Biennial public comment periods on the Non-GMO Project 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 goods 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 Inputs and Ingredients derived from Genetically Modified Organisms (GMOs) 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 wholesale goods and retail consumer goods that are enrolled 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 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. Before using the Trademark in connection with any Products, Participants will be required to sign a written agreement with the Project.

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 Non-conformities 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 of Product Verification Program

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

2.2.1.b.v Packaging that is directly immersed in 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, bees, seafood, 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 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. See Section 9.3 for the evaluation and compliance requirements of Microorganisms.

2.2.2.b Purified carbon dioxide (CO₂) from either biological or non-biological sources

2.2.2.c Fully composted materials and animal manures not sourced from Genetically Modified (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 **GM** animals including those that are cloned, and their progeny

2.2.3.e Manure sourced from **GM** animals

2.2.3.f **Synthetic biology** and its derivatives

### 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 CO₂.

For livestock, poultry, bee, and seafood 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. Rations demonstrating compliance on an as-fed basis have additional reporting requirements per Section 8.3.1.d. Rations demonstrating compliance on a dry matter basis do not have any additional reporting requirements. Per Section 8, all Minor and 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. After the TA determines that a Micro Ingredient qualifies for Section 3.1.3.c Micro Exemption, 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 Inputs and Ingredients, including application of the limits in Section 3.1.3.a and Section 3.1.3.b below, shall be limited to the organism from which they were derived, as opposed to growth medium or feed. Certain Micro Inputs and Ingredients are eligible for Micro Exemption under Section 3.1.3.c below.
3.1.3.a Bioengineered Substances\(^1\) out of compliance with the relevant Action Threshold cannot knowingly be used as Micro Ingredients in Products.

3.1.3.b Inputs and Ingredients ineligible for Micro Exemption:

3.1.3.b.i Viable Microorganisms present in the finished Product.

3.1.3.b.ii Functional Enzymes present in the finished Product and listed on the ingredient panel, or for Products sold without retail labeling, listed on the Input/Ingredient disclosure documentation.

3.1.3.b.iii High-Risk Micro Ingredients, other than artificial and natural flavors, Enzymes, and Microorganisms if they are either:

3.1.3.b.iii.a Named in text on the Principal Display Panel of a retail consumer Product and the same name, or any common name by which the ingredients are known, is listed on the ingredient declaration or supplement facts panel; OR

3.1.3.b.iii.b Named in parenthetical Ingredient declarations or supplement facts panels and are reasonably considered to characterize a Major, Minor, or Micro Ingredient that is named on the Principal Display Panel of a retail consumer Product.

See Table 3-1 for High-Risk.

3.1.3.c Ingredients present in Products as Micro Ingredients and not listed in Section 3.1.3.a or Section 3.1.3.b directly above, and Inputs represented in Products as Micro Ingredients, may be exempt from further evaluation (Micro-exempted) provided no Product contains more than 0.9% total exempt Micro Ingredients, by Weight Percentage.

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).

---

\(^1\) As defined by the National Bioengineered Food Disclosure Standard (NBFDS) in 7CFR 466.1 2018.
Table 3-1  The Five Risk Statuses

<table>
<thead>
<tr>
<th>Risk Status</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verified-Status</td>
<td>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.</td>
</tr>
<tr>
<td>High-Risk (see Appendix B)</td>
<td>Organisms and the Inputs and Ingredients derived from them for which GMO counterparts are widely commercially available.</td>
</tr>
<tr>
<td>Monitored-Risk (see Appendix C)</td>
<td>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.</td>
</tr>
<tr>
<td>Low-Risk</td>
<td>Organisms and the Inputs and Ingredients derived from them that are not classified as Monitored-Risk or High-Risk.</td>
</tr>
<tr>
<td>Non-Risk</td>
<td>Inputs and Ingredients that are not derived from biological organisms and are not, therefore, susceptible to Genetic Modification.</td>
</tr>
</tbody>
</table>

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 valid molecular or immunological test results, and acceptable molecular 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 have a point in the supply chain where the Input or Ingredient contains sufficient intact DNA or protein to return valid molecular or immunological test results and/or no acceptable molecular tests or immunological tests are publicly commercially available. Some organisms and their derivatives are both Testable and Non-Testable according to the above criteria.

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.

3.3.1 For Testable High-Risk Inputs and Ingredients (including for use in pet food) other than animal feed, the molecular method polymerase chain reaction (PCR) is the only acceptable testing methodology.

3.3.2 For Testable High-Risk Inputs to animal feed (other than pet food), either the molecular method PCR or immunological methods may be used to demonstrate compliance with the Action Threshold.
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 various compliance pathways for Testable and Non-Testable High-Risk Inputs and Ingredients when they are Majors, Minors, and Micros.

Additional requirements, including those outlined in Section 10, Product Specifications and Labeling, and Section 11, Quality Assurance, may also apply to Products, Ingredients, and Inputs.

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

<table>
<thead>
<tr>
<th>Verified-Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provide proof of Verified-Status of appropriate scope</td>
</tr>
<tr>
<td>2. Provide proof of purchase</td>
</tr>
<tr>
<td>3. Participant complies with Section 4, Chain of Custody, from the point of procurement to the finished Product</td>
</tr>
<tr>
<td>4. Participant complies with Section 5, Onsite Inspections, from the point of procurement to the finished Product</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monitored-Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>See requirements for Low-Risk.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low-Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
</tr>
<tr>
<td>2. Comply with Section 7.5, Low-Risk Major, Minor, and Micro Inputs and Ingredients OR</td>
</tr>
<tr>
<td>3. Provide a complete Input and Ingredient disclosure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Comply with Section 7.6, Non-Risk Major, Minor, and Micro Inputs and Ingredients OR</td>
</tr>
<tr>
<td>2. Provide a complete Input and Ingredient disclosure</td>
</tr>
</tbody>
</table>

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 3-2: Compliance of Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients

<table>
<thead>
<tr>
<th>Major</th>
<th>Minor</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Testable High-Risk</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. <strong>Provide proof of purchase</strong></td>
<td>1. Comply as a Major OR</td>
<td>1. Comply as a Major OR</td>
</tr>
<tr>
<td>2. Submit a complete Input and Ingredient disclosure AND</td>
<td>2. <strong>Provide proof of purchase</strong></td>
<td>2. Comply as a Minor OR</td>
</tr>
<tr>
<td>3. Comply with Section 4, Chain of Custody</td>
<td>3. Submit a complete Input and Ingredient disclosure AND</td>
<td>3. Comply with Section 5, Onsite Inspections AND</td>
</tr>
<tr>
<td>4. Comply with Section 5, Onsite Inspections <strong>AND EITHER</strong></td>
<td>4. Comply with Section 4, Chain of Custody</td>
<td>4. Comply with Section 7.3, Testable High-Risk Minor and Micro Inputs and Ingredients <strong>AND</strong></td>
</tr>
<tr>
<td>a. Comply with Section 6, Sampling and Testing</td>
<td>b. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin</td>
<td>5. <strong>Provide proof of purchase for Inputs and Ingredients that are not Micro-exempted</strong></td>
</tr>
<tr>
<td><strong>Non-Testable High-Risk</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. <strong>Provide proof of purchase</strong></td>
<td>1. <strong>Provide proof of purchase</strong></td>
<td>1. Comply as a Major OR</td>
</tr>
<tr>
<td>2. Submit a complete Input and Ingredient disclosure AND</td>
<td>2. <strong>Provide proof of purchase</strong></td>
<td>2. Comply as a Minor OR</td>
</tr>
<tr>
<td>3. Comply with Section 4, Chain of Custody</td>
<td>3. Comply with Section 4, Chain of Custody <strong>AND</strong></td>
<td>3. Comply with Section 3.1.3, Micro Inputs and Ingredients <strong>AND</strong></td>
</tr>
<tr>
<td>4. Comply with Section 5, Onsite Inspections <strong>AND</strong></td>
<td>a. Comply with Section 7.2, Non-Testable High-Risk Inputs and Ingredients <strong>OR</strong></td>
<td>4. <strong>Provide proof of purchase for Inputs and Ingredients that are not Micro-exempted</strong></td>
</tr>
<tr>
<td>a. Comply with Section 7.2, Non-Testable High-Risk Inputs and Ingredients <strong>OR</strong></td>
<td>b. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin</td>
<td><strong>Deleted:</strong> a. Comply as a Product/Major ¶</td>
</tr>
<tr>
<td>b. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin</td>
<td><strong>Deleted:</strong> b. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin</td>
<td><strong>Deleted:</strong> Product/</td>
</tr>
</tbody>
</table>

Commented [A4]: Proof of purchase is currently required to demonstrate compliance of Verified Status Inputs and Ingredients. Invoices, purchase orders, and bills of lading are currently among the list of documents accepted as proof of purchase. The Project proposes extending this requirement to all Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients. What additional considerations should the Project take into account before adopting the proposed change?

PLEASE CLICK HERE TO COMMENT
4 Chain of Custody

Project compliant Products, Ingredients, and Inputs must maintain their integrity while being moved through various activities along the CoC.

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 applicable Standard sections (Table 4-1).

Table 4-1 Activities Along the Chain of Custody

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural production—seeds and crops</td>
<td>Includes farm production, harvest, and post-harvest handling and storage on farm or farm-related facilities</td>
</tr>
<tr>
<td>Handling</td>
<td>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</td>
</tr>
<tr>
<td>Storage</td>
<td>Includes all links in the CoC from seed to finished product</td>
</tr>
<tr>
<td>Distribution</td>
<td>This may or may not involve physical handling of goods</td>
</tr>
<tr>
<td>Processing</td>
<td>Includes all conveyance, storage, processing, handling, assembly, or packaging of goods within any given production facility</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Involves the production, and combination of, Inputs and Ingredients to make the finished Product</td>
</tr>
<tr>
<td>Packaging and labeling</td>
<td>Includes any and all events where the packaging or labeling of goods is added, removed, or altered</td>
</tr>
</tbody>
</table>

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.

