



High-Risk Inputs: Examples

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The Non-GMO Project (the Project) monitors inputs and ingredients that are at a high risk of being genetically modified (GM). Crops with GM varieties that are widely commercially available, as well as all inputs and ingredients derived from those crops, are considered high risk.

For testable high-risk major inputs and ingredients, testing must be employed at a point along the supply chain where there is sufficient DNA intact to yield meaningful results in order to validate that the input or ingredient is not GM. High-risk major inputs that are non-testable require affidavits attesting to their Non-GMO status. More information about high-risk input and ingredient evaluation can be found in the Project's guides High-Risk Inputs: Testing and High-Risk Inputs: Non-Testable Affidavits [here](#).

HIGH-RISK CROPS

Alfalfa, canola, corn (*except popcorn*), cotton, papaya, potato, soy, sugar beets, zucchini and yellow summer squash

The acreage of GM varieties of these crops in the US is so abundant, it is likely that if buyers do not intentionally seek out and source Non-GMO, they will end up with a GM crop. The high risk designation alerts buyers to the necessity of intentionally sourcing Non-GM crop varieties and their derivatives in order to meet the requirements of the Non-GMO Project Standard.

HIGH-RISK 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

Animal-derived materials are also high risk because of the prevalence of GM crops in animal feed.

HIGH-RISK INPUT AND INGREDIENT EXAMPLES

Amino acids, ascorbic acid, aspartame, citric acid, corn syrup, ethanol, flavorings, hydrolyzed vegetable protein, lactic acids, maltodextrins, microbial growth media, molasses, monosodium glutamate, sodium ascorbate, sodium citrate from glucose syrup, sucrose, textured vegetable protein, and vitamin C, vitamins, *as well as many other ingredients*

Regardless of how much an input or ingredient has been processed from its original crop form, any input or ingredient that is derived from a high-risk crop is, itself, high risk.

For example, papaya juice and natural papaya flavoring are high risk because they are derived from the high-risk crop papaya.

HIGH-RISK MICROORGANISM AND ENZYME INPUTS AND INGREDIENTS

Algae, bacteria, enzymes, microbial cultures and starters, yeast

The relationship of high-risk crop to high-risk input or ingredient also applies to derivatives that undergo more complicated processing such as ingredients developed or refined through microbial processes. These processes often involve microorganisms such as yeast or bacteria as well as high-risk crops used in growth media, both of which make the input or ingredient high risk. For example, the ethanol that is commonly used as an ingredient in flavorings and extracts is often derived from corn or sugar beets through a process of yeast-based fermentation and purification. Although corn is processed and changed to contribute to the creation of ethanol, the corn is a high-risk crop that is processed using high-risk microorganisms so ethanol is likewise high risk. Inputs and ingredients may be high risk for either or both reasons.

High-Risk Evaluation

High-risk crops and derivatives are highly likely to be GM at some point in the supply chain because the GM crop variety is so commonly grown and distributed. However, they can also come from processes that do not use GMOs and can be intentionally sourced Non-GMO. For instance, hydrolyzed vegetable protein can be derived from a Non-GM variety of corn. It can also come from crops like grapeseed or rice that are not at a high risk of being GM.

Participants in the Non-GMO Project Product Verification Program (PVP) will always need to take extra care when sourcing high-risk crops, inputs, and ingredients by seeking Non-GM versions and continually validating their Non-GM status through testing or affidavits. The high-risk designation helps the PVP focus on where GMOs may appear in the supply chain and determines the compliance pathway for a product that is or includes these crops, inputs, and ingredients. The best way to ensure a product can achieve Non-GMO Project Verification is to intentionally source Non-GMO.

This guide is for informational purposes only. Product evaluations are completed on a case-by-case basis; please consult a TA with specific questions about product compliance. In the event of any conflict or inconsistency between the information in this guide and the current version of the Non-GMO Project Standard and/or its associated program documents, the Non-GMO Project Standard and its associated program documents shall govern and control.
