredients at risk for GMO contamination throughout the CoC, the Standard recognizes ~~classifies inputs into~~five Risk Statuses~~categories~~ (Table 3-1~~2~~).

Commented [A26]: Moved from v14.2 Section II.D.3.b.

Commented [A27]: Moved from v14.2 Footnote 7

Commented [A28]: v14.2 Section II.D.3.a.i.

Commented [A29]: v14.2 Section II.D.3.a.ii.a) and b).

~~[4] Until May 20, 2019, a product may contain up to 10 Exempt Micro Ingredients.~~

~~[5] This restriction takes effect on May 20, 2019.~~

~~[6] For retail consumer goods without ingredient panels, such as beer and wine, GM microbes, enzymes derived from GMOs, and products of synthetic biology, are not allowed in the final production stages. These consumer goods will be held to the same level of evaluation as those with ingredient panels.~~

Table 3-1. The Five Risk Statuses ~~Input Categories~~

Risk Status~~Category~~	Definition
Verified-Status	~~Inputs~~ Products that have been verified under the PVP ~~rogram as Verified Products~~at wholesale or retail and are purchased for use as Inputs or Ingredients to different Products enrolled in the PVP.~~, independent of the product for which they are an input.~~
High-Risk (see Appendix B)	Organisms and the Inputs and Ingredients derived from them for which GMO counterparts~~versions~~ are widely commercially available.~~; this includes certain crops, their derivatives, and animal-derived inputs.~~ [7]
Monitored-Risk (see Appendix C)	Organisms and the Inputs and Ingredients derived from them ~~Certain inputs~~ for which GMO counterparts are in the research and development stages, which have been developed but are not widely commercially available, or for which known GMO ~~organism~~ contamination has occurred.
Low-Risk	Organisms and the Inputs and Ingredients derived from them ~~derived from biological organisms but~~ that are not classified as~~in the~~ Monitored-Risk or High-Risk~~ categories.~~
Non-Risk	Inputs and Ingredients~~Materials~~ that are not derived from biological organisms and are not, therefore, susceptible to Genetic Modification.

Commented [A30]: v14.2 Section III.A., Table 2., "Required for Compliance" column moved to v14.2 Redline Section 3.4, Table 3-2, and heavily edited.

~~**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 demonstrating consistently low risk of GMO contamination (in accordance with this Standard). 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 confirmed as having been used, and documented identity preservation (IP) procedures are in place for the manufacture and transport of the input.~~

Commented [A31]: Moved to v14.2 Redline Section 7.4

~~2. From High-Risk to Verified-Status:~~

~~High-Risk Inputs that have been verified under the Program as Verified Products (also referred to as Verified-Status Inputs) are subject to a modified evaluation, as described in Section III.A.~~

~~3. From Low-Risk to High-Risk:~~

~~[7] Animal-derived inputs are included in the list of High-Risk Inputs because livestock feed commonly contains High-Risk Inputs. In addition, injections of rBGH are sometimes used to increase milk production.~~

~~The Project maintains a surveillance program, one purpose of which is to evaluate GM risk and GM content on a Project-wide basis, using cumulative data. Using data from the surveillance program, the Project may re-classify a Low-Risk Input classified as a High-Risk Input. In such case, the verification of the input shall be carried out according to the requirements for High-Risk Inputs.~~

3.3 Testability

Inputs and Ingredients are either Testable or Non-Testable. Testable Inputs and Ingredients have a point in the supply chain where the Input or Ingredient contains sufficient intact deoxyribonucleic acid (DNA) or protein to return a valid polymerase chain reaction (PCR) result or immunological test result, and PCR tests or immunological tests are publicly commercially available to cover all events for which the Project requires testing. Non-Testable Inputs and Ingredients do not currently have such publicly commercially available tests. Some crops are both Testable and Non-Testable according to the above criteria.

For Testable High-Risk Inputs and Ingredients other than animal feed, PCR is the only acceptable testing methodology. For Testable High-Risk Inputs to animal feed, either PCR or immunological tests may be used to demonstrate compliance with the Action Threshold.

Inputs and Ingredients from animals for which there are no commercially available GM counterparts are considered Testable because the animals' feed may be Testable. Where commercially available GM counterparts for a specific animal do exist, Testability will be assigned separately to the animal and the feed Inputs, and the appropriate compliance pathways will apply.

3.4 Product Compliance by Input and Ingredient Classification

A full Input and/or Ingredient disclosure is required in most cases for Products, Ingredients, and Inputs. Table 3-2 summarizes the compliance pathways available to Verified-Status, Monitored-Risk, Low-Risk, and Non-Risk Inputs and Ingredients. The compliance pathways of these four Risk Statuses are unaffected by Weight Percentage in the finished Product and Testability. Table 3-3 summarizes the compliance requirements of Defining Ingredients, which are influenced by Weight Percentage in the finished Product and Testability. Table 3-4 summarizes the various compliance pathways for Testable and Non-Testable High-Risk Inputs and Ingredients when they are Products, Majors, Minors, and Micros.

Additional requirements may also apply to Products, Ingredients, and Inputs including those outlined in Section 9 and Section 10.

Table 3-2. Compliance of Verified-Status, Monitored-Risk, Low-Risk, and Non-Risk Inputs, Ingredients, and Products

Verified-Status
~~1. Confirm the Verified Status of the Input.~~ ~~2. Components of the input do not need to be re-evaluated.~~ ~~3. Comply with the traceability and segregation measures outlined in Section IV.~~ 1. Provide a current and valid Certificate of Verification (COV) of appropriate scope

Commented [A32]: Moved from v14.2 Section III.A., Table 2., Verified-Status, Required for Compliance

Table 3-2. Compliance of Verified-Status, Monitored-Risk, Low-Risk, and Non-Risk Inputs, Ingredients, and Products

2. Provide proof of purchase 3. Comply with Section 4, Chain of Custody, from the point of the Participant's procurement to the finished Product 4. Comply with Section 5, Inspections, from the point of the Participant's procurement to the finished Product
Monitored-Risk
See requirements for Low-Risk.
Low-Risk
~~1. Examine the complete input disclosure to confirm the absence of components with GMO risk, including compound ingredients.~~ ~~2. Verify that the input was produced under conditions designed to avoid cross-contamination with genetically modified (GM) materials.~~ 1. Comply with Section 4.3, Segregation. If the facility does not use any High-Risk Inputs or Ingredients, 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 Input from potential sources of High-Risk contamination within the facility.~~ **AND EITHER** 2. Comply with Section 7.5, Low-Risk Major, Minor, and Micro Inputs and Ingredients **OR** 3. Provide a complete Input and Ingredient disclosure
Non-Risk
~~Examine the complete input disclosure for compound inputs, including all components of the input in question, to confirm the absence of components with GMO risk.~~ 1. Comply with Section 7.6, Non-Risk Major, Minor, and Micro Inputs and Ingredients **OR** 2. Provide a complete Input and Ingredient disclosure

Note: Inputs and Ingredients from the Verified-Status, Monitored-Risk, Low-Risk, and Non-Risk Risk Statuses have the same compliance pathways regardless of Weight Percentage as represented in, or present in, the Product, and regardless of Testability.

Commented [A33]: Moved from v14.2 Section III.A., Table 2., Monitored-Risk, Required for Compliance

Commented [A34]: Moved from v14.2 Section III.A., Table 2., Low-Risk, Required for Compliance

Commented [A35]: Moved from v14.2 Section III.A., Table 2., Non-Risk, Required for Compliance

Table 3-3. Compliance of Defining Ingredients

Defining Ingredient
Major
1. Comply with Standard requirements as a Major Ingredient based on the combination of Risk Status and Testability
Minor
1. Comply with Standard requirements as **EITHER** a. A Major Ingredient **OR** b. A Minor Ingredient based on the combination of Risk Status and Testability
Micro
1. Comply with Standard requirements as **EITHER** a. A Major Ingredient **OR** b. A Minor Ingredient **OR** c. Based on the combination of Risk Status and Testability, comply as a Micro Ingredient under Section 7.2 or Section 7.3 2. Defining Ingredients present in the finished Product as Micros are ineligible for Micro Exemption under Section 3.1.3.a and must be Non-GMO

Table 3-4. Compliance of Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients

Product/Major	Minor	Micro
Testable High-Risk		
1. Submit a complete Input and Ingredient disclosure **AND** 2. Comply with Section 4, Chain of Custody 3. Comply with Section 5, Inspections **AND EITHER** a. Comply with Section 6, Sampling and Testing **OR** b. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin	1. Submit a complete Input and Ingredient disclosure **AND** a. Comply as a Product/Major **OR** b. Comply with Section 7.3, Testable High-Risk Minor and Micro Inputs and Ingredients	1. Comply as a Product/Major **OR** 2. Comply as a Minor **OR** 3. Comply with Section 3.1.3, Micro Inputs and Ingredients
Product/Major	**Minor**	**Micro**
Non-Testable High-Risk		
1. Submit a complete Input and Ingredient disclosure **AND** 2. Comply with Section 4, Chain of Custody 3. Comply with Section 5, Inspections 4. Comply with Section 7.2, Non-Testable High-Risk Inputs and Ingredients	1. Submit a complete Input and Ingredient disclosure **AND** 2. Comply with Section 4, Chain of Custody 3. Comply with Section 5, Inspections 4. Comply with Section 7.2, Non-Testable High-Risk Inputs and Ingredients	1. Comply as a Product/Major **OR** 2. Comply as a Minor **OR** 3. Comply with Section 3.1.3, Micro Inputs and Ingredients

Commented [A36]: Moved from v14.2 Section III.A., Table 2., High-Risk, Required for Compliance

4 Chain of Custody ~~Traceability, Segregation, and Inspections~~

Project compliant Products, Ingredients, and Inputs must maintain their integrity while being moved through various Activities along the CoC. CoC requirements apply from the point of testing or compliant Affidavit forward to the finished Product.