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. Proof of purchase must accompany Verified-Status Inputs and Ingredients and Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients.

5 Onsite Inspections
5.1 At minimum, 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 Contract processors that are not Participants are exempt from inspection through December 31, 2020 as long as Products, Ingredients, and Inputs they manufacture are the result of a system that has been designed to avoid GMOs.

5.3 The TA may require additional inspections based on an overall risk analysis of the supply chain undergoing evaluation.

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

Commented [A5]: Proof of purchase is currently required to demonstrate compliance of Verified-Status Inputs and Ingredients. Invoices, purchase orders, and bills of lading are currently among the list of documents accepted as proof of purchase. The Project proposes extending this requirement to all Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients. What additional considerations should the Project take into account before adopting the proposed change?

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5 Inspections

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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.
pathways available for the demonstration of compliance with the relevant Action Threshold. Refer to Table 3-2 and Table 3-3 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**

<table>
<thead>
<tr>
<th>Category</th>
<th>Action Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed and vegetative propagation materials</td>
<td>0.25%</td>
</tr>
<tr>
<td>Wholesale or retail goods for human or pet use that are either ingested or topically applied including OTC drugs and homeopathic remedies</td>
<td>0.9%</td>
</tr>
<tr>
<td>Livestock, poultry, bee, and seafood feed and supplements, including those used for animal-derived Inputs and Ingredients to all Products</td>
<td>5%^b</td>
</tr>
<tr>
<td>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</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

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

^b Compliance with this Action Threshold may be based on the quarterly average of all lots tested.

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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 before any test results acquired on the basis of said sampling and testing plan may be used to demonstrate compliance with the Action Threshold.

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.

Commented [A6]: The Project proposes changing the compliance of feed test results from a 5% annual averaging pathway to a 5% quarterly averaging pathway. Should this proposed change be adopted it would mean that instead of Participants complying with the 5% Action Threshold by averaging test results over a period of one year, test results would need to be averaged each quarter and that average must be at or below 5%.

What additional considerations should the Project take into account before adopting the proposed change?

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6.2.1. When achieving statistical validity through crop sampling cannot be done without destroying significant quantities of the consumer product (e.g., for large crops such as papaya, sweet corn, zucchini and yellow summer squash), 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.

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

6.3.6.b The Participant must justify in writing to the TA why the requirements of Section 6.1 are problematic to achieve for every lot at initial verification and at each renewal.

6.3.6.c The Participant is responsible for ongoing monitoring of test results to ensure compliance for each 6-month period.

6.3.6.d This compliance pathway will be revisited during the 2020 comment period.

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 A copy of the original result for 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 under the following conditions:

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; and

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 PCR may be used to demonstrate compliance with the Action Threshold if:

6.4.3.c.i The PCR limit of detection is 0.1%; and

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. If the Testable High-Risk precursor, input, or ingredient cannot be tested in compliance with Section 6.4.3.a or Section 6.4.3.b, compliance with the appropriate Action Threshold cannot be demonstrated and the lot must not be used in a Verified Product.

6.5 Immunological Testing Methods

6.5.1 Immunologial 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 proficiency 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; and

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

In most cases, testing is a required validation tool for confirming compliance with the Action Threshold of Testable High-Risk Major Inputs and Ingredients. In the case of Non-Testable High-Risk Inputs and Ingredients, where testing is not an available validation tool, or in the case of Inputs and Ingredients classified as other than Testable High-Risk Major, the Project uses a process-based approach that includes comprehensive Affidavits as an alternate validation tool. At the discretion of the TA or the Project, Affidavits may be required in additional situations not explicitly identified in this Section 7.

7.1 Global Affidavit Requirements

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

7.1.2 All Affidavits must include the Project’s definitions of Biotechnology and GMO as they appear in Appendix A.

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

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

7.1.5 At minimum, 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 Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients are identified in Appendix B.2. An Affidavit stating that any such Non-Testable High-Risk Major, Minor, or Micro Input or Ingredient is Non-GMO is required to establish compliance with this Section 7.2.
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. 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.

7.4 Affidavit Compliance Based on Geographic Origin

7.4.1 Certain Testable and Non-Testable High-Risk crops and their derivatives comprising a single Input may demonstrate compliance with aspects of this Standard based on geographic origin.

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

7.4.3 The Affidavit must state:

7.4.3.a Procurement procedures are in place throughout the supply chain requiring that the crop source or single Input derivative is grown strictly in specific geographic locations;

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

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

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2The Project maintains the list of geographic locations (and associated frequencies and necessities of testing) that comply with Section 7.4.3.
7.4.4 When available, valid third-party IP certificates are acceptable alternatives to Affidavits when the scope of the third-party certification program satisfies the requirements for which an Affidavit would be used in 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.

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.

8 Livestock and Poultry
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.

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.

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. Unless otherwise specified, compliance with the 5% Action Threshold is based on the quarterly average of all lots tested. 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 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 material is, or is present in, the Product under evaluation.

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 material is, or is present in, the Product under evaluation.

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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. ¶

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Commented [A7]: The Project proposes changing the compliance of feed test results from a 5% annual averaging pathway to a 5% quarterly averaging pathway. Should this proposed change be adopted it would mean that instead of Participants complying with the 5% Action Threshold by averaging test results over a period of one year, test results would need to be averaged each quarter and that average must be at or below 5%. What additional considerations should the Project take into account before adopting the proposed change?

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<table>
<thead>
<tr>
<th>Product/Major</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Animals must comply with <a href="#">Section 8.2</a>, Life Cycle</td>
<td></td>
</tr>
<tr>
<td>2. Major Inputs to Rations are within the scope of review and must be found compliant with <a href="#">Table 8-2</a></td>
<td></td>
</tr>
<tr>
<td>3. Inputs to Ration formulations are classified based on the combination of Weight Percentage as present in the Ration formulation, Risk Status, and Testability</td>
<td></td>
</tr>
<tr>
<td>4. Major High-Risk Inputs to the Ration formulation must comply with:</td>
<td></td>
</tr>
<tr>
<td>a. <a href="#">Section 4</a>, Chain of Custody,</td>
<td></td>
</tr>
<tr>
<td>b. <a href="#">Section 8</a>, Livestock and Poultry,</td>
<td></td>
</tr>
<tr>
<td>c. <a href="#">Section 8.9</a>, Onsite Farm and Feed Mill Inspections.</td>
<td></td>
</tr>
<tr>
<td>5. In addition to Ration compliance, the livestock or poultry-derived material must comply with:</td>
<td></td>
</tr>
<tr>
<td>a. <a href="#">Section 4</a>, Chain of Custody,</td>
<td></td>
</tr>
<tr>
<td>b. <a href="#">Section 5</a>, Onsite Inspections,</td>
<td></td>
</tr>
<tr>
<td>c. <a href="#">Section 8.9</a>, Onsite Farm and Feed Mill Inspections,</td>
<td></td>
</tr>
<tr>
<td>d. <a href="#">Section 10</a>, Product Specifications and Labeling, and</td>
<td></td>
</tr>
<tr>
<td>e. <a href="#">Section 11</a>, Quality Assurance</td>
<td></td>
</tr>
</tbody>
</table>

#### 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., Verified Status, 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

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March 1, 2019
8.2 Life Cycle

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

Animals cannot be intentionally cycled on and off compliant feed. The use of non-compliant Major Inputs to the animals’ Rations triggers a Major Non-conformity. Removal of animals from a Non-GMO compliant group (e.g., herd, flock, etc.) for medical treatment is permitted, during which time their feed is out of the scope of review and no material (e.g., milk, eggs, etc.) may be collected from them for use in the Non-GMO supply chain. The animals must immediately resume Non-GMO compliant feed once treatment is concluded and they are returned to the group.

8.2.1 Meat animals, including culls (other than poultry): starting at birth (the feed of nursing mothers is not evaluated) and ending at slaughter

8.2.2 Poultry, including spent hens: starting on the 2nd day after hatching and ending at slaughter

8.2.3 Laying hens: starting 30 days prior to initial verification and for the remainder of the animal’s productive life (including rest and molt periods)

8.2.4 Dairy animals: 30 days prior to initial verification and for the remainder of the animal’s productive life (including dry periods)

8.3 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

<table>
<thead>
<tr>
<th>Testable High-Risk</th>
<th>Minor</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major</strong></td>
<td><strong>Minor</strong></td>
<td><strong>Micro</strong></td>
</tr>
<tr>
<td>1. Sampling and testing must comply with Section 8.4, Section 8.5, Section 8.6, and Section 8.7, as applicable</td>
<td>1. Comply with Section 7, Affidavits OR 2. Out of scope</td>
<td>1. Comply with Section 7, Affidavits OR 2. Out of scope</td>
</tr>
<tr>
<td><strong>AND/OR</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Comply with Section 4, Chain of Custody, from the point of testing onward</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Farming operations must comply with Section 8.8, Onsite Farm and Feed Mill Inspections</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Testable High-Risk</th>
<th>Minor</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major</strong></td>
<td><strong>Minor</strong></td>
<td><strong>Micro</strong></td>
</tr>
<tr>
<td><strong>AND/OR</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Comply with Section 4, Chain of Custody, from the point of compliance with Section 7.2 onward</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Farming operations must comply with Section 8.8, Onsite Farm and Feed Mill Inspections</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**8.3.1 Ration Reporting Requirements**

**8.3.1.a** Dairy and laying operations must submit to the TA at initial verification a plan detailing the stages of life or production managed including, at minimum, corresponding durations and Rations fed.

**8.3.1.a.i** Weight Percentage, Risk Status, and Testability attributes apply to all Ration Inputs as they appear within each individual Ration.

**8.3.1.a.ii** Multiple Rations that are materially different cannot be combined into a single Ration.

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March 1, 2019

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8.3.1.a.iii Multiple Rations spanning different stages of life or production cannot be combined into a single Ration unless they are materially homogenous.