4.1 Activities

CoC requirements apply beginning at the point of testing or procurement of compliant Affidavits. ~~The scope of the evaluation encompasses the following types of activities and sectors of food and related production systems.~~ When relevant to the verification of the Product, the following Activities are subject to review and must be found compliant with the Standard (Table 4-1).

Commented [A37]: Moved from v14.2 Section II.C.

Commented [A38]: Moved from v14.2 Section II.C.

Table 4-1. Activities Along the Chain of Custody

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 CoC~~chain of custody~~ from seed to consumer, except for Products enclosed in final retail packaging
Storage	Includes all links in the CoC~~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
Manufacturing	Involves the production, and combination of, Inputs and Ingredients to make the finished Product
Packaging and labeling	Includes any and all events where the package or labeling of goods is added, removed, or altered

4.2 Global Chain of Custody Requirements

4.2.1 All required procedures must be written and accessible to all appropriate staff and updated as necessary.

4.2.2 All appropriate staff working with compliant Inputs, Ingredients, and Products shall be adequately trained in the required procedures.

4.2.3 All records shall be maintained for a minimum of 3 years.

4.3 ~~Cleanout and~~ Segregation

4.3.1 Systematic procedures shall be in place during Activities~~production~~ to keep compliant Inputs, Ingredients, work in progress, and finished Products separate from all non-compliant High-Risk materials~~ that are not compliant with the Non-GMO Project Standard.~~

4.3.2 Segregation measures are also required for instances where any required testing occurs after the Input or Ingredient in question has entered the facility~~ (e.g., when a Participant, rather than an ingredient supplier, is taking responsibility for testing).~~

Commented [A39]: Moved from v14.2 Section IV.B.2. and IV.B.3.

4.4 Cleanout

4.4.1 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.

Commented [A40]: Moved from v14.2 Section IV.B.1.

4.5 Traceability

4.5.1 Each lot of ~~Non-GMO Project~~ Verified Product must be traceable back to specific lots of the Inputs and Ingredients used in its production. If lots of compliant Inputs and/or Ingredients~~a given input~~ are commingled 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.

Commented [A41]: Moved from v14.2 Section IV.A.2. second sentence.

4.5.2 Testable High-Risk Inputs and Ingredients must be traceable back to the lots that demonstrate compliant test results. Non-Testable High-Risk Inputs and Ingredients must be traceable back to the lots associated with compliant Affidavits.

4.5.3 Systematic procedures shall be in place for tracking lot numbers and/or marking and labeling of packaging, containers, and storage facilities to ensure traceability of Inputs, Ingredients, work-in-progress, and finished Products at all points in the production process.

Commented [A42]: Moved from v14.2 Section IV.A.1. second sentence.

4.5.4 Traceability records shall explicitly trace and track the ~~Non-GMO Project Standard~~ compliant status of Inputs, Ingredients, and ~~the~~ finished Products.

~~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.~~

~~D. Cleanout and Segregation~~

~~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.~~

~~1. Systematic procedures shall be in place during production to keep compliant inputs, work in progress, and finished products separate from all materials that are not compliant with the Non-GMO Project Standard.~~

~~2. Segregation measures are also required for instances where any required testing occurs after the input in question has entered the facility (e.g., when a Participant, rather than an ingredient supplier, is taking responsibility for testing).~~

5 Inspections

5.1 ~~Unless the p~~Producing Facilities~~facility is exempt from inspection by an applicable part of this Standard, all facilities~~ are required to be inspected annually when Parallel Processing of the same Major High-Risk Input or Ingredient to a Product is occurring.

5.2 Unless the TA finds cause for inspection, inspections are not required for:

5.2.1 Products in which there are only Low-Risk Inputs and Ingredients.

5.2.2 Products in which the only Low-Risk and/or High-Risk Inputs and Ingredients are Minors or Micros compliant with Section 7.~~excluded from evaluation under Section II.D.3 or approved under Section VI.B.1.~~

5.2.3 Products produced in a facility where there is no Parallel Processing of the same~~pecific~~ Major High-Risk Inputs and Ingredients used in those Products.

~~Products of a facility that is dedicated to certified organic production, if no parallel processing of the specific Major High-Risk Inputs is occurring in the facility.~~

5.3 Contract processors that are not Participants are exempt from inspection through December 31, 2020.~~that comply with the requirements of Section IX.E.2. The contract processor's exemption from inspection under this Section IX.E.2. expires after 3 years, unless otherwise exempt from inspection. After that point, the Participant must EITHER:~~

~~a. Adopt a defined plan for bringing contract processor 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 contract operations. Such inspections shall be completed by an approved inspector.~~

5.4 At the TA's discretion, unannounced inspections may be used to ensure compliance with this Standard.

6 Sampling and Testing

All High-Risk Inputs and Ingredients must comply with the relevant Action Threshold through either this Section 6 or Section 7, unless otherwise allowed by a different section of this Standard. The combination of Weight Percentage, Risk Status, and Testability determines the pathways available for the demonstration of compliance with the relevant Action Threshold. Refer to Tables 3-2, 3-3, and 3-4 for summaries of the appropriate compliance pathways. ~~For use in a Verified Product, compliance with this Section V. is required for (1) Testable High-Risk Major or Minor Ingredients; (2) High-Risk Inputs present in feed of an animal-derived Major or Minor Ingredient;[8] and (3) Testable High-Risk Inputs present in the growth medium or feed of microbial Major or Minor Ingredients[9] (collectively referred to as "Testable High-Risk Inputs").[10] In order to be considered compliant under the Non-GMO Project Standard, tested samples are required to have sufficiently intact deoxyribonucleic acid (DNA).~~

~~[8] Compliance with Section VII.A. is also required for the animal-derived Major Ingredient.~~

~~[9] Compliance with Section VI. is also required for the microbial Major Ingredient.~~

~~[10] Compliance for Minor Ingredients may be established under Section VI. only if compliance with this Section V. is not available.~~

6.1 Action Thresholds

Absence of all GMOs is the target for all ~~Non-GMO Project Standard~~ Verified Products. Continuous improvement practices toward achieving this goal must be part of the Participant's quality assurance~~management~~ systems. A key outcome~~requirement~~ of such quality assurance~~management~~ systems is to meet or continually be below the applicable Action Threshold. Testable High-Risk Inputs and Ingredients that do not comply with the applicable Action Threshold ~~testing requirements~~ may not be intentionally used in Verified Products, unless otherwise allowed by a different section of this Standard.

The Non-GMO Project has established the following Action Thresholds for Testable High-Risk Inputs and Ingredients (Table 6-1).

Table 6-1. Action Thresholds

Category	Action Threshold[a]
Seed and vegetative~~other~~ propagation materials	0.25%
Wholesale or retail goods for human or pet use that are either ingested or topically applied including over the counter drugs and homeopathic remedies ~~Inputs to human food, ingredients, supplements, personal care products, and other products that are either ingested or applied directly to skin, and pet food~~	0.9%
Livestock, poultry, bee, and seafood feed and supplements, including those used for animal-derived Inputs and Ingredients to all ~~human food p~~Products	5%~~[b]~~
Wholesale or retail goods for human or pet use that are not ingested or topically applied including, but not limited to, Inputs and Ingredients to packaging, cleaning supplies~~products~~, and textiles ~~and other products that are not ingested or applied directly to skin~~	1.5%

[a] ~~For seeds of species not listed in Appendix B, and f~~For all crops~~species~~ not listed in Appendix B.1.1 and Appendix C.1.1 ~~Appendix B~~, there is no allowable presence.

[b] ~~This Action Threshold is based on the annual average of all lots tested.~~

Commented [A43]: The Non-GMO Project is considering eliminating the annual average pathway currently available for Testable Major High-Risk Inputs/Ingredients to feed rations. PLEASE CLICK HERE TO COMMENT (Questions 1 and 2).

~~B.~~6.2 Global Sampling Requirements~~Compliance Requirements~~

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

6.2.1.a The ~~Risk assessment and monitoring must be done according to a~~ sampling and testing plan must be approved by the TA prior to the submission of any test results acquired on the basis of said sampling and testing plan.

6.2.1.b Unless otherwise allowed by a different section of the Standard, compliant sampling and testing must occur at least once post-harvest for all Inputs and Ingredients, depending on contamination risks. ~~Sampling plans must be~~

~~designed to achieve 90% confidence in quantification of GMO at or below the applicable Action Threshold.~~

6.2.1.c When achieving statistical validity~~this level of confidence~~ through crop sampling cannot be done without destroying the consumer product ~~(e.g., for large crops such as sweet corn, zucchini and papaya)~~, the TA may shift testing ~~may be shifted~~ to the seed level with limited post-harvest spot testing.

Commented [A44]: Moved from v14.2 Section V.C.2.

6.2.2 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~~to reduc~~e~~ing the number of tests required~~. and therefore the cost for testing.~~

6.2.2.a Compositing must be done in a manner that ensures that any single sample in excess of the relevant Action Threshold produces a positive result for the composite sample as a whole. If a result is obtained for the composite which indicates that one or more single samples exceeds the relevant Action Threshold, the lot must be rejected, or if sub-lots were segregated and not commingled, then retesting of individual lot samples may be possible to salvage compliant lots.

Commented [A45]: Moved from v14.2 Section V.C.3.

6.3 Global Testing Requirements

6.3.1 Participants must demonstrate compliance with the applicable Action Threshold.

Commented [A46]: Moved from v14.2 Section V.B.1.

6.3.2 ~~In general, c~~Compliance must~~should~~ be demonstrated by ensuring that each ~~batch~~lot of Testable High-Risk Input or Ingredient is compliant with this Section 6~~V.B.~~ prior to its use in a Verified Product.