8.3.1.b Meat operations must submit to the TA at initial verification a plan detailing the stages of life or production, including, at minimum, corresponding durations and the Ration fed to the animals for the full length of their life cycle requirement as stated in Section 8.2.1.

8.3.1.c Poultry operations must submit to the TA at initial verification a plan detailing the stages of life or production, including, at minimum, corresponding durations and the Ration fed to the animals for the full length of their life cycle requirement as stated in Section 8.2.2.

8.3.1.d Rations compliant on an as-fed basis are subject to additional reporting requirements including, at minimum, the following:

8.3.1.d.i The corresponding dry matter conversion of each individual Ration must accompany each as-fed Ration.

8.3.1.d.ii A written rationale for why compliance of Rations has been established on an as-fed basis.

8.3.1.d.iii The option for Rations to demonstrate compliance on an as-fed basis will be revisited during the 2020 comment period.

8.3.1.e Rations compliant on a dry matter basis have no additional reporting requirements.

8.4 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.

8.4.1 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 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.

8.4.1.a 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

Commented [A8]: The Project is strongly inclined to standardize the evaluation and compliance of Rations on a dry matter basis. In order to assess how this would affect Participants currently using an as-fed model, we propose a benchmarking process whereby said Participants must provide a written rationale explaining the basis for an as-fed approach (in addition to providing the corresponding dry matter conversion for each Ration). Should the data collected through benchmarking lead us to conclude that standardizing to evaluation and compliance of Rations on a dry matter basis is feasible, how much time should the Project allow for Participants to transition from evaluation and compliance of Rations on an as-fed basis to a dry matter basis?

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with:
- farm locations
- 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.

8.4.1.b 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

<table>
<thead>
<tr>
<th>Number of Farms per Region</th>
<th>Number of Farms to be Sampled and Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fewer than 10 farms per region</td>
<td>minimum of 1 farm tested per region per quarter</td>
</tr>
<tr>
<td>10 to 20 farms per region</td>
<td>minimum of 2 farms tested per region</td>
</tr>
<tr>
<td>21 to 50 farms per region</td>
<td>10% of farms tested per region</td>
</tr>
<tr>
<td>51 to 100 farms per region</td>
<td>5% of farms tested per region</td>
</tr>
<tr>
<td>Over 100 farms per region</td>
<td>minimum of 6 farms tested per region</td>
</tr>
</tbody>
</table>

Non-GMO Project Standard Version 14.3 Redline

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.

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.
8.4.1.c 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.

8.4.1.d Testing within the Regional Model

Testing must comply with Section 6.3.3. 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.

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

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

8.4.2.a Sampling of every incoming lot of Testable High-Risk Major Input, testing each sample in compliance with Section 6.4 or Section 6.5 by each farmer in the Participant’s operations, and quarterly averaging of results to comply with the Action Threshold; OR

8.4.2.b 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.

8.4.3 Group Compliance Model

Large certified organic farming operations where goods are pooled, large certified organic farming operations where goods are not pooled, and large conventional farming operations where goods are either pooled or not pooled, may demonstrate compliance with the Standard through a group compliance model. The group compliance model must include an Internal Control System (ICS). All components of the ICS are subject to final approval by the TA. At minimum, the ICS shall include:

8.4.3.a A clearly defined scope outlining the ICS management structure including personnel, titles, roles, and contact information, and conflict
of interest policy.

8.4.3.a A listing of farms, facilities, and/or operations within the group (group members) being overseen, and the locations of all farms in the operation, locations of all feed mills, which feed mills service which farms, locations of all processing facilities, where Parallel Processing is taking place, and which group member(s) are responsible for testing.

8.4.3.c A training plan for ICS Personnel including how ICS personnel educate their group members.

8.4.3.c.i Each member of the group must have, and acknowledge access to, a copy of the most recent Standard version.

8.4.3.c.ii Each member of the group must have, and acknowledge access to, any relevant documents such as SOPs, sampling and testing plans, etc.

8.4.3.d A comprehensive plan for how each group member will comply with all relevant Standard sections based on the nature of their goods and Ration formulations, including Section 4, CoC, Section 8.2 through Section 8.7, Section 8.8, Onsite Farm and Feed Mill Inspections, Section 10, Product Specifications and Labeling, and Section 11, Quality Assurance.

8.4.3.d.i Frequency of inspection must be at least once per year by ICS personnel of all farms under the scope of the ICS.

8.4.3.d.ii Third-party inspections must be conducted annually on 10% of all farms Parallel Processing the same Major High-Risk Inputs to Rations. Farms are chosen by the TA.

8.4.3.d.iii How the ICS will handle Minor Non-conformities.

8.4.3.d.iv How the ICS will handle Major Non-conformities.

8.4.3.e For large certified organic farming operations where goods are pooled, a sampling and testing plan in compliance with Section 8.4.1 and Section 8.6, for each group member responsible for testing.

8.4.3.f For large certified organic farming operations where goods are not pooled and for large conventional farming operations where goods are pooled or not pooled, a sampling and testing plan in compliance with Section 8.4.2 and Section 8.6, for each group member responsible for testing.

8.4.3.g Frequency with which group members submit test results to the ICS.

8.4.3.h How the results will be handled (quarterly averaging) or pass-fail.

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

8.6 Feed Compliance Through 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 8.6.1 and Section 8.6.2.

8.6.1 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.

8.6.2 Green chop, as well as silage and similarly fermented feeds. When post-harvest testing of green chop and/or silage is feasible, sampling must comply with Section 6.2, testing must comply with Section 6.3, and test results must comply with either Section 6.4 or Section 6.5. When post-harvest testing is not feasible for green chop and/or silage because compliance cannot be established with one or more of the sections listed above, these feed inputs may demonstrate compliance through seed testing, Affidavit, or use of Verified-Status seed. In all cases, the grower must demonstrate traceability from the planted field to the harvested feed crop.

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

8.6.2.b 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 Non-GMO and an invoice and Affidavit from the grower confirming planting location.

8.6.2.c 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.

8.7 Feed Mills

8.7.1 Rations formulated by feed mills may be found compliant with Section 8.1 if:

8.7.1.a Every lot of Testable Major High-Risk Input to the Ration complies with Section 6.
8.7.1.b Every lot of Non-Testable Major High-Risk Input to the Ration complies with Section 7.

8.7.2 Or, feed sold by feed mills may be found compliant with Section 8.1 if:

8.7.2.a 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

8.7.2.b 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

8.7.2.c The Non-GMO integrity of every Testable and Non-Testable High-Risk crop compliant with Sections 8.7.2.a and 8.7.2.b is maintained through compliance with Section 4.

8.8 Onsite Farm and Feed Mill Inspections

8.8.1 Large farming operations compliant with Section 8.4.3, Group Compliance Model, are required to have 10% of all farms Parallel Processing the same Major High-Risk Inputs to Rations inspected by a third party on an annual basis. Farms will be chosen by the TA.

8.8.2 All farms and feed mills may be subject to annual inspections at the discretion of the TA.

8.8.3 Farms must be inspected annually when Parallel Processing of the same Major High-Risk Input to a Ration is occurring.

8.8.4 Unless the TA finds cause for inspection, inspections may not be required for:

8.8.4.a Certified organic farming operations in which goods are pooled or not-pooled during final processing

8.8.4.b Conventional farming operations that are not Parallel Processing the same Major High-Risk Input to a Ration

8.8.4.c Feed mills that are not Participants

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

9 Special Requirements for Specific Products, Ingredients, and Inputs

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.
9.1 Apiculture

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

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

9.1.2 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.

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

9.1.3.a Meet all requirements of Section 7;

9.1.3.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).  

9.2 Beer, Wine, and Liquor

9.2.1 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.c, Micro Exemption, and must be Non-GMO.

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

9.2.3 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.

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

9.3 Microorganisms

9.3.1 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.

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9.3.2 An Affidavit meeting all the requirements of Section 7.2 must, in addition, confirm that the Microorganism is not the result of Biotechnology and is Non-GMO.

9.3.3 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.

9.3.4 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.

9.4 **Probiotics**

9.4.1 When probiotic Microorganisms, or Inputs or Ingredients derived from probiotic Microorganisms, are Products, or are Major or Minor Ingredients, the probiotic Microorganism is within the scope of review and must be found compliant. The growth media for probiotic Microorganisms as Inputs, Ingredients, and Products are temporarily outside the scope of evaluation. This temporary removal from scope will be revisited during the 2020 comment period.

9.4.2 An Affidavit meeting all the requirements of Section 7.2 must, in addition, confirm that the probiotic Microorganism is not the result of Biotechnology and is Non-GMO.

9.5 **Seafood**

This Section 9.5, Seafood, applies to all saltwater and freshwater aquatic animals.

9.5.1 Farm-raised seafood (in captivity from egg to harvest and/or where nutrient additions are provided) shall be fully evaluated as a High-Risk Product, Ingredient, or Input and requires the evaluation and compliance of Ration Inputs.

9.5.2 Products, Ingredients, and Inputs derived from farm-raised seafood shall be evaluated in the same manner as livestock and poultry Products, Ingredients, and Inputs in Section 8 and Section 3.

9.5.3 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.

9.6 **Vitamins and Supplements**

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 removal from scope will be revisited during the 2020 comment period.
10 Product Specifications and Labeling

10.1 Specifications for Obtaining Inputs and Ingredients

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

10.1.2 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.

10.1.3 When spot purchasing is necessary, unverified Inputs and Ingredients should be avoided; Participants must seek out Verified-Status Inputs and Ingredients, of appropriate scope. If a spot purchase of unverified Input or Ingredient is made, the Participant must:

10.1.3.a Justify to the TA why a Verified-Status Input or Ingredient was not used.

10.1.3.b Provide evidence that any Testable High-Risk Input or Ingredient that is spot purchased has been tested in accordance with the requirements of this Standard and that the test results are at or below the relevant Action Threshold.