Commented [A47]: Moved from v14.2 Section V.B.1. second sentence.

6.3.3 The sample Matrix must be appropriate for the testing method to yield valid results. If necessary, the precursor from which the Input or Ingredient was derived must be tested.

6.3.3.a All GM events for which the Project requires testing must be tested for and the results must be conclusive.

6.3.3.b Test results must be traceable back to the lot number(s) of the precursor, Input, or Ingredient.

6.3.3.c From the point of ~~the PCR~~ testing forward, the Activities associated with the precursor, Input, or Ingredient must comply with Section 4.~~an IP system is in place to ensure the given lot of the input and precursor (if applicable) in question has not been exposed to any other GM material. All such systems are subject to review and must be approved by the TA.~~

Commented [A48]: Moved from v14.2 Section V.B.2.d.

6.3.4 Test results must be submitted to the TA for review prior to initial verification to ensure compliance with the applicable Action Threshold.

6.3.5 All test results from the preceding year must be submitted to the TA for review at ~~and~~ annual renewal to ensure continued compliance with the applicable Action Threshold.

Commented [A49]: Moved from v14.2 Section V.B.3.

6.3.6 In cases where the requirements of Section 6.1 are demonstrated to be problematic to achieve for every lot~~batch, and the product is not planting seed or other propagation material and does not contain an animal-derived input~~, compliance may be demonstrated by ensuring that test results for all lots~~batches~~ of High-Risk precursor, Input, or Ingredient used during each 6-month period average at or below the relevant Action Threshold, with no single ~~batch~~lot of precursor, Input, or Ingredient ever exceeding the relevant Action Threshold by more than a factor of two.

6.3.6.a Planting seed, vegetative propagation materials, and livestock, poultry, bee, fish, and other animal feed cannot demonstrate compliance via Section 6.3.6.

6.3.6.b The Participant is responsible for ongoing monitoring of test results to ensure compliance for each 6-month period. Test results in excess of a factor of two trigger a Major Nonconformity.

6.3.6.c This compliance pathway is available until [Insert Sunset Date Here], after which all lots of Testable High-Risk precursor, Input, or Ingredient must comply with Section 6.1, unless specified elsewhere in this Standard.

Commented [A50]: Moved from v14.2 Section V.B.4.

Commented [A51]: The Non-GMO Project is considering applying a sunset date of December 31, 2019 to the compliance pathway set forth in Section 6.3.6 of the redline of v14.2 of the Standard. PLEASE CLICK HERE TO COMMENT (Question 3).

Commented [A52]: Moved from v14.2 Section V.B.4.

Commented [A53]: The Non-GMO Project is considering applying a sunset date of December 31, 2019 to the compliance pathway set forth in Section 6.3.6 of the redline of v14.2 of the Standard. PLEASE CLICK HERE TO COMMENT (Question 3).

6.4 Molecular Testing Methods

6.4.1 Testable High-Risk Inputs and Ingredients shall be compliant with this Section 6.4~~e Standard~~ if all ~~of~~ the following criteria are met:

6.4.1.a Appropriate laboratory controls indicate that the DNA of the precursor, Input, or Ingredient ~~or the input's precursor~~ is sufficiently intact to allow valid quantitative analysis by ~~polymerase chain reaction (~~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.~~

6.4.1.b The testing ~~was~~is conducted by an approved laboratory in compliance with Section 6.4.2 ~~Section V.C.4.~~ and the analysis report is issued by the same laboratory and references by lot number the specific lot of precursor, Input, or Ingredient, ~~and precursor (where~~if applicable, used by the Participant.

6.4.1.c ~~A copy of the original result for t~~The PCR test shows that the GMO cont~~amination~~ent of the precursor, Input, or Ingredient~~or precursor~~ in question is at or below the relevant Action Threshold.

6.4.2 ~~**Approved l**~~**Laboratories approved** by the Project must carry out testing, except in cases where Inputs and Ingredients are compliant with Section 7.4. ~~shall be carried out by a laboratory that is accredited to ISO17025, and approved by the Non-GMO Project,~~ Such laboratories are accredited to ISO 17025 and must~~shall~~ use tests~~methods~~ that are included within the scope of their ISO 17025 accreditation for the Testable precursor, Input, or Ingredient in question. Approved laboratories possess a Certificate of Approval and are listed on the Project's website.

6.4.3 **Laboratory testing** may employ quantitative, semi-quantitative, or qualitative PCR when the following requirements can be met: ~~must target all commercialized GM events relevant to the input and the production system~~

6.4.3.a Quantitative PCR may be used to demonstrate compliance with the Action Threshold if:

6.4.3.a.i For each test panel conducted on a precursor, Input, or Ingredient, the sum of all test results is at or below the relevant Action Threshold. ~~Where quantitative results are required, the Real-Time or Digital PCR test must employ primers sufficient to accurately quantify the percent GM content for that event.~~

6.4.3.b Semi-quantitative PCR may be used to demonstrate compliance with the Action Threshold if:

6.4.3.b.i Appropriate laboratory controls indicate that the DNA of the precursor, Input, or Ingredient is sufficiently intact to allow for valid quantitative analysis using PCR;

6.4.3.b.ii the upper limit of the range in which the result is reported must be at or below the relevant Action threshold.

6.4.3.c Qualitative ~~analysis using Real-Time~~ PCR may be used to demonstrate compliance with the Action Threshold ~~is sufficient~~ if:

6.4.3.c.i The PCR limit of detection is 0.01%;

6.4.3.c.ii each test result for each Testable High-Risk precursor, Input, or Ingredient is negative; ~~GMOs are not detected; and~~

6.4.3.c.iii should any test result be positive for a GM event, the Testable High-Risk precursor, Input, or Ingredient must be tested in compliance with Section 6.4.3.a or Section 6.4.3.b to demonstrate compliance with the Action Threshold.

6.5 Immunological Testing Methods ~~-based Testing Using Strip Tests~~

6.5.1 Immunological testing methods such as Enzyme-linked Immunosorbent Assay (ELISA) or lateral flow strip tests may be used in lieu of molecular testing methods to demonstrate compliance of animal feed (other than pet food) with the appropriate Action Threshold, when the methods meet the criteria in this Section 6.5.

6.5.2 **Analysts must be trained and their performance** established ~~verified~~ to ensure that they use the tests reliably and according to the manufacturer's specifications. Participants shall document the in-house training and evaluation of performance.

6.5.3 **In cases where immunological testing methods** ~~lateral flow strip tests~~ **are permissible by this Standard**, they must cover all ~~commercialized~~ GM events for which the Project requires testing ~~input in question~~. Where all GM events for which the Project requires testing are not covered, samples must be tested in compliance with Section 6.4.

6.5.3.a Quantitative immunological methods may be used to demonstrate compliance with the Action Threshold when:

Commented [A54]: Moved from v14.2 Section V.C.5.b.3.

Commented [A55]: The Non-GMO Project is considering whether the limit of detection (LOD) for qualitative PCR should vary depending on the product category; for example, should testing for GMO contamination in seeds require a different LOD than in crops? PLEASE CLICK HERE TO COMMENT (Question 4).

Commented [A56]: Moved from v14.2 Section V.D.4.

6.5.3.a.i The result for each assay must either be below the limit of detection, or return a number within the range of quantification, and cannot go above the upper limit of the range of detection;

6.5.3.a.ii the sum of each test panel for the Testable High-Risk precursor, Input, or Ingredient is at or below the relevant Action Threshold.

6.5.3.b Qualitative immunological methods may be used to demonstrate compliance with the Action Threshold when:

6.5.3.b.i Each test result per GM event per Testable High-Risk precursor, Input, or Ingredient is negative;

6.5.3.b.ii should any test results be positive, the Testable High-Risk precursor, Input, or Ingredient must be tested according to Section 6.5.3.a, Section 6.4.3.a, or Section 6.4.3.b to demonstrate compliance with the Action Threshold.

7 Affidavits

Affidavits may be required in more than one situation to determine compliance with elements of the Standard.

7.1 Global Affidavit Requirements

7.1.1 All Affidavits must include the signature and the printed name of the party signing the Affidavit, and the date.

7.1.2 The party signing the Affidavit must have sufficient knowledge of the supply chain to authoritatively sign.

7.1.3 If appropriate, Affidavits should be accompanied by supporting documentation.

Commented [A57]: Moved from v14.2 Section VI.D.2.

7.1.4 All Affidavits must be updated on an annual basis at time of Product renewal.

7.2 Non-Testable High-Risk Inputs and Ingredients

7.2.1 For Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients (identified in Appendix B.2~~Appendix B, Section B~~), no point in the supply~~production~~ chain exists at which the non-GMO can be distinguished from its GMO counterpart ~~can be identified~~ using current testing methodologies. An Affidavit stating that any such Non-Testable High-Risk Major, Minor, or Micro Input or Ingredient is not the result of ~~product of genetic modification~~ Biotechnology is required to establish compliance with this Standard.

7.2.2 For any Non-Testable High-Risk Major, Minor, or Micro Input or Ingredient, an Affidavit must be submitted to the TA for review prior to initial verification and upon renewal as required to ensure compliance with this Section 7~~Section VI.A~~.

7.2.3 Testable ~~Major~~ High-Risk Major Inputs and Ingredients listed in Appendix B.1~~Appendix B, Section A, having a precursor with sufficient DNA intact for PCR testing~~ must be compliant with Section 6~~Section V.~~ or Section 7.4 and are not eligible for compliance

through an Affidavit. ~~alone.~~ Testable and Non-Testable High-Risk Inputs and Ingredients (listed in both Appendix B.1~~Appendix B, Section A,~~ and Appendix B.2)~~Appendix B, Section B~~, must comply with both Section 6~~Section V.~~ and this Section 7.