10.1.3.c Demonstrate that all Non-Testable High-Risk Inputs or Ingredients, Verified-Status Inputs or Ingredients, or Low-Risk Inputs or Ingredients that are spot purchased are compliant with all applicable requirements of Table 3-3 and Table 3-2, respectively.

10.1.3.d Provide the TA with documentation of the purchase, including Affidavits, sampling information, and test results. This reporting shall be done in a timely manner.

10.1.4 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.

10.2 Labeling

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

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

10.2.3 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. One-hundred percent GMO absence claims are not acceptable and include, but are not limited to, “contains zero GMOs,” “GMO-free,” and “GE-free.”

10.2.4 High-Risk Micro Ingredients, other than artificial and natural flavors, Enzymes, and Microorganisms, that have been Micro Exempted under Section 3.1.3.c...
cannot be listed with the same name, or any other common name, on the Principal Display Panel of a retail consumer Product.

10.2.5 Ingredients, other than artificial and natural flavors, Enzymes, and Microorganisms, cannot be named on the Principal Display Panel of a retail consumer Product if one or more of their sub-Ingredients (as appearing in a parenthetical ingredient declaration or supplement facts panel) have been Micro Exempted under Section 3.1.3.c and the Micro-exempted sub-Ingredient(s) is/are considered to reasonably characterize the Ingredient appearing on the Principal Display Panel.

### 11 Quality Assurance

#### 11.1 Total Quality Management Systems

11.1.1 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.

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

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

11.1.4 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.

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

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

#### 11.2 Non-conformities and Corrective Actions

11.2.1 Global Non-conformity and Corrective Action Requirements

11.2.1.a Full compliance with the Standard must be achieved prior to initial verification.

11.2.1.b Changes in processes, procedures, Inputs, Ingredients, or Products, which could impact compliance with any aspect of the Standard, are deemed Non-conformities and shall trigger corrective actions.

11.2.1.c Non-conformities discovered during the renewal process must be addressed in order to maintain verification.

11.2.1.d Mid-term Non-conformities discovered through internal quality assurance processes, complaints from customers, third-party surveillance, or third-party audits, shall require corrective action as

**Commented [A9]:** The Project proposes recopying and renaming what was formerly known as the "Defining Ingredient Rule (v14.3 Section II.D.1. and v14.3 Appendix A – Terms and Definitions: Defining Ingredients)." The Project proposes removing the terminology "Defining Ingredient" and making High-Risk Micro Ingredients appearing in text on the Principal Display Panel of retail consumer goods ineligible for Micro Exemption. The intention is to prevent Non-GMO claims from being made on ingredients that have been exempted from evaluation. What additional considerations should the Project take into account before adopting the proposed change?
Identified in Section 11.2.2, Major Non-conformities or in Section 11.2.3, Minor Non-conformities, where appropriate.

11.2.1. Identification of Non-conformities, corrective actions, root cause analyses, and successful remediation of the Non-conformity shall all be documented.

11.2.2 Major Non-conformities

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

11.2.2.a Discovery of any Major Non-conformity must be followed by a timely root cause analysis and corrective action plan. “Timely” is typically considered to be within seven (7) days and rarely longer than thirty (30) days.

11.2.2.b 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.

11.2.2.b.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.

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

11.2.2.d The TA will review, and at their discretion approve the findings of the root cause analysis and the planned corrective actions.

11.2.2.e Corrective actions must be completed in a timely manner, typically within thirty (30) days and rarely longer than ninety (90) days of the completion of the root cause analysis and corrective action plan. Documentary evidence must be submitted to the TA within five (5) days of the completion of corrective actions. The TA will review and approve all corrective action evidence.
11.2.2.f Any delays in the timeline from reporting to completion of corrective actions must be justified in writing and approved by the TA.

11.2.2.g Any known Major Non-conformity that goes unreported or uncorrected or keeps recurring according to the requirements in Section 11.2.2 shall be cause for the Product or the Participant to be removed from the PVP.

11.2.2.h Repeated non-conformance with the Action Threshold may require mid-term reevaluation of the Product.

11.2.3 Minor Non-conformities

11.2.3.a Minor Non-conformities shall trigger corrective actions.

11.2.3.b Minor Non-conformities and corrective actions shall be reviewed, at minimum, at the time of renewal.

11.2.3.c Renewal shall be contingent upon appropriate resolution of any such Minor Non-conformity.

11.3 Renewal

11.3.1 Renewal evaluation of every Verified Product shall be required at least annually.

11.3.2 Renewal evaluation must ensure that, at minimum:

11.3.2.a The Product and all Ingredients and Inputs within the scope of review are compliant under the current Standard version

11.3.2.b All evidence of compliance on file with the TA is current and active

11.3.2.d All Non-conformities have been addressed

11.3.3 No changes to the Product or its manufacture and processing that would compromise the Product’s compliance with this Standard have occurred,

11.3.4 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 Non-conformities 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.

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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.
Appendix A – Terms and Definitions

**Affidavit**: A written and signed statement confirming specific characteristics of a given organism, crop, precursor, Input, Ingredient, system, process, or operation.

**Bioengineered Substance**\(^4\) - A substance that contains genetic material that has been modified through *in vitro* recombinant deoxyribonucleic acid (rDNA) techniques and for which the modification could not otherwise be obtained through conventional breeding or found in nature.

**Biotechnology**\(^5\) - 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** - An annually renewed document confirming a laboratory’s compliance with, and participation in, the Non-GMO Project Approved Laboratory Program. It includes the list of High-Risk crops for which the laboratory is approved to test.

**Certificate of Verification (COV)** - An annually renewed document demonstrating compliance with the PVP which includes a signed written agreement with the Project, where applicable a signed written agreement with the TA, and Product level compliance with the Standard.

**Compliant/Compliance** - In accordance with the referenced and applicable requirements 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 *Microorganisms*, 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.

**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.

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\(^4\) 7CFR §66.1 2018

**Genetically Engineered or Genetic Engineering (GE)** - See Genetically Modified or Genetic Modification.

**Genetically Modified or Genetic Modification (GM)** - A term referring to the result of the application of Biotechnology.

**Genetically Modified Organism (GMO)** - An organism to which Biotechnology has been applied, and its derivatives; cloned animals are included within this definition.

**Growth Media** - Mixtures or mixtures of materials designed to support the growth of Microorganisms.

**Ingredient** - Any material or substance that is a component in the creation of a wholesale or retail consumer good and present in said good in either its original or altered form.

**Input** - Any material or substance that is used in the production of a wholesale or retail consumer good. All inputs are necessarily represented in, or present in, said good.

**Internal Control System (ICS)** - A robust internal oversight structure that functions as the administrative body responsible for maintaining compliance of all members with one or more set(s) of requirements.

**Major Non-conformity** - A deviation that could affect the compliance of an Input or Ingredient with the relevant Action Threshold, such as unintentional contamination of the Ingredient with GM material, or that could impact the compliance of an Input or Ingredient with Section 7.2.

**Matrix** - All 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).

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

**Minor Non-conformity** - A deviation that could not cause any of the relevant Inputs or Ingredients to the Product to exceed the relevant Action Threshold. This includes immaterial changes to procedures, recordkeeping, documentation, or anything else immaterial that does not have the potential to impact compliance with the relevant Action Threshold.

**Non-conformity** - Any deviation in operations that has not been approved by the TA.

**Non-GMO or Non-GM** - An organism to which Biotechnology has not been applied, and its derivatives.

**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 Non-GM and GM versions or where publicly commercially available tests do not exist.

**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 PVP and signs a License Agreement with the Project.
**Principal Display Panel**: 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**

(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 and/or where bulk Product is packaged for final sale and/or where bulk Product is labeled for final sale.

**Product**: A unique branded formula and process, where process could be either the manufacturing or facility process. “Product” refers to goods enrolled in the PVP.

**Ration**: The feedstuffs offered to an animal during a 24-hour period.

**Region**: A geographic area with relatively homogenous farm operations and sources of livestock or poultry feed, typically encompassing one or more states, in which farms ship unprocessed livestock or poultry materials 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 (TA)**: A certification body approved by the 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 Non-GM and GM versions and where publicly commercially available tests exist.

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7 21 CFR §101.100 2017
**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 microscopic organism (such as a bacterium, yeast, fungus, or alga) that performs metabolic functions and reproduces/multiplies.

*Deleted:* 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.

*Deleted:* A microorganism
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.

B.1 Testable High-Risk Inputs and Ingredients

B.1.1 Crops
The following list of Testable High-Risk crops is exhaustive:

- Alfalfa
- Canola\(^8\)
- Corn (except popcorn)
- Cotton
- Papaya
- Soy
- Sugar beets
- Zucchini and yellow summer squash

B.1.2 Animal-derived Inputs and Ingredients\(^9\)

- Meat, dairy, eggs, wool, hides, honey, seafood, and any other materials or substances originating from animals
- Livestock and poultry feed \(^10\)
- Bee forage and feed
- Fish and other aquatic animal feed

B.1.3 Inputs, Ingredients, and Derivatives\(^11\)

- 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

---

\(^8\) Note that canola is also on the list of Non-Testable High-Risk Inputs and Ingredients and must therefore be compliant with the requirements in both Section 6 and Section 7.

\(^9\) Animal-derived materials are considered Testable High-Risk under the Standard.

\(^10\) Per Section 8, Section 9.1, and Section 9.5, verification of livestock and poultry, bee, and seafood Products and Major Inputs and Ingredients requires the testing of feed.

\(^11\) 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.
• Monosodium glutamate
• Sucrose – derived from sugar beets
• Textured vegetable protein – including soy protein
• 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

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

B.2.1 Crops
• Canola (ODM)\textsuperscript{12}
• Potato (RNAi)
• Soy (TALEN)\textsuperscript{13}

B.2.2 Microorganism and Enzyme Inputs and Ingredients
• Algae
• Bacteria
• Enzymes
• Microbial cultures and starters
• Yeast

B.2.3 Ingredients or Substances with Synbio Counterparts

\textsuperscript{12} Note that canola is also on the list of Testable High-Risk Inputs and Ingredients and must therefore be compliant with the requirements in both Section 6 and Section 7.

\textsuperscript{13} Note that soy is also on the list of Testable High-Risk Inputs and Ingredients and must therefore be compliant with the requirements in both Section 6 and Section 7.
Appendix C – Monitored-Risk List

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.

C.1 Testable Monitored-Risk Inputs and Ingredients

C.1.1 Crops

- Beta vulgaris (e.g., chard, table beets) – cross pollination risk from GM sugar beets
- Brassica naposa (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 and Ingredients

C.2.1 Crops

- Apple
- Camelina (false flax)
- Corn (CRISPR-Cas9)\(^1\)
- Mushroom
- Orange
- Pineapple
- Sugarcane
- Tomato

C.2.2 Animal-derived Inputs and Ingredients

- Salmon

C.2.3 Ingredients or Substances with Synbio Counterparts

- Spider silk

---

\(^1\) Note that corn is also on the list of Testable High-Risk Inputs and Ingredients and must therefore be compliant with the requirements in Section 6.
Biennial public comment periods on the Non-GMO Project 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 goods 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 derived from Genetically Modified Organisms (GMOS) 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 wholesale goods and retail consumer goods that are involved enrolled 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), 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. Before using the Trademark in connection with any Products, Participants will be required to sign a written agreement with the Project.

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 Non-conformities 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 of Product Verification Program

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

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

2.2.1.b.v Packaging that is directly immersed in 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, bees, seafood, 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. See Section 9.3 for the evaluation and compliance requirements of Microorganisms.

2.2.2.b Purified carbon dioxide (CO₂) from either biological or non-biological sources

2.2.2.c Fully composted materials and animal manures not sourced from Genetically Modified (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 GM animals including those that are cloned, and their progeny
2.2.3.e Manure sourced from genetically engineered GM animals
2.2.3.f Synthetic biology and its derivatives

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 CO2.

For animal For livestock, poultry, bee, and seafood 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 Rations demonstrating compliance on an as-fed basis have additional reporting requirements per Section 8.3.1.d. Rations demonstrating compliance on a dry matter basis do not have any additional reporting requirements. Per Section 8, all Minor and 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. After the Ingredient is classified as an exempt TA determines that a Micro Ingredient qualifies for Section 3.1.3.a, Section 3.1.3.b, and Section 3.1.3.c Micro Exemption 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 Inputs and Ingredients, including application of the limits in Section 3.1.3.a and Section 3.1.3.b below, shall be limited to the organism from which they were derived, as opposed to growth medium or feed. Certain Micro Inputs and Ingredients are eligible for Micro Exemption under Section 3.1.3.c below.
3.1.3.a  Micro Exemption. Bioengineered Substances\(^1\) out of compliance with the relevant Action Threshold cannot knowingly be used as Micro Ingredients in Products.

3.1.3.b Inputs and Ingredients ineligible for Micro Exemption:

3.1.3.b.i  Viable Microorganisms present in the finished Product.

3.1.3.b.ii Functional Enzymes present in the finished Product and listed on the retail Ingredient panel, or for Products sold without retail labeling, listed on the Input/Ingredient disclosure documentation.

3.1.3.b.iii High-Risk Micro Ingredients, other than artificial and natural flavors, Enzymes, and Microorganisms if they are either:

3.1.3.b.iii.a Named in text on the Principal Display Panel of a retail consumer Product and the same name, or any common name by which the Ingredients are known, is listed on the ingredient declaration or supplement facts panel; OR

3.1.3.b.iii.b Named in parenthetical Ingredient declarations or supplement facts panels and are reasonably considered to characterize a Major, Minor, or Micro Ingredient that is named on the Principal Display Panel of a retail consumer Product.

See Table 3-1 for High-Risk.

3.1.3.c Ingredients present in Products as Micro Ingredients and not listed in Section 3.1.3.a or Section 3.1.3.b directly below, above, and Inputs represented in Products as Micro Ingredients, may be exempt from further evaluation (Micro-exempted) 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.

---

\(^1\) As defined by the National Bioengineered Food Disclosure Standard (NBFDS) in 7CFR §66.1 2018.
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>
<thead>
<tr>
<th>Risk Status</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verified-Status</td>
<td>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.</td>
</tr>
<tr>
<td>High-Risk (see Appendix B)</td>
<td>Organisms and the Inputs and Ingredients derived from them for which GMO counterparts are widely commercially available.</td>
</tr>
<tr>
<td>Monitored-Risk (see Appendix C)</td>
<td>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.</td>
</tr>
<tr>
<td>Low-Risk</td>
<td>Organisms and the Inputs and Ingredients derived from them that are not classified as Monitored-Risk or High-Risk.</td>
</tr>
<tr>
<td>Non-Risk</td>
<td>Inputs and Ingredients that are not derived from biological organisms and are not, therefore, susceptible to Genetic Modification.</td>
</tr>
</tbody>
</table>

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, molecular or immunological test results, and PCR-acceptable molecular 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 have a point in the supply chain where the Input or Ingredient contains sufficient intact DNA or protein to return valid molecular or immunological test results and/or no acceptable molecular tests or immunological tests are publicly available.
commercially available. Some organisms and their derivatives 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.

3.3.1 For Testable High-Risk Inputs and Ingredients (including for use in pet food) other than animal feed, the molecular method polymerase chain reaction (PCR) is the only acceptable testing methodology.

3.3.2 For Testable High-Risk Inputs to animal feed (other than pet food), either the molecular method PCR or immunological methods may be used to demonstrate compliance with the Action Threshold.

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, including those outlined in Section 10, Product Specifications and Labeling, and Section 11, Quality Assurance, 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

<table>
<thead>
<tr>
<th>Verified-Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provide a current and valid Certificate of Verification (COV) of appropriate scope</td>
</tr>
<tr>
<td>2. Provide proof of purchase</td>
</tr>
<tr>
<td>3. Comply with Section 4, Chain of Custody, from the point of the Participant’s procurement to the finished Product</td>
</tr>
<tr>
<td>4. Comply with Section 5, Onsite Inspections, from the point of the Participant’s procurement to the finished Product</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monitored-Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provide a current and valid Certificate of Verification (COV) of appropriate scope</td>
</tr>
<tr>
<td>2. Provide proof of purchase</td>
</tr>
<tr>
<td>3. Comply with Section 4, Chain of Custody, from the point of the Participant’s procurement to the finished Product</td>
</tr>
<tr>
<td>4. Comply with Section 5, Onsite Inspections, from the point of the Participant’s procurement to the finished Product</td>
</tr>
</tbody>
</table>
Table 3-2  Compliance of Verified-Status, Monitored-Risk, Low-Risk, and Non-Risk Inputs, Ingredients, and Products

<table>
<thead>
<tr>
<th></th>
<th>Low-Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>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</td>
</tr>
<tr>
<td>2.</td>
<td>Comply with Section 7.5, Low-Risk Major, Minor, and Micro Inputs and Ingredients OR</td>
</tr>
<tr>
<td>3.</td>
<td>Provide a complete Input and Ingredient disclosure</td>
</tr>
</tbody>
</table>

**Non-Risk**

<table>
<thead>
<tr>
<th></th>
<th>Non-Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Comply with Section 7.6, Non-Risk Major, Minor, and Micro Inputs and Ingredients OR</td>
</tr>
<tr>
<td>2.</td>
<td>Provide a complete Input and Ingredient disclosure</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Defining Ingredient</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Comply with Standard requirements as a Major Ingredient based on the combination of Risk Status and Testability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Comply with Standard requirements as EITHER</td>
</tr>
<tr>
<td></td>
<td>a. A Major Ingredient</td>
</tr>
<tr>
<td></td>
<td>OR</td>
</tr>
<tr>
<td></td>
<td>b. A Minor Ingredient based on the combination of Risk Status and Testability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Micro</th>
</tr>
</thead>
</table>

Non-GMO Project Standard Version 14.3 Redline  
March 1, 2019
### Table 3-4.3: Compliance of Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients

<table>
<thead>
<tr>
<th>Product/Major</th>
<th>Minor</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Testable High-Risk</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Provide proof of purchase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Submit a complete Input and Ingredient disclosure AND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Comply with Section 4, Chain of Custody</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Comply with Section 5, Onsite Inspections AND EITHER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Comply with Section 6, Sampling and Testing OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Non-Testable High-Risk</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Provide proof of purchase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Submit a complete Input and Ingredient disclosure AND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Comply with Section 4, Chain of Custody</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Comply with Section 5, Onsite Inspections AND OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Comply with Section 7.2, Non-Testable High-Risk Inputs and Ingredients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Commented [A4]:** Proof of purchase is currently required to demonstrate compliance of Verified Status Inputs and Ingredients. Invoices, purchase orders, and bills of lading are currently among the list of documents accepted as proof of purchase. The Project proposes extending this requirement to all Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients. What additional considerations should the Project take into account before adopting the proposed change? **PLEASE CLICK HERE TO COMMENT**
Table 3-4.3 Compliance of Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients

<table>
<thead>
<tr>
<th>Product/Major</th>
<th>Minor</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance Based on Geographic Origin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Non-GMO Project Standard Version 14.3 Redline March 1, 2019

4 Chain of Custody

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 applicable Standard sections (Table 4-1).

Table 4-1 Activities Along the Chain of Custody

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural production—seeds and crops</td>
<td>Includes farm production, harvest, and post-harvest handling and storage on farm or farm-related facilities</td>
</tr>
<tr>
<td>Handling</td>
<td>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</td>
</tr>
<tr>
<td>Storage</td>
<td>Includes all links in the CoC from seed to finished Product</td>
</tr>
<tr>
<td>Distribution</td>
<td>This may or may not involve physical handling of goods</td>
</tr>
<tr>
<td>Processing</td>
<td>Includes all conveyance, storage, processing, handling, assembly, or packaging of goods within any given production facility</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Involves the production, and combination of, Inputs and Ingredients to make the finished Product</td>
</tr>
<tr>
<td>Packaging and labeling</td>
<td>Includes any and all events where the package or labeling of goods is added, removed, or altered</td>
</tr>
</tbody>
</table>

Non-GMO Project Standard Version 14.3 Redline March 1, 2019

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.