7.3 Testable High-Risk ~~Inputs as~~ Minor and Micro Inputs and Ingredients

7.3.1 ~~Only in cases where GMO analytical certificates or traceability linked to analytical certificates of precursors is not available, compliant status of~~ Testable High-Risk Minor and Micro Inputs and Ingredients may ~~be~~ demonstrate compliance~~verified~~ based on Affidavits ~~from suppliers,~~ as long as these Inputs and Ingredients are the result~~product~~ of a system that has been designed to avoid GMOs. ~~Organic certification is an example of such a system.~~ Suitability of systems designed to avoid GMOs~~other IP systems~~ is subject to review by the TA with the approval of the ~~Non-GMO~~ Project.

7.3.2 When available, valid certificates from third-party certifiers are acceptable alternatives to Affidavits under this Section 7.3~~VI.~~, when the third-party certification program satisfies the requirements for which an Affidavit would be used in Section 7.3.1.

Commented [A58]: Moved from v14.2 Section VI.D.3.

7.3.2.a Except for honey and other derivatives of apiculture, Testable High-Risk Minor and Micro Inputs and Ingredients that are certified organic do not require an Affidavit.

7.4 Affidavit Compliance Based on Geographic Origin[11]

7.4.1 The frequency or necessity of testing of certain Testable High-Risk crops and their Mono-input derivatives may be reduced by the TA with the approval of the Project based on an Affidavit.

7.4.2 The Affidavit must state that:

7.4.2.a Procurement procedures are in place throughout the supply chain requiring that the crop source or Mono-input derivative is grown strictly in specific geographic locations;

7.4.2.b No crop or crop-derivatives from outside that geographic location may be commingled; AND

7.4.2.c Procedures throughout the supply chain are in place for segregation, cleanout, and traceability of compliant materials from non-compliant materials.

7.4.3 When available, valid third-party IP certificates are acceptable alternatives to Affidavits when the third-party certification program satisfies the requirements for which an Affidavit would be used in Section 7.4.2.

~~An example would be cornstarch produced in a country where GMOs are prohibited, Non-GMO Project Standard compliant seed was confirmed as having been used, and documented identity preservation (IP) procedures are in place for the manufacture and transport of the input.~~

Commented [A59]: v14.2 Section III.B.1.a.

[11] The Project maintains the list of geographic locations (and associated frequencies and necessities of testing) that comply with Section 7.4.2.

7.5 Low-Risk Major, Minor, and Micro Inputs and Ingredients

7.5.1 Affidavits may be used to confirm compliance of Low-Risk Major, Minor, and Micro Inputs and Ingredients.

7.5.2 The Affidavit must attest to compliance with the requirement for classification as Low-Risk as described in Section 3.2, Table 3-1.~~Section III.A.~~

7.6 Non-Risk Major, Minor, and Micro Inputs and Ingredients

7.6.1 Affidavits may be used to confirm compliance of Non-Risk Major, Minor, and Micro Inputs and Ingredients.

7.6.2 The Affidavit must attest to compliance with the requirement for classification as Non-Risk as described in Section 3.2, Table 3-1.

~~**Affidavit Requirements**~~

~~Affidavits submitted under this Section VI. must be signed by the manufacturer of the input in question.~~

8 Special Requirements for Specific Products, Ingredients, and Inputs ~~Sectors~~

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

8.1 ~~Animal-Derived~~ Livestock and Poultry~~Inputs and Livestock Feed~~

Livestock and poultry-derived~~Animal-derived~~ Products, Ingredients, and Inputs are Testable and High-Risk. These Products, Ingredients, and Inputs comply with the sampling and testing requirements of the Standard ~~have 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~~ through the sampling and ~~on~~testing ~~feed~~ of Inputs to the animals' Rations and/or the seed used to grow the Inputs to the animals'~~feed~~ Rations. Feed Inputs to Rations must be classified based on their Weight Percentage within the Ration, Risk Status, and Testability. In all cases the animals cannot be GM nor can they have been treated with, nor have been derived from, Prohibited Substances listed under Section 2.2.3.

Commented [A60]: The Non-GMO Project is considering requiring classification of Inputs/Ingredients to feed rations on a Dry Matter basis rather than an As-Fed basis. PLEASE CLICK HERE TO COMMENT (Question 3).

8.1.1 Compliance of Livestock and Poultry-derived Products, Ingredients, and Inputs

Livestock and poultry-derived Products, and livestock and poultry-derived Ingredients and Inputs to Products, are considered Testable High-Risk and have different compliance pathways depending upon their Weight Percentage as present in the finished Product. Table 8-1 outlines the compliance requirements for livestock and poultry-derived Products, Majors, Minors, and Micros when the livestock or poultry-derived good is, or is present in, the Product under evaluation.

Table 8-1. Compliance of Livestock and Poultry-derived Products, Ingredients, and Inputs

Livestock and Poultry-derived Products, Ingredients, and Inputs
Product/Major
1. Animals must comply with Section 8.1.2, Life cycle 2. Major Inputs to Rations are within the scope of review and must be found compliant with Table 8-2 3. Inputs to Ration formulations are classified based on the combination of Weight Percentage as present in the Ration formulation, Risk Status, and Testability 4. Major High-Risk Inputs to the Ration formulation must comply with: a. Section 4, Chain of Custody, b. Section 8.1, Livestock and Poultry, c. Section 8.1.8, Farm Inspections. 5. In addition to Ration compliance, the livestock or poultry-derived material must comply with: a. Section 4, Chain of Custody, b. Section 5, Inspections, c. Section 8.1.8, Farm Inspections, d. Section 9, Product Specifications and Labeling, and e. Section 10, Quality Assurance
Minor
1. Comply with Standard requirements as a Product/Major **OR** 2. Comply with Section 7.3, Testable High-Risk Minor and Micro Inputs and Ingredients (e.g., organic certification)
Micro
1. Comply with Standard requirements as either a Product/Major **OR** 2. Comply with Standard requirements as a Minor **OR** 3. All Inputs to Rations are outside the scope of review; comply with Section 3.1.3, Micro Inputs and Ingredients

8.1.2 Life cycle~~Scope~~

Livestock and poultry~~Animal~~-derived Products, Ingredients, and Inputs must be from animals that comply with the following life cycle feed guidelines:

- Meat animals, including culls (other than poultry): starting at birth (the feed of nursing mothers is not evaluated) and ending at slaughter
- Poultry: starting on the ~~from~~ 2nd day after hatching and ending at slaughter

- Laying hens: starting 30 days prior to initial verification and for the remainder of the animal's productive life (including rest and molt periods)
- Dairy animals~~: and laying hens:~~ 30 days prior to initial verification and for the remainder of the animal's productive life (including dry periods)~~continuously thereafter~~

Animals cannot be intentionally cycled on and off compliant feed. The use of non-compliant Major Inputs to the animals' Rations triggers a Major Nonconformity. Removal of animals from a Non-GMO compliant herd for medical treatment is permitted, during which time their feed is out of the scope of review and their milk must not be collected for use in the Non-GMO supply chain. The animals must immediately resume Non-GMO compliant feed once treatment is concluded and may be returned to the herd.

~~Animal-derived Major Ingredients may be used in a verified product only if the feed of the animal from which the input is derived is compliant with this Section VII.A.~~

~~Animal-derived Minor Ingredients may be used in a verified product either by demonstration of compliance with this Section VII.A. or by an affidavit that the animal-derived input is the product of a system that has been designed to avoid GMOs in compliance with Section VI.C.~~

~~Animal-derived Verified-Status Inputs must comply with Section VI.C. and are exempt from review.~~

~~a. Live animals may not be verified under this Standard.~~

8.1.3 Compliance of Feed Rations

The Weight Percentage of Inputs to Rations is calculated based on the weight of the Input as present in the Ration formulation.

Table 8-2. Compliance of Inputs to Rations for Livestock and Poultry-derived Products and Majors

Testable High-Risk		
Major	**Minor**	**Micro**
1. Sampling and testing must comply with Section 8.1.4, Section 8.1.5, Section 8.1.6, and Section 8.1.7, as applicable 2. Comply with Section 4, Chain of Custody, from the point of testing onward 3. Farming operations must comply with Section 8.1.8, Farm Inspections	1. A limited number or amount of Testable and Non-Testable High-Risk Inputs, by Weight Percentage as present in the Ration, are out of scope 2. Testable and Non-Testable High-Risk Inputs in excess of that number or amount comply with Section 7, Affidavits	1. Out of scope **OR** 2. Comply with Section 7, Affidavits
Non-Testable High-Risk		
Major	**Minor**	**Micro**
1. Comply with Section 7.2, Non-Testable High-Risk Inputs and Ingredients 2. Comply with Section 4, Chain of Custody, from the point of compliance with Section 7.2, onward 3. Farming operations must comply with Section 8.1.8, Farm Inspections	1. A limited number or amount of Testable and Non-Testable High-Risk Inputs, by Weight Percentage as present in the Ration, are out of scope 2. Testable and Non-Testable High-Risk Inputs in excess of that number or amount comply with Section 7, Affidavits	1. Out of scope **OR** 2. Comply with Section 7, Affidavits

Commented [A61]: The Non-GMO Project is considering how best to limit the number of Testable and Non-Testable High-Risk Minor Ingredients that are exempt from evaluation in feed rations. PLEASE CLICK HERE TO COMMENT (Questions 4 and 5).

Commented [A62]: The Non-GMO Project is considering how best to limit the number of Testable and Non-Testable High-Risk Minor Ingredients that are exempt from evaluation in feed rations. PLEASE CLICK HERE TO COMMENT (Questions 4 and 5).