Commented [A4]: Proof of purchase is currently required to demonstrate compliance of Verified Status Inputs and Ingredients. Invoices, purchase orders, and bills of lading are currently among the list of documents accepted as proof of purchase. The Project proposes extending this requirement to all Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients. What additional considerations should the Project take into account before adopting the proposed change?

PLEASE CLICK HERE TO COMMENT
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.

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

4.5.5 Proof of purchase must accompany Verified-Status Inputs and Ingredients and Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients.

Commented [A5]: Proof of purchase is currently required to demonstrate compliance of Verified-Status Inputs and Ingredients. Invoices, purchase orders, and bills of lading are currently among the list of documents accepted as proof of purchase. The Project proposes extending this requirement to all Testable and Non-Testable High-Risk Major, Minor, and Micro Inputs and Ingredients. What additional considerations should the Project take into account before adopting the proposed change?
5 Onsite Inspections

5.1 At minimum, 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 as long as Products, Ingredients, and Inputs they manufacture are the result of a system that has been designed to avoid GMOs.

5.4 The TA may require additional inspections based on an overall risk analysis of the supply chain undergoing evaluation.

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 Table 3-2, 3-3, and 3-4 Table 3-3 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

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

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

This Action Threshold is based on the annual average of all lots tested.

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

Compliance with this Action Threshold may be based on the quarterly 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 may be used to demonstrate compliance with the Action Threshold.

**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.

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

---

Commented [A6]: The Project proposes changing the compliance of feed test results from a 5% annual averaging pathway to a 5% quarterly averaging pathway. Should this proposed change be adopted? It would mean that instead of Participants complying with the 5% Action Threshold by averaging test results over a period of one year, test results would need to be averaged each quarter and that average must be at or below 5%. What additional considerations should the Project take into account before adopting the proposed change?

PLEASE CLICK HERE TO COMMENT
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.

6.3.6.a Planting seed, vegetative propagation materials, and livestock, poultry, bee, fish, and other animal/seafood feed cannot demonstrate compliance via Section 6.3.6, Section 6.3.6.
The Participant must justify in writing to the TA why the requirements of Section 6.1 are problematic to achieve for every lot at initial verification and at each renewal.

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.

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.

This compliance pathway will be revisited during the 2020 comment period.

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 A copy of the original result for 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 under the following requirements can be met conditions:

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; and

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 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%; 1%; and

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. If the Testable High-Risk precursor, Input, or Ingredient cannot be tested in compliance with Section 6.4.3.a or Section 6.4.3.b, compliance with the appropriate Action Threshold cannot be demonstrated and the lot must not be used in a Verified Product.

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 proficiency 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; and
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.

In most cases, testing is a required validation tool for confirming compliance with the Action Threshold of Testable High-Risk Major Inputs and Ingredients. In the case of Non-Testable High-Risk Inputs and Ingredients, where testing is not an available validation tool, or in the case of Inputs and Ingredients classified as other than Testable High-Risk Major, the Project uses a process-based approach that includes comprehensive Affidavits as an alternate validation tool.

At the discretion of the TA or the Project, Affidavits may be required in additional situations not explicitly identified in this Section 7.

7.1 Global Affidavit Requirements

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

7.1.2.1 All Affidavits must include the Project’s definitions of Biotechnology and GMO as they appear in Appendix A.

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

7.1.4 At minimum, Affidavits should be accompanied by supporting documentation.

7.1.5 At minimum, 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 are identified in Appendix B.2. An Affidavit stating that any such Non-Testable High-Risk Major, Minor, or Micro Input or Ingredient is not the result of Biotechnology Non-GMO is required to establish compliance with this Standard Section 7.2.
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.

7.4 Affidavit Compliance Based on Geographic Origin²

7.4.1 Certain Testable and Non-Testable High-Risk crops and their derivatives comprising a single Input may demonstrate compliance with aspects of this Standard based on geographic origin.

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

7.4.3 The Affidavit must state:

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

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

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

²The Project maintains the list of geographic locations (and associated frequencies and necessities of testing) that comply with Section 7.4.2.
7.4.34 When available, valid third-party IP certificates are acceptable alternatives to Affidavits when the scope of the third-party certification program satisfies the requirements for which an Affidavit would be used in Section 7.4.2. 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.

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.

8 Special Requirements for Specific Products, Ingredients, and Inputs
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 Livestock and Poultry
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.

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. 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. Unless otherwise specified, compliance with the 5% Action Threshold is based on the quarterly
average of all lots tested] 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 material is, or is present in, the Product under evaluation.

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

<table>
<thead>
<tr>
<th>Product/Major</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Animals must comply with Section 8.1.2 Section 8.2, Life Cycle</td>
<td></td>
</tr>
<tr>
<td>2. Major Inputs to Rations are within the scope of review and must be found compliant with Table 8-2</td>
<td></td>
</tr>
<tr>
<td>3. Inputs to Ration formulations are classified based on the combination of Weight Percentage as present in the Ration formulation, Risk Status, and Testability</td>
<td></td>
</tr>
<tr>
<td>4. Major High-Risk Inputs to the Ration formulation must comply with:</td>
<td></td>
</tr>
<tr>
<td>a. Section 4, Chain of Custody,</td>
<td></td>
</tr>
<tr>
<td>b. Section 8.1 Section 8, Livestock and Poultry,</td>
<td></td>
</tr>
<tr>
<td>c. Section 8.1.8 Section 8.9, Onsite Farm and Feed Mill Inspections.</td>
<td></td>
</tr>
<tr>
<td>5. In addition to Ration compliance, the livestock or poultry-derived material must comply with:</td>
<td></td>
</tr>
<tr>
<td>a. Section 4, Chain of Custody,</td>
<td></td>
</tr>
<tr>
<td>b. Section 5, Onsite Inspections,</td>
<td></td>
</tr>
<tr>
<td>c. Section 8.1.8 Section 8.9, Onsite Farm and Feed Mill Inspections,</td>
<td></td>
</tr>
<tr>
<td>d. Section 9 Section 10, Product Specifications and Labeling, and</td>
<td></td>
</tr>
<tr>
<td>e. Section 10 Section 11, Quality Assurance</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minor</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Comply with Standard requirements as a Product/Major OR</td>
<td></td>
</tr>
<tr>
<td>2. Comply with Section 7.3, Testable High-Risk Minor and Micro Inputs and Ingredients (e.g., Verified-Status, organic certification)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Micro</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Comply with Standard requirements as either a Product/Major OR</td>
<td></td>
</tr>
<tr>
<td>2. Comply with Standard requirements as a Minor</td>
<td></td>
</tr>
</tbody>
</table>

Commented [A7]: The Project proposes changing the compliance of feed test results from a 5% annual averaging pathway to a 5% quarterly averaging pathway. Should this proposed change be adopted it would mean that instead of Participants complying with the 5% Action Threshold by averaging test results over a period of one year, test results would need to be averaged each quarter and that average must be at or below 5%.

What additional considerations should the Project take into account before adopting the proposed change?

PLEASE CLICK HERE TO COMMENT
Table 8-1  Compliance of Livestock and Poultry-derived Products, Ingredients, and Inputs

<table>
<thead>
<tr>
<th>Livestock and Poultry-derived Products, Ingredients, and Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR</td>
</tr>
<tr>
<td>3. All Inputs to Rations are outside the scope of review; comply with Section 3.1.3, Micro Inputs and Ingredients</td>
</tr>
</tbody>
</table>

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. Non-conformity. Removal of animals from a Non-GMO compliant group (e.g., herd, flock, etc.) for medical treatment is permitted, during which time their feed is out of the scope of review and their non-material (e.g., milk, must not, eggs, etc.) may be collected from them 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 group.

8.18.2.1 Meat animals, including culls (other than poultry): starting at birth (the feed of nursing mothers is not evaluated) and ending at slaughter

8.2.2 Poultry, including spent hens: starting on the 2nd day after hatching and ending at slaughter

8.2.3 Laying hens: starting 30 days prior to initial verification and for the remainder of the animal’s productive life (including rest and molt periods)

8.2.4 Dairy animals: 30 days prior to initial verification and for the remainder of the animal’s productive life (including dry periods)
### 8.3 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

<table>
<thead>
<tr>
<th>Testable High-Risk</th>
<th>Minor</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sampling and testing must comply with Section 8.4, Section 8.5, Section 8.6, and Section 8.7, as applicable AND/OR 2. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin 3. Comply with Section 4, Chain of Custody, from the point of testing onward 4. Farming operations must comply with Section 8.8, Onsite Farm and Feed Mill Inspections</td>
<td>1. Comply with Section 7, Affidavits OR 2. Out of scope</td>
<td>1. Comply with Section 7, Affidavits OR 2. Out of scope</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Testable High-Risk</th>
<th>Minor</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
<td>1. Out of scope OR 2. Comply with Section 7, Affidavits</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Testable High-Risk</th>
<th>Minor</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Comply with Section 7.2, Non-Testable High-Risk Inputs and Ingredients</td>
<td>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</td>
<td>1. Out of scope OR 2. Comply with Section 7, Affidavits</td>
</tr>
</tbody>
</table>
Table 8-2  Compliance of Inputs to Rations for Livestock and Poultry-derived Products and Majors

<table>
<thead>
<tr>
<th>Testable High-Risk</th>
<th>Minor</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AND/OR</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Comply with Section 7.4, Affidavit Compliance Based on Geographic Origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Comply with Section 4, Chain of Custody, from the point of compliance with Section 7.2 onward</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Farming operations must comply with Section 8.1.8, Section 8.8, Onsite Farm and Feed Mill Inspections</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Minor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Risk inputs, by Weight Percentage as present in the Ration, are out of scope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Testable and Non-Testable High-Risk Inputs in excess of that number or amount Comply with Section 7, Affidavits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Out of scope</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.3.1 Ration Reporting Requirements

8.3.1.1 Weight Percentage, Risk Status, and Testability attributes apply to all Ration Inputs as they appear within each individual Ration.