8.1.4 Feed samplingcompliance based on post-harvest testing

Compliance of Feed grown from commercially purchased seed and commercially purchased or produced feed shall be demonstrate compliance through the evaluation of, at minimum, Testable and Non-Testable of Major Inputs to the animals' Rations. Ongoing testing of Ingredients, including testing of Testable High-Risk Major Inputsgredients. is required.

8.1.4.a Commercially purchased feed for cCertified organic farming operations in which goodsproducts are pooled before final processing (e.g., dairy, ground meat, egg mixtures):

The sampling plan for certified organic operations shall be based on testing a composite sample of the High-Risk feed Inputs from a representative selection

of farms, with the intention of identifying and addressing any contamination occurring in the Participant's operation. ~~The f~~Farms shall be chosen based on the quarterly sampling density and selection requirements outlined in Table 8-3.~~for~~ Such sampling and testing shall be representative of the Participant's operations in a Region.[12]

8.1.4.a.i Regions

Regions must be designed such that farms within a Region are relatively similar and source their feed from the same or similar location(s). In order to inform the design of Regions, Participants should supply the TA with:

- farm locations within each state
- feed mill locations
- list of feed mills serving each farm
- processing facility locations
- proposed Regions

This basic documentation must be accompanied by a global rationale for what factors were considered in creating the different Regions, how the consideration of these factors leads to variation within the Participant's operation being captured among Regions, and how farms within a Region are more alike than different.

Commented [A63]: Moved from v14.2 Footnote 13

8.1.4.a.ii Quarterly sampling density and selection:

The number of farms within a Region determines the number of farms to be sampled. Fractions of farms are rounded up to the next whole number. Should a farm be chosen for sampling and testing and not have any Major High-Risk Inputs to sample and test onsite, another farm must be chosen at random from within that same Region.

Table 8-3. Quarterly Sampling Density Selection

Number of Farms per Region	Number of Farms to be Sampled and Tested
Fewer than 10 farms per region	minimum of 1 farm tested per region per quarter
10 to 20 farms per region	minimum of 2 farms tested per region
21 to 50 farms per region	10% of farms tested per region
51 to 100 farms per region	5% of farms tested per region
Over 100 farms per region	minimum of 6 farms tested per region

[12] ~~Region, as used in Section VII.A.3.b., is 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.~~

The sampling plan within each Region shall include a random selection of farms each quarter. Annual sampling plans shall be reviewed with the TA 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.~~

Farms should retain a portion of each sample until test results come back compliant, in case re-testing is necessary or a sample tests above the Action Threshold and the Participant must seek the cause of contamination.

8.1.4.a.iii Ration Reporting within the Regional Model

All farms in the Participant's supply chain must be prepared to supply full Rations to TAs. Full Ration reporting may include all Rations fed annually from every farm that is part of the Participant's operation or, at minimum, must include the full Rations from the previous quarter and any additional Major High-Risk Inputs to the current Rations, if not captured in the previous quarter's Rations, of each farm randomly selected for sampling and testing by the TA. The Major High-Risk Inputs to the Rations must be evaluated and found compliant.

8.1.4.a.iv Testing within the Regional Model

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 of any significant changes in the frequency of GMO presence in ~~livestock~~ feed Inputs, the percentage of samples exceeding the Action Threshold, and steps taken to secure feed that tests at or below the Action Threshold.

8.1.4.b Certified organic farming operations in which goods are not pooled (e.g., shell eggs, cut meat), and conventional farming operations~~Commercially purchased feed for all non-organic operations in which products are pooled or not pooled before final processing, and all certified organic operations in which products are not pooled before final processing (e.g., shell eggs, cut meat)~~:

The sampling plan for certified organic farming operations in which goods are not pooled and ~~non-organic~~conventional farming operations ~~and for certified organic operations in which products are not pooled before final processing must~~may include either:

8.1.4.b.i Sampling of every incoming lot of Testable High-Risk Major Input, testing each sample in compliance with Section 6.5 by each farmer in the Participant's operations, and quarterly averaging of results to comply with the Action Threshold; **OR**

8.1.4.b.ii Sampling of every incoming lot of Testable High-Risk Major Input, compositing of samples, and quarterly testing of composite ~~feed~~ samples ~~for each shipment of feed purchased~~ by each farmer in the Participant's operations in compliance with Section 6.2.2.

8.1.5 Testing methodology

The testing method must yield valid results for all Testable ~~Major~~ High-Risk Inputs~~Ingredients~~. Immunological testing methods may be used when compliant with Section 6.5. Molecular testing methods compliant with Section 6.4 must be used where immunological testing methods cannot be used, and may be used in all cases in lieu of immunological testing methods.~~When feed inputs can be isolated into their raw material components, strip testing may be used. When feed inputs are tested as a composite, PCR testing must be used.~~

Commented [A64]: Moved from v14.2 Section VII.A.3.a.

8.1.6 Feed compliance based on use of compliant seed

Under certain circumstances, compliance of Livestock and poultry feed may be demonstrated based on use of compliant seed; in such cases post-harvest feed testing is not required.[13] Neither compliant seed, nor feed derived from compliant seed, is eligible for verification under Section 8.1.6.a and Section 8.1.6.b.

8.1.6.a **Farmer-saved seed** and seed purchased from any neighboring farmer who does not have a retail seed operation must be tested annually. Frequency of testing should increase if there are any changes that would significantly increase the likelihood of contamination. Testing may be conducted in compliance with either Section 6.4 or Section 6.5. If testing is conducted in compliance with Section 6.5, and the immunoassay is positive for any event, samples must be re-tested with molecular testing methods per Section 6.4 to demonstrate compliance with the 0.25% Action Threshold. If the sample tests above the Action Threshold, it cannot be planted.

Commented [A65]: Taken from v13 Section VI.A.1.c.

Commented [A66]: Taken from v13 Section VI.A.1.c.

~~**Strip testing below 0.25% Action Threshold.** 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~~

[13] ~~From the date of initial enrollment, Participants have a transition period to bring all seed into compliance with the requirements in Section VII.A.2.a. During the transition period, seeds must be the product of a system designed to avoid GMOs or comply with Section VII.A.2.a.~~

~~that would significantly increase the likelihood of contamination (e.g., a new neighbor planting GMOs). If the strip test results are positive for levels over the Action Threshold set forth in Section V.A., samples must be submitted to a lab for quantitative PCR testing. If the seed is over the 0.25% Action Threshold, the seed may not be planted. This provision is only available in cases where farmers are growing their own feed onsite.~~

8.1.6.b **High-moisture Crops.** When post-harvest testing is not feasible for High-moisture Crops, compliance may be demonstrated through seed testing. In all cases, the grower must demonstrate traceability from the planted field to the harvested feed crop.

Commented [A67]: The Non-GMO Project is proposing the following definition of High-Moisture Crops: *"A High-Moisture Crop contains 20% or more moisture content and is fermented."* PLEASE CLICK HERE TO COMMENT (Question 6).

Commented [A68]: Moved from v14.2 Section VII.A.2.b.iii.

8.1.6.b.i When test results are available ~~from the seed supplier~~, each lot of seed planted must be compliant with Section 6~~. of this Standard~~ and test at or below the Action Threshold.

8.5.1.6.ii When test results are not available ~~from the seed supplier~~, each lot of seed planted must have a ~~receipt of the seed supplier~~ seed tag, an Affidavit ~~letter~~ from the seed supplier establishing that the seed is not the result of Biotechnology,~~non-GM,~~ and an invoice and Affidavit from the grower confirming planting location.

8.1.6.b.iii When Verified-Status seed is planted, each lot of seed must have the seed supplier seed tag, an invoice, and an Affidavit from the grower confirming planting location.

8.1.7 **Feed Mills~~Commercially produced feed~~:**

8.1.7.a Rations formulated by feed mills may be found compliant with Section 8.1 if:

8.1.7.a.i Every lot of Testable Major High-Risk Input to the Ration complies with Section 6.

8.1.7.a.ii Every lot of Non-Testable Major High-Risk Input to the Ration complies with Section 7.~~Commercially produced feed may be verified on the basis of compliance of Major Ingredients, including the testing of Testable High-Risk Major Ingredients.~~

8.1.7.b Or, feed sold by feed mills may be found compliant with Section 8.1 if:

8.1.7.b.i Every incoming lot of Testable High-Risk crop destined for the Non-GMO supply chain, regardless of future Weight Percentage in the on-farm Ration, complies with Section 6, **AND**

8.1.7.b.ii Every incoming lot of Non-Testable High-Risk crop destined for the Non-GMO supply chain, regardless of future Weight Percentage in the on-farm Ration, complies with Section 7, **AND**

8.1.7.b.iii The Non-GMO integrity of every Testable and Non-Testable High-Risk crop compliant with Sections 8.1.7.a and 8.1.7.b is maintained through compliance with Section 4.

~~i. The testing method must yield valid results for all Testable Major High-Risk Ingredients.~~

~~ii. When feed inputs can be isolated into their raw material components, strip testing may be used as described in Section V.D.~~

~~When feed inputs are tested as a composite, PCR testing must be used as described in Section V.C.~~

8.1.8 ~~Onsite~~Farm Inspections ~~for farms~~

This section is in addition to the provisions of Section 5.~~Section IV.C.~~ Inspections may be completed via a group certification model. In order to be considered compliant, the Participant's internal control system (ICS) staff must conduct a documented assessment visit to each farm at least once every year.

8.1.8.a In addition to the ICS, third-party inspections must be conducted on 10% of all farms every year. Results of the third-party inspection will be compared with the results of the ICS assessment of the farms to verify the effectiveness of the ICS process.

8.1.8.b For certified organic operations, additional inspections (beyond those required for organic certification) are not required.

Commented [A69]: The Non-GMO Project is considering further developing the content set forth in the Standard regarding inspection of livestock and poultry farms where such operations are employing an Internal Control System. PLEASE CLICK HERE TO COMMENT (Question 7).

8.2 Apiculture~~Honey and Bee-Produced Inputs~~

Honey and other goods derived from apiculture~~inputs produced from bees~~ must meet the following requirements:

8.2.1 The bees' forage area (defined as the area within a 4-mile radius of the hives) must be sufficiently free of GM commercial agriculture. ~~to minimize contamination of the bees with GM pollen.~~

8.2.2 Any supplemental~~non-forage~~ bee feed ~~for the bees~~ must be evaluated for compliance with Section 3. All Major, Minor, and Micro Inputs to bee feed are within the scope of review and must be found compliant.~~the required compliance measures listed in Section III.A. for High-Risk Inputs.~~

8.2.3 Certified organic honey and other Inputs or Ingredients derived from apiculture may be deemed compliant with the Standard based on a signed Affidavit from an organic certifier. The Affidavit must:

8.2.3.a Meet all requirements of Section 7;

8.2.3.b attest that the organic certifier has confirmed that the apiary is adhering to the Organic Apiculture Standard as formally recommended by the National Organic Standards Board (NOSB) to the National Organic Program (NOP). [14]

8.3 ~~Wild-Caught and Farm-Raised~~Seafood

8.3.1 Farm-raised seafood (in captivity from egg to harvest and/or where nutrient additions are provided) shall be fully evaluated as an animal-derived High-Risk Product, Ingredient, ~~put~~ or Input and requires the evaluation of ~~feed~~ Ration ~~and other~~ Inputs. Products, Ingredients, and ~~or~~ Inputs derived from farm-raised ~~such~~ seafood shall be evaluated in the same manner as animal-derived Inputs in Section 3 ~~Section II.A.~~ and Section 8.1. ~~Section VII.A.~~

8.3.2 The feed of wild-caught seafood may be found compliant under Section 7.5 if the ~~shall be treated as Low-Risk Inputs if documentation or a~~Affidavit establishes that the organism was caught in the wild.

8.4 ~~Growth Media for Certain~~ Vitamins and Supplements ~~Inputs~~

~~Based on demonstrated lack of commercial availability, t~~The growth media for probiotic Microorganism ~~inputs~~Inputs and Ingredients, and the growth media for Microorganisms from which ~~that produce e~~Enzyme Inputs and Ingredients to vitamin and supplement Products are derived, are temporarily outside the scope of evaluation. ~~[15]~~ This temporary exemption will be revisited during ~~exclusion is in effect until after~~ the 2020 comment period.

Commented [A70]: Moved from v14.2 Footnote 14.

8.5 Beer, Wine, and Liquor

8.5.1 Fermentation Microorganisms used in the production of beer, wine, and liquor Products, Ingredients, and Inputs are not considered Processing Aids under the Standard, are ineligible for Section 3.1.3.a, Micro Exemption, and cannot be the result of Biotechnology.

8.5.2 Processing Aids used in the production of beer, wine, and liquor are subject to the same compliance requirements as Section 2.2.2.

8.5.3 Inputs to the fermentation media for beer, wine, and liquor Products, Ingredients, and Inputs are classified according to their Weight Percentage as represented in the finished Product, Risk Status, and Testability and found compliant according to the appropriate compliance pathways. ~~For retail consumer goods without ingredient panels, such as beer and wine, GM microbes, enzymes derived from GMOs, and products of synthetic biology, are not allowed in the final production stages.~~

8.5.4 Beer, wine, and liquor ~~These consumer~~goods will be held to the same level of evaluation as those with Ingredient panels.

Commented [A71]: Moved from v14.2 Footnote 6.

[14] NOSB. 2010. Formal Recommendation by the National Organic Standards Board (NOSB) to the National Organic Program (NOP), Subject: Apiculture Recommendation. October 28, 2010. https://www.ams.usda.gov/sites/default/files/media/NOP%20Livestock%20Final%20Rec%20Apiculture.pdf

[15] ~~This temporary exclusion is in effect until after the 2020 comment period.~~

8.6 Microorganisms

When Microorganisms, or Inputs or Ingredients derived from Microorganisms, are Products, or are Major or Minor Ingredients, both the Microorganism and the growth media are within the scope of review and must be found compliant. Inputs to growth media must be categorized into Major, Minor, and Micro Ingredients based on their representative Weight Percentage in the finished Product and found compliant according to the appropriate compliance pathways. When Microorganisms, or Inputs or Ingredients derived from Microorganisms, are Micro Ingredients, the Microorganism is within the scope of review, but the growth media is not.

9 Product Specifications and Labeling

9.1 Specifications for Obtaining Inputs and Ingredients

9.1.1 For Products verified under the PVP~~rogram~~, Participants shall not knowingly plant, purchase, or use Inputs or Ingredients that are not compliant with the Standard.

9.1.2 The written specifications for all Products, Ingredients, and Inputs ~~and products~~ shall include requirements regarding Standard compliance and shall be updated when the Participant changes suppliers, Inputs, or Ingredients~~inputs.~~

9.1.3 When spot purchasing is necessary, unverified Inputs and Ingredients should be avoided; Participants must seek out ~~Non-GMO Project~~ Verified-Status Inputs and Ingredients. If a spot purchase of unverified Input or Ingredient is made, the Participant must justify to the TA why a Verified-Status Input or Ingredient was not used. Spot purchases of unverified Inputs or Ingredients are only allowed on the following basis: Any Testable High-Risk Input that is spot purchased must be tested in accordance with the requirements of this Standard and must be at or below the relevant Action Threshold.

9.1.3.a Any Non-Testable High-Risk Input or Ingredient, Verified-Status Input or Ingredient, or Low-Risk Input or Ingredient that is spot purchased must be compliant with all applicable ~~affidavit~~ requirements of Table 3-4 and Table 3-2, respectively~~of this Standard~~.

9.1.3.b The Participant must provide the TA with documentation of the purchase, including Affidavits, sampling information, and test results. This reporting shall be done at least once per year, according to a schedule determined by the TA and the Participant.

9.1.3.c Constraints on spot purchasing may be enforced at the discretion of the TA. For example, repeated spot purchases from the same supplier could be grounds for this allowance to be revoked or restricted.

9.2 Labeling

9.2.1 Wholesale and retail Products must comply with the labeling requirements outlined in this Standard.

9.2.2 The TA will review labels to assess compliance with these claim guidelines.

Commented [A72]: Moved from v14.2 Section VIII.B.3.

9.2.3 **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 verification mark must be approved by a written agreement with the ~~Non-GMO~~ Project. ~~Examples of c~~Claims that imply 100% absence are not acceptable and include, but are not limited to, "contains zero GMOs," "GMO-free," and "GE-free."

9.2.4 "Made with" Text-only Claim

The "made with" text-only claim ~~is a text-only claim.~~is "Made with ~~The~~ Non-GMO Project Verified ." The Non-GMO Project ~~verification~~ trademark may not be used on retail consumer goods~~products~~ approved under this Section 9.2.4. ~~Section VIII.B.2.~~ The "made with" text-only claim may only be made in relation to Verified-Status ~~approved compliant~~ High-Risk Major Ingredient(s) or a Verified-Status High-Risk Major Defining Ingredient in retail consumer goods that satisfy Section 9.2.4.a or Section 9.2.4.b, respectively. Derivatives of fermentation as retail consumer goods, or Inputs or Ingredients to wholesale goods, are ineligible for "made with." ~~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."~~

Retail consumer goods with formulations containing animal-derived Ingredients, derivatives of apiculture, or a single High-Risk Major Defining Ingredient, may use a "made with" claim in accordance with the following guidelines:

9.2.4.a For consumer goods containing animal-derived Ingredients and/or derivatives of apiculture: ~~**Certain products made with animal-derived, bee-produced inputs, or single compliant High-Risk Major Defining Ingredients may use a "made with" claim** in accordance with the following guidelines:~~

9.2.4.a.i The animal-derived Ingredients and Ingredients derived from apiculture~~bee-produced inputs~~ may not collectively constitute more than 25% of the retail consumer good~~product~~ and none may ~~not~~ be a Defining Ingredient.

9.2.4.a.ii The retail consumer good~~product~~ must contain at least one~~compliant~~ High-Risk Major Ingredient other than those sourced from animals or apiculture~~the animal-derived and bee-produced inputs (e.g., corn meal, soy flour)~~ constituting 5% or more of the formulation. ~~than 5% of the product.~~

9.2.4.a.iii The High-Risk Major Ingredient(s) for which the "made with" claim is sought must be verified as Product(s) under this Standard.

9.2.4.a.iv The retail consumer good may not contain any Prohibited Inputs or Ingredients (Section 2.2.3). Affidavits (Section 7) may satisfy this requirement.

9.2.4.b For consumer goods not containing animal-derived Ingredients and/or derivatives of apiculture:

Commented [A73]: The Non-GMO Project is considering deleting the option to make a "Made with" text-only claim. PLEASE CLICK HERE TO COMMENT (Question 1).

Commented [A74]: Moved from v14.2 Section VIII.B.2.e.

Commented [A75]: Moved from v14.2 Section VIII.B.2.c.

Commented [A76]: Moved from v14.2 Section VIII.B.2.

9.2.4.b.i The consumer good must contain~~When a "made with" claim is being used for a product that does not contain any animal-derived or bee-produced inputs, the~~ a single compliant High-Risk Major Defining Ingredient that~~must~~ constitutes at least 70% of the formulation.~~finished product (for example, an algae product in a vegetable capsule).~~

9.2.4.b.ii The "made with" claim must be sought for the single compliant High-Risk Major Defining Ingredient.

9.2.4.b.iii The High-Risk Major Defining Ingredient for which the "made with" claim is sought must be verified as a Product under this Standard.