8.3.1.2 Multiple Rations that are materially different cannot be combined into a single Ration.

8.3.1.3 Multiple Rations spanning different stages of life or production cannot be combined into a single Ration unless they are materially homogenous.

8.3.1.4 Meat operations must submit to the TA at initial verification a plan detailing the stages of life or production, including, at minimum, corresponding durations and the Ration fed to the animals for the full length of their life cycle requirement as stated in Section 8.2.1.

8.3.1.5 Poultry operations must submit to the TA at initial verification a plan detailing the stages of life or production, including, at minimum,
corresponding durations and the Ration fed to the animals for the full length of their life cycle requirement as stated in Section 8.2.2.

8.3.1.d Rations compliant on an as-fed basis are subject to additional reporting requirements including, at minimum, the following:

8.3.1.d.i The corresponding dry matter conversion of each individual Ration must accompany each as-fed Ration.

8.3.1.d.ii A written rationale for why compliance of Rations has been established on an as-fed basis.

8.3.1.d.iii The option for Rations to demonstrate compliance on an as-fed basis will be revisited during the 2020 comment period.

8.3.1.e Rations compliant on a dry matter basis have no additional reporting requirements.

8.4 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.

8.4.1 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 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.

8.4.1.4 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

Commented [A8]: The Project is strongly inclined to standardize the evaluation and compliance of Rations on a dry matter basis. In order to assess how this would affect Participants currently using an as-fed model, we propose a benchmarking process whereby said Participants must provide a written rationale explaining the basis for an as-fed approach (in addition to providing the corresponding dry matter conversion for each Ration). Should the data collected through benchmarking lead us to conclude that standardizing to evaluation and compliance of Rations on a dry matter basis is feasible, how much time should the Project allow for Participants to transition from evaluation and compliance of Rations on an as-fed basis to a dry matter basis?

PLEASE CLICK HERE TO COMMENT
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.

8.4.1.4.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>
<thead>
<tr>
<th>Number of Farms per Region</th>
<th>Number of Farms to be Sampled and Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fewer than 10 farms per region</td>
<td>minimum of 1 farm tested per region per quarter</td>
</tr>
<tr>
<td>10 to 20 farms per region</td>
<td>minimum of 2 farms tested per region</td>
</tr>
<tr>
<td>21 to 50 farms per region</td>
<td>10% of farms tested per region</td>
</tr>
<tr>
<td>51 to 100 farms per region</td>
<td>5% of farms tested per region</td>
</tr>
<tr>
<td>Over 100 farms per region</td>
<td>minimum of 6 farms tested per region</td>
</tr>
</tbody>
</table>

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.

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.
8.4.1.4.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.

8.4.1.4.a.iv  Testing within the Regional Model

Testing must comply with Section 6.3.3. 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.

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

The sampling and testing 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 6.4 or 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.

8.18.4.3 Group Compliance Model  Large certified organic farming operations where goods are pooled, large certified organic farming operations where goods are not pooled, and large conventional farming operations where goods are either pooled or not pooled, may demonstrate compliance with the Standard through a group compliance model. The group compliance model must include an Internal Control System (ICS). All components of the ICS are subject to final approval by the TA. At minimum, the ICS shall include:

8.4.3.a A clearly defined scope outlining the ICS management structure including personnel, titles, roles, and contact information, and conflict
of interest policy.

8.4.3.b A listing of farms, facilities, and/or operations within the group (group members) being overseen, and the locations of all farms in the operation, locations of all feed mills, which feed mills service which farms, locations of all processing facilities, where Parallel Processing is taking place, and which group member(s) are responsible for testing.

8.4.3.c A training plan for ICS Personnel including how ICS personnel educate their group members.

8.4.3.c.i Each member of the group must have, and acknowledge access to, a copy of the most recent Standard version.

8.4.3.c.ii Each member of the group must have, and acknowledge access to, any relevant documents such as SOPs, sampling and testing plans, etc.

8.4.3.d A comprehensive plan for how each group member will comply with all relevant Standard sections based on the nature of their goods and Ration formulations, including Section 4, CoC, Section 8.2 through Section 8.7, Section 8.8, Onsite Farm and Feed Mill Inspections, Section 10, Product Specifications and Labeling, and Section 11, Quality Assurance.

8.4.3.d.i Frequency of inspection must be at least once per year by ICS personnel of all farms under the scope of the ICS.

8.4.3.d.ii Third-party inspections must be conducted annually on 10% of all farms Parallel Processing the same Major High-Risk Inputs to Rations. Farms are chosen by the TA.

8.4.3.d.iii How the ICS will handle Minor Non-conformities.

8.4.3.d.iv How the ICS will handle Major Non-conformities.

8.4.3.e For large certified organic farming operations where goods are pooled, a sampling and testing plan in compliance with Section 8.4.1 and Section 8.6, for each group member responsible for testing.

8.4.3.f For large certified organic farming operations where goods are not pooled and for large conventional farming operations where goods are pooled or not pooled, a sampling and testing plan in compliance with Section 8.4.2 and Section 8.6, for each group member responsible for testing.

8.4.3.g Frequency with which group members submit test results to the ICS.

8.4.3.h How the results will be handled (quarterly averaging) or pass-fail.

8.5 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 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 Through 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.a1 and Section 8.1.6.b2.

8.1.6.a1 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.b1 High-moisture Crops 2

Green chop, as well as silage and similarly fermented feeds. When post-harvest testing of green chop and/or silage is feasible, sampling must comply with Section 6.2, testing must comply with Section 6.3, and test results must comply with either Section 6.4 or Section 6.5. When post-harvest testing is not feasible for high-moisture crops, green chop and/or silage because compliance cannot be established with one or more of the sections listed above, these feed inputs may be demonstrated through seed testing, Affidavit, or use of Verified-Status seed. In all cases, the grower must demonstrate traceability from the planted field to the harvested feed crop.

8.1.6.b2.a When test results are available, each lot of seed planted must be compliant with Section 6 and test at or below the Action Threshold.

8.1.6.b2.b 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, Non-GMO and an invoice and Affidavit from the grower confirming planting location.

8.1.6.b2.c 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:

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

8.7.1.7.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.a
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.c
The Non-GMO integrity of every Testable and Non-Testable High-Risk crop compliant with Sections 8.1.7.2.a and 8.1.7.2.b is maintained through compliance with Section 4.

8.1.8 Onsite Farm and Feed Mill Inspections

8.8.1 Large farming operations compliant with Section 8.4.3, Group Compliance Model, are required to have 10% of all farms Parallel Processing the same Major High-Risk Inputs to Rations inspected by a third party on an annual basis. Farms will be chosen by the TA.

8.8.2 All farms and feed mills may be subject to annual inspections at the discretion of the TA.

8.8.3 Farms must be inspected annually when Parallel Processing of the same Major High-Risk Input to a Ration is occurring.

8.8.4 Unless the TA finds cause for inspection, inspections may not be required for:

8.8.4.a
Certified organic farming operations in which goods are pooled or not-pooled during final processing

8.8.4.b
Conventional farming operations that are not Parallel Processing the same Major High-Risk Input to a Ration

8.8.4.c
Feed mills that are not Participants

8.8.5 At the TA’s discretion, unannounced inspections may be used to ensure compliance with this Standard.
9 Special Requirements for Specific Products, Ingredients, and Inputs

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.

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.

8.29.1 Apiculture

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

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

8.29.1.2 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.

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

8.29.1.3.a Meet all requirements of Section 7;

8.29.1.3.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). 3

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 9.2 Beer, Wine, and Liquor

9.2 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.c, Micro Exemption, and cannot be the result of Biotechnology Non-GMO.

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

9.3.1 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.

9.3.2 An Affidavit meeting all the requirements of Section 7.2 must, in addition, confirm that the Microorganism is not the result of Biotechnology and is Non-GMO.

9.3.3 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.

9.3.4 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.

9.4 Probiotics

9.4.1 When probiotic Microorganisms, or Inputs or Ingredients derived from probiotic Microorganisms, are Products, or are Major or Minor Ingredients, the probiotic Microorganism is within the scope of review and must be found compliant. The growth media for probiotic Microorganisms as Inputs, Ingredients, and Products are temporarily outside the scope of evaluation. This temporary removal from scope will be revisited during the 2020 comment period.

9.4.2 An Affidavit meeting all the requirements of Section 7.2 must, in addition, confirm that the probiotic Microorganism is not the result of Biotechnology and is Non-GMO.

9.5 Seafood
This Section 9.5, Seafood, applies to all saltwater and freshwater aquatic animals.

9.5.1 Farm-raised seafood (in captivity from egg to harvest and/or where nutrient additions are provided) shall be fully evaluated as a High-Risk Product, Ingredient, or Input and requires the evaluation and compliance of Ration Inputs.

9.5.2 Products, Ingredients, and Inputs derived from farm-raised seafood shall be evaluated in the same manner as livestock and poultry Products, Ingredients, and Inputs in Section 8 and Section 3.

9.5.3 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.

9.6 Vitamins and Supplements
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 removal from scope will be revisited during the 2020 comment period.

10 Product Specifications and Labeling

910.1 Specifications for Obtaining Inputs and Ingredients
910.1.1 For Products verified under the PVP, Participants shall not knowingly plant, purchase, or use Inputs or Ingredients that are not compliant with the Standard.
910.1.2 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.

910.1.3 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.

910.1.3.a Any Non-Testable High-Risk Input or Ingredient, justify to the TA why a Verified-Status Input or Ingredient, or Low was not used.

910.1.3.b Provide evidence that any Testable High-Risk Input or Ingredient that is spot purchased has been tested in accordance with the requirements of this Standard and that the test results are at or below the relevant Action Threshold.