~~If the product contains dairy inputs, supplier affidavits must show that no rBGH or rBST was used.~~

10 Quality Assurance

10.1 Total Quality Management ~~Assurance~~ Systems

10.1.1 The Participant's quality assurance and quality control program, including SOPs, forms, and documents, shall be revised as needed to ensure compliance with the Standard, and revisions shall be documented.

10.1.2 Compliance with applicable requirements of the Standard shall be identified as key quality indicators of the Participant's total quality system.~~products and SOPs shall be revised, or added where necessary, to incorporate measures that ensure such compliance with the Standard.~~

10.1.3 The Participant shall monitor and control~~verify~~ the compliance of Inputs and Ingredients purchased and finished Products~~ and products sold~~, and this shall be documented.

Commented [A77]: Moved from v14.2 Section IX.B.2.

10.1.4 Where needed, additional training shall be provided to relevant staff to ensure that SOPs in support of Standard compliance are ~~they are capable of fulfilling their duties in a manner that supports compliance of the operation, and the products produced, with the Standard~~followed and training shall be documented.

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

~~6.~~**10.1.5** All SOPs, documents, forms, ~~reference materials,~~ and specifications needed by personnel to fulfill the requirements of the Standard shall be readily available to relevant personnel.

10.1.6 Records shall be retained for a minimum of 3 years.

10.2 Nonconformities and Corrective Actions

10.2.1 Global Nonconformity and Corrective Action Requirements

10.2.1.a Changes~~Nonconformities~~ in processes, procedures, Inputs, Ingredients, or Products, which could impact compliance with any aspect of the Standard, are deemed Nonconformities and shall trigger corrective actions.

10.2.1.b Nonconformities discovered during the Program application or renewal process must be resolved 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, or third-party audits, shall require corrective action as described below.

10.2.1.c Identification of Nonconformities, corrective actions, root cause analyses, and successful remediation of the Nonconformity shall all be documented.

Commented [A78]: Moved from v14.2 Section IX.C.5.

10.2.2 Major Nonconformities

Major Nonconformities shall be reviewed at the time of occurrence, documented, and immediately reported in writing to the TA by the Participant.

10.2.2.a Discovery of any Major Nonconformity must be followed by a timely root cause analysis. "Timely" is typically considered to be within 7 days and rarely longer than 30 days. ~~Longer delays must be justified in writing including the planned root cause analysis. An explanation of the action steps already being taken must be provided along with the expected completion date of the root cause analysis.~~

10.2.2.b Findings of the root cause analysis must be reported in writing to the TA, together with the planned corrective actions to be undertaken.

10.2.2.c Corrective action plans shall include the identification of persons responsible for their execution, defined timelines for actions, and the desired results of the corrective action plan.

Commented [A79]: Moved from v14.2 Section IX.C.3.c.

10.2.2.d The TA will review and approve the findings of the root cause analysis and the planned corrective actions.

Commented [A80]: Moved from v14.2 Section IX.C.3.c.

10.2.2.d.i Under certain circumstances, the Participant may propose blending ~~When~~ a non-compliant tested lot ~~is mixed~~ with a compliant tested lot as part of their corrective action plan. This optional cure is temporary and shall not be incorporated into the Participant's SOPs nor implemented on a recurring basis. In this case, the Participant must:

- demonstrate that a homogenous blend was achieved;
- retest the blend in accordance with Section 6;
- confirm that ~~prior to testing. In all cases,~~ the finished lot tests at or below the relevant Action Threshold;
- and implement and document practical continuous improvement practices to reduce, and ultimately eliminate, the need for any future blending of lots.

Commented [A81]: The Non-GMO Project is proposing these changes to clarify the intention that this option may be exercised on a temporary basis and is not to be implemented on a recurring basis. PLEASE CLICK HERE TO COMMENT (Question 2).

~~Investigate and document the cause of any individual lot's contamination over the relevant Action Threshold.~~

~~. An example of one such practice would be to help growers secure Non-GMO Project Standard compliant planting seed.~~

10.2.2.e Corrective actions must be completed in a timely manner, typically within ~~15~~30 days, rarely longer than 90 days, of the completion of the root cause analysis. Documentary evidence must be submitted to the TA within 5 days of the completion of 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 TA will review and approve all corrective action evidence.

10.2.2.f Any delays in the timeline from reporting to completion of corrective actions must be justified in writing and approved by the TA.

10.2.2.g Any known Major ~~known~~ Nonconformity that goes unreported and/or uncorrected and/or keeps recurring according to the requirements in Section 10.2.2~~Section IX.C.3.~~ shall be cause for the Product or the Participant to be removed from the PVP~~rogram~~. Prior to removing the Participant or Product from the PVP~~rogram~~, the TA must notify the Participant via email of this intended action. The Participant will have 10 days from date of said notice to provide all required documentary evidence to avoid withdrawal from the PVP~~rogram~~.

10.2.2.h Repeated nonconformance with the Action Threshold may require mid-term reevaluation of the Product~~, possibly including an onsite inspection and/or input supplier verification.~~

10.2.3 Minor Nonconformities

10.2.3.a Minor Nonconformities shall be reviewed at the time of the annual evaluation. Verification renewal shall be contingent upon appropriate resolution of any such Nonconformity.

10.3 Renewal

Renewal evaluation of every Verified Product shall be required at least annually. Renewal evaluation must ensure that all compliance requirements are active, current, and have been met, no changes to the Product or its manufacture and processing that would compromise the Product's compliance with this Standard have occurred, and that the Product is compliant with any applicable Standard revisions. The TA 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, but are not limited to, the following: changes in Product composition that involve High-Risk Inputs or Ingredients, changes in suppliers of High-Risk Inputs or Ingredients, changes in processes or procedures that alter the segregation, cleanout, or traceability of Inputs, Ingredients, or Products, or changes in

specifications of High-Risk Inputs, Ingredients, or of a final Product that contains High-Risk Inputs and Ingredients.

10.4 Participation

10.4.1 **In addition to Participants,** suppliers, distributors, ~~and~~ contract processors, and other members of the CoC shall also provide information to TAs as necessary to confirm ~~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 Non-GMO Project Board of Directors based on an evaluation of said program by the TA using a procedure duly approved by the Board of Directors. In such cases, certificates of compliance from such a program may be accepted as equivalent to verification by the Non-GMO Project.~~

~~**1. Participants with Contract Processors**~~

~~2. 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 contract 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. Organic certification is an example of such a system. All such systems are subject to review by the TA, especially in cases where parallel processing occurs within the certified system (e.g., processing certified organic soybeans in both Non-GMO Project verified and non-verified forms). In such cases, lot-by-lot IPs will likely be necessary.~~

Appendix A –Terms and Definitions

Affidavit – A written and signed statement confirming specific characteristics of a given organism, crop, precursor, Input, and/or Ingredient.

Biotechnology[16] **–** the application of:

a. in vitro nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA) and the direct injection of nucleic acid into cells or organelles; or
b. fusion of cells beyond the taxonomic family, that overcame natural physiological, reproductive, or recombination barriers and that are not techniques used in traditional breeding and selection.

Certificate of Approval – Annually renewed document confirming a laboratory's current compliance with, and participation in, the NGP Approved Laboratory Program. It includes the list of High-Risk crops for which the laboratory is approved to test.

Certificate of Verification (COV) – Annually renewed document demonstrating Product level compliance with the Standard, as determined by a Technical Administrator.

Compliant/Compliance – In accordance with the referenced and applicable requirement of this Standard. Compliance refers to one or more particular Standard sections ~~requirements,~~ as opposed to the Standard or PVP~~rogram~~ as a whole.

~~**Component –** An input to an input (excluding processing aids).~~

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 material present in the finished Product ~~defining ingredient is an ingredient~~and whose name appears on the Product's principal display panel.~~name of the product.~~

Enzyme – A protein molecule produced by a living organism, which acts as a catalyst to bring about a specific biochemical reaction.~~; specific examples include chymosin, catalase, and amylase.~~

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.

Genetically Modified or Genetic Modification (GM)~~— Genetically Modified or Genetic Modification~~—A term referring to processes of Biotechnology used to create GMOs.

[16] Secretariat of the Convention on Biological Diversity (2000). Cartagena Protocol on Biosafety to the Convention on Biological Diversity: text and annexes. Montreal: Secretariat of the Convention on Biological Diversity

~~GMO or~~ **Genetically Modified Organism** (GMO) – An organism in which the genetic material has been changed through biotechnology in a way that does not occur naturally by multiplication and/or natural recombination; cloned animals are included within this definition.

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

High-moisture – Describing Inputs to feed Rations containing at least 20% water and are fermented.

Ingredient – Any material or substance including, but not limited to, preservatives, sweeteners, color additives, flavors, spices, flavor enhancers, fat replacers, nutrients, emulsifiers, stabilizers, thickeners, binders, texturizers, buffers, acidulants, leavening agents, anti-caking agents, humectants, dough strengtheners, dough conditioners, firming agents, and enzyme preparations ~~input, including an additive,~~ used in the creation ~~manufacture or preparation~~ of a ~~product~~ wholesale or consumer good and present in said good, ~~the finished product~~ although possibly in a modified form.