910.1.3.c Demonstrate that all Non-Testable High-Risk Inputs or Ingredients, Verified-Status Inputs or Ingredients, or Low-Risk Inputs or Ingredients that are spot purchased are compliant with all applicable requirements of Table 3-43 and Table 3-2, respectively.

910.1.3.d 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 in a timely manner.

910.1.3.e 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.

910.2 Labeling

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

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

910.2.3 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% One-hundred percent GMO absence claims 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 “Made with Non-GMO Project Verified” (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.

10.2.4 High-Risk Micro Ingredients, other than artificial and natural flavors, Enzymes, and Microorganisms, that have been Micro Exempted under Section 3.1.3.c cannot be listed with the same name, or any other common name, on the Principal Display Panel of a retail consumer Product.
Ingredients, other than artificial and natural flavors, Enzymes, and Microorganisms, cannot be named on the Principal Display Panel of a retail consumer Product if one or more of their sub-Ingredients (as appearing in a parenthetical ingredient declaration or supplement facts panel) have been Micro Exempted under Section 3.1.3.c and the Micro-exempted sub-Ingredient(s) is/are considered to reasonably characterize the Ingredient appearing on the Principal Display Panel.

11 Quality Assurance

1011.1 Total Quality Management Systems

1011.1.1 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.

1011.1.2 Compliance with applicable requirements of the Standard shall be identified as key quality indicators of the Participant’s total quality system.

1011.1.3 The Participant shall monitor and control the compliance of Inputs and Ingredients purchased and finished Products, and this shall be documented.

1011.1.4 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.

1011.1.5 All SOPs, documents, forms, and specifications needed by personnel to fulfill the requirements of the Standard shall be readily available to relevant personnel.

1011.1.6 Records shall be retained for a minimum of 3 years.

1011.2 Nonconformities and Corrective Actions

1011.2.1 Global Nonconformity and Corrective Action Requirements

1012.1.1 Full compliance with the Standard must be achieved prior to initial verification.

1012.1.b Changes in processes, procedures, Inputs, Ingredients, or Products, which could impact compliance with any aspect of the Standard, are deemed Non-conformities and shall trigger corrective actions.

1011.2.1.b Non-conformities discovered during the Program application or renewal process must be resolved in order to achieve or maintain compliance with the Standard.

Commented [A9]: The Project proposes rescoping and renaming what was formerly known as the “Defining Ingredient Rule (v14.3 Section II.D.1 and v14.3 Appendix A – Terms and Definitions: Defining Ingredient).” The Project proposes removing the terminology “Defining Ingredient” and making High-Risk Micro Ingredients appearing in text on the Principal Display Panel of retail consumer goods ineligible for Micro Exemption. The intention is to prevent Non-GMO claims from being made on ingredients that have been exempted from evaluation. What additional considerations should the Project take into account before adopting the proposed change?

PLEASE CLICK HERE TO COMMENT
11.2.1.d 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 in Section 11.2.2, Major Non-conformities or in Section 11.2.3, Minor Non-conformities, where appropriate.

11.2.1.e Identification of nonconformities, corrective actions, root cause analyses, and successful remediation of the nonconformity shall all be documented.

11.2.2 Major Nonconformities

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

11.2.2.a Discovery of any Major nonconformity must be followed by a timely root cause analysis, and corrective action plan. “Timely” is typically considered to be within seven (7) days and rarely longer than thirty (30) days.

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

11.2.2.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.

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

11.2.2.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.
Findings of the root cause analysis must be reported in writing to the TA, together with the planned corrective actions to be undertaken.

The TA will review, and at their discretion approve the findings of the root cause analysis and the planned corrective actions.

Corrective actions must be completed in a timely manner, typically within thirty (30) days and rarely longer than ninety (90) days of the completion of the root cause analysis and corrective action plan. Documentary evidence must be submitted to the TA within five (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.

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

Any known Major Nonconformity that goes unreported and/or uncorrected and/or keeps recurring according to the requirements in Section 10.2.2 Section 11.2.2 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.

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

Minor Nonconformities shall trigger corrective actions.

Minor Nonconformities and corrective actions shall be reviewed, at minimum, at the time of the annual evaluation. Verification renewal shall be contingent upon appropriate resolution of any such Minor Non-conformity.

Renewal evaluation of every Verified Product shall be required at least annually. Renewal evaluation must ensure that all, at minimum:
11.3.2.a The Product and all Ingredients and Inputs within the scope of review are compliant under the current Standard version.

11.3.2.b All evidence of compliance requirements are on file with the TA is current and active, current, and current and active.

11.3.2.d All Non-conformities have been met, addressed.

11.3.3 No changes to the Product or its manufacture and processing that would compromise the Product’s compliance with this Standard have occurred, and that

11.3.4 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 Non-conformities 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.
Appendix A – Terms and Definitions

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

Bioengineered Substance\(^4\) - A substance that contains genetic material that has been modified through in vitro recombinant deoxyribonucleic acid (rDNA) techniques and for which the modification could not otherwise be obtained through conventional breeding or found in nature.

Biotechnology\(^5\) - 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 - An annually renewed document confirming a laboratory’s current compliance with, and participation in, the NGP Non-GMO Project Approved Laboratory Program. It includes the list of High-Risk crops for which the laboratory is approved to test.

Certificate of Verification (COV) - An annually renewed document demonstrating compliance with the PVP which includes a signed written agreement with the Project, where applicable a signed written agreement with the TA, and Product level compliance with the Standard, as determined by a Technical Administrator.

Compliant/Compliance - In accordance with the referenced and applicable requirements 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.

\(^4\) 7CFR 666.1 2018
**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 Engineered or Genetic Engineering (GE)** - See Genetically Modified or Genetic Modification.

**Genetically Modified or Genetic Modification (GM)** - A term referring to the process of applying biotechnology used to create GMOs.

**Genetically Modified Organism (GMO)** - An organism into which the genetic material has been changed through biotechnology in a way that does not occur naturally by multiplication or recombination, and/or natural recombination. Its derivatives; 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 used. Any material or substance that is a component in the creation of a wholesale or retail consumer good and present in said good, although possibly in a modified in either its original or altered form.

**Input** - Any material or substance that is used in the activities along the CoC during the production of a consumer or wholesale or retail consumer good. All Inputs are not necessarily represented in, or present in, said good.

**Internal Control System (ICS)** - A robust internal oversight structure that functions as the administrative body responsible for maintaining compliance of all members with one or more set(s) of requirements.

**Major Nonconformity** - A deviation that could affect the compliance of an Input or 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** - All 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 or Ingredients to the Product to exceed the relevant Action Threshold. This includes...
small*immaterial* changes to procedures, recordkeeping, documentation, or anything else that does not have the potential to impact compliance with the relevant Action Threshold.

**Mono-input**—A material containing a single input.

**Nonconformity**—Non-conformity—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, which Biotechnology has not been applied, and its derivatives.

**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 Non-GM and genetically modified GM versions or where publicly commercially available tests do not exist.

**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 PVP and signs a License Agreement with the Project.

**Principal Display Panel**—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**—(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 and/or where bulk Product is packaged for final sale and/or where bulk Product is labeled for final sale.

**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 goods enrolled in the PVP.

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7 21 CFR §101.100 2017
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 or poultry feed, typically encompassing one or more states, in which farms ship unprocessed livestock products or poultry materials 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 Non-GM and GM versions and where publicly commercially available tests exist.

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 - A microscopic organism (such as a bacterium, yeast, fungus, or alga) that performs metabolic functions and reproduces/multiplies.
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.

B.1 Testable High-Risk Inputs and Ingredients

B.1.1 Crops
The following list of Testable High-Risk crops is exhaustive:
- Alfalfa
- Canola
- Corn (except popcorn)
- Cotton
- Papaya
- Soy
- Sugar beets
- Zucchini and yellow summer squash

B.1.2 Animal-derived Inputs and Ingredients
- 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

B.1.3 Inputs, Ingredients, and 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

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8 Note that canola is also on the list of Non-Testable High-Risk Products, Inputs and Ingredients, and Inputs and must therefore be compliant with the requirements in both Section 6 and Section 7.
9 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. Animal-derived materials are considered Testable High-Risk under the Standard.
10 Per Section 8, Section 9.1, and Section 9.5, verification of livestock and poultry, bee, and seafood Products and Major Inputs and Ingredients requires the testing of feed.
11 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.
- Molasses – derived from sugar beets
- Monosodium glutamate
- Sucrose – derived from sugar beets
- Textured vegetable protein – including soy protein
- 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

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

B.2.1 Crops
- Canola (ODM)\(^{12}\)
- Potato (RNAi)
- Soy (TALEN)\(^{13}\)

B.2.2 Microorganism and Enzyme Inputs and Ingredients
- Algae
- Bacteria
- Enzymes
- Microbial cultures and starters
- Yeast

B.2.3 Ingredients or Substances with Synbio Counterparts

\(^{12}\) Note that canola is also on the list of Testable High-Risk Products, Inputs and Ingredients, and Inputs and must therefore be compliant with the requirements in both Section 6 and Section 7.

\(^{13}\) Note that soy is also on the list of Testable High-Risk Inputs and Ingredients and must therefore be compliant with the requirements in both Section 6 and Section 7.
Appendix C – Monitored-Risk List

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.

C.1 Testable Monitored-Risk Inputs and Ingredients

C.1.1 Crops
- Beta vulgaris (e.g., chard, table beets) – cross pollination risk from GM sugar beets
- Brassica napo (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 and Ingredients

C.2.1 Crops
- Apple
- Camelina (false flax)
- Corn (CRISPR-Cas9)\(^\text{14}\)
- Mushroom
- Orange
- Pineapple
- Sugarcane
- Tomato

C.2.2 Animal-derived Inputs and Ingredients
- Salmon

C.2.3 Ingredients or Substances with Synbio Counterparts
- Spider silk

\(^{14}\text{Note that corn is also on the list of Testable High-Risk Inputs and Ingredients and must therefore be compliant with the requirements in Section 6.}\)