Input – Any material or substance that ~~becomes a part of the finished product, or a component of which becomes a part of the finished product, or~~ is used in the activities along the CoC during ~~otherwise in~~ the production of a consumer or wholesale good~~product~~. ~~These include the following:~~

- ~~Agricultural materials, such as seeds, fertilizers, and pesticides.~~
- ~~Unprocessed agricultural materials, such as vegetables, grains, fruit, greens, herbs, and other fresh foods.~~
- ~~Feed materials, such as grains, forage plants, vitamins, enzymes and minerals.~~
- ~~Livestock production materials, such as vaccines, hormones, and other veterinary materials.~~
- ~~Manufacturing and processing materials, including ingredients, flavorings, seasonings, colorings, additives, enzymes, cultures, and all other substances present in final manufactured products.~~

~~This definition does not distinguish between "mono" (composed of only one component) or "compound" (composed of more than one component) inputs. If the product is made of only one input, with no components (e.g., a "single input product"), the input and the product are the same.~~

Major Nonconformity – A ~~major nonconformity is a~~ deviation that could affect the compliance of an Ingredient with the relevant Action Threshold, such as unintentional contamination of the Ingredient with GM material, or that could affect the compliance of an Input or Ingredient with Section 7.2~~Section VI.A~~.

Matrix – sample constituents other than the analyte of interest. This encompasses the composition of the sample (single or multi ingredient) and the state of processing (raw grain vs flour). The matrix can have a large impact on the effectiveness of a testing method, and a testing method run on the wrong sample matrix could yield invalid results.

Commented [A82]: The Non-GMO Project is proposing the following definition of High-Moisture Crops: *"A High-Moisture Crop contains 20% or more moisture content and is fermented."* PLEASE CLICK HERE TO COMMENT (Question 6).

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~~**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.~~

Microorganism~~**Microbe**~~ **–** A microscopic organism (such as~~microorganism, especially~~ a bacterium, yeast, ~~or~~ fungus, or alga). ~~causing fermentation or otherwise metabolizing media. Specific examples include yeasts (e.g., *Saccharomyces*) and bacteria (e.g., *Lactobacillus*).~~

Minor Nonconformity – A ~~minor nonconformity is a~~ deviation that could not cause any of the relevant inputs to the Product to exceed the relevant Action Threshold. This includes small~~minor~~ changes to procedures, recordkeeping, documentation, or anything else small~~minor~~ that does not have the potential to impact compliance with the relevant Action Threshold.

Mono-input – A material containing a single Input.

Nonconformity – Any deviation in operations that has not been approved by the TA.

Non-GMO or Non-GM – An organism or derivative of such an organism whose genetic structure has not been altered by, nor been exposed to, Biotechnology.

Non-Risk Category - A group of one or more types of wholesale or retail goods whose formulations involve no Inputs nor Ingredients of biological origin.

Non-Testable – Not having any precursor at any point in the supply chain for which current testing methodologies can distinguish between the wild type and genetically modified versions.

Parallel Processing – The practice of using the same facility for handling both ~~Non-GMO~~ Project-compliant and non-compliant Inputs, Ingredients, and/or Products.

Participant – A company that is seeking verification within the Product Verification Program and signs a License Agreement with the Project.

Principal Display Panel[17] – Portion of the package label that is most likely to be seen by the consumer at the time of purchase (often the front face of the packaging).

Processing Aid[18] **–** (a) Substances [Inputs] that are added to a food [Product or Ingredient] during the processing of such food but are removed in some manner from the food before it is packaged in its finished form. (b) Substances [Inputs] that are added to a food [Product or Ingredient] during processing, are converted into constituents normally present in the food, and do not significantly increase the amount of the constituents naturally found in the food. (c) Substances [Inputs] that are added to a food [Product or Ingredient] for their technical or functional effect in the processing but are present in the finished food at insignificant levels and do not have any technical or functional effect in that food.~~An input that is (1) added during the processing of the product but is removed in some manner from the product before it is packaged in its final form; (2) added during the processing of the product and converted into~~

[17] U.S. Department of Health and Human Services. 2013. A Food Labeling Guide, Guidance for Industry. January, 2013. https://www.fda.gov/downloads/food/guidancecomplianceregulatoryinformation/guidancedocuments/foodlabelingnutrition/foodlabelingguide/ucm265446.pdf

[18] 21CFR §101.100 2017

~~constituents normally present in the product and which does not significantly increase the amount of the constituents naturally found in the product; or (3) added to the product for its technical or functional effect during processing but is present in the finished product at insignificant levels and does not have any technical or functional effect in the finished product.~~

Producing Facility – Location where Inputs and Ingredients are combined to create the finished Product.

Product – A unique branded formula and process, where process could be either the manufacturing or facility process. "Product" refers to products that are involved in the Non-GMO Project Product Verification Program.

Ration – The feedstuffs fed to an animal during a 24-hour period.

Region - 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.

Commented [A83]: Moved from v14.2 Footnote 13.

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.

Supplier – Any party from whom an Input and/or Ingredient is obtained.

Synthetic Biology (synbio) –The development of novel, artificial nucleic acid sequences, biological pathways, organisms, or devices or the redesign of existing natural biological systems.

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

Testable – Having one or more precursors at at least one point in the supply chain for which current testing methodologies can distinguish between the wild type and GM versions.

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 prevent GMO contamination.

Verified – A finished Product's status when the TA establishes that the Product is compliant with all applicable requirements of this Standard and has satisfied all other elements of the PVP. Verified refers to the ~~Standard or~~ PVP~~rogram~~ as a whole, as opposed to particular requirements.

Viable Microorganism~~be~~ – A microorganism~~be~~ that performs metabolic functions and reproduces/multiplies.

Appendix B – High-Risk List[19]

Organisms, and Products, Ingredients, and Inputs derived from organisms, for which GM versions are widely commercially available; this includes certain crops, their derivatives, and animal-derived materials.

Commented [A84]: Moved from v14.2 Footnote 15.

B.1 Testable High-Risk Inputs and Ingredients

B.1.1 Crops

The following list of Testable High-Risk crops is exhaustive:

- Alfalfa
- Canola[20]
- Corn (except popcorn)
- Cotton
- Papaya
- Soy
- Sugar beets
- Zucchini and yellow summer squash

B.1.2 Animal-derived Inputs and Ingredients~~Processed Inputs/Derivatives~~[21]

- Meat, dairy, eggs, wool, hides, honey, seafood, and any other materials or substances originating from animals
- Livestock and poultry feed
- Bee forage and feed
- Fish and other aquatic animal~~, and Aquaculture~~ feed[22]

B.1.3 Inputs, Ingredients, and ~~Crop~~ Derivatives

- Ascorbic acid, sodium ascorbate, vitamin C
- Citric acid, sodium citrate – derived from glucose syrup
- Ethanol – derived from corn or GMO sugar beets
- Corn syrup
- Hydrolyzed vegetable protein
- Maltodextrins
- Molasses – derived from sugar beets

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[19] ~~Inputs for which GM versions are widely commercially available; this includes certain crops, their derivatives, and animal-derived inputs.~~

[20] Note that canola is also on the list of Non-Testable High-Risk Products, Ingredients, and Inputs and must therefore be compliant with the requirements in both Section 6 and Section 7.

[21] This is a non-exhaustive list of Inputs, Ingredients, and derivatives that should be considered High-Risk when sourced from crops in Appendix B.1.1. It is meant to provide examples of materials that are considered High-Risk by the ~~Non-GMO~~ Project.

[22] Per Section 8.1., Section 8.2, and Section 8.3., verification of livestock and poultry, bee, and seafood~~aquaculture~~ Products and Major Inputs and Ingredients requires the testing of feed.

- Monosodium glutamate
- Sucrose – derived from sugar beets
- Textured vegetable protein – including soy protein

~~**c.Other Derivatives**~~

- Amino acids
- Aspartame
- Flavorings, "natural" and "artificial" – including all carriers and co-formulants
- Lactic acid
- Microbial growth media
- Vitamins – vitamin A (various forms), vitamin B6 (pyridoxine hydrochloride), vitamin B12 (cyanocobalamin), vitamin C (ascorbic acid), and vitamin E (various forms). Vitamins in general are often formulated with dispersants and related ingredients that also have GMO risk (e.g., corn oil)
- Xanthan gum
- ~~Yeast products~~

B.2 Non-Testable High-Risk Inputs and Ingredients

B.2.1 Crops

- Canola (~~RTDS [~~ODM)[23]
- Potato

B.2.2 Microorganism~~be~~ and Enzyme Inputs and Ingredients

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

B.2.3 Ingredients or Substances with Synbio Counterparts~~Potentially Sourced via Synthetic Biology~~

[23] Note that canola is also on the list of Testable High-Risk Products, Ingredients, and Inputs and must therefore be compliant with the requirements in both Section 6~~Section V~~ and Section 7~~Section VI~~.

Appendix C –Monitored-Risk List[24]

Organisms, and Products, Ingredients, and Inputs derived from those organisms, ~~Certain inputs~~ for which GM counterparts~~organisms~~ are in the research and development stages, which have been developed but are not widely commercially available, or for which known GMO ~~organism~~ contamination has occurred.

Commented [A85]: Moved from v14.2 Footnote 19

C.1 Testable Monitored-Risk Inputs

C.1.1 Crops

- *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* (e.g., acorn squash, delicata squash, patty pan squash, pumpkin, and spaghetti squash) – cross-pollination risk from GM squash
- Flax
- Mustard
- Rice
- Wheat

C.2 Non-Testable Monitored-Risk Inputs

C.2.1 Crops

- Apple
- Camelina (false flax)
- Corn (CRISPR-Cas9~~, INzyme®~~)[25]
- Mushroom
- Orange
- Pineapple
- ~~Potato~~

~~Salmon~~

- Soy (TALEN)
- Sugarcane
- Tomato

C.2.2 Animal-derived Inputs and Ingredients

- Salmon

[24] ~~Certain inputs for which GM organisms are in the research and development stages, which have been developed but are not widely commercially available, or for which known GM organism contamination has occurred.~~

[25] Note that corn is also on the list of Testable High-Risk Inputs and must therefore be compliant with the requirements in Section 6~~Section V~~.

C.2.3 Ingredients or Substances with Synbio Counterparts~~Potentially Sourced via Synthetic Biology~~

- Spider silk

Appendix D – Extended Timelines