

Plant-Based Foods FAQs

What kinds of GMOs are used in plant-based products? Where do they show up?

Plant-based products such as milk alternatives and veggie burgers are at high-risk of containing GMOs because corn and soy are often key ingredients — more than [92%](#) of corn and soy grown in the U.S. is genetically modified. Recently a new wave of plant-based products made with synthetic biology ("synbio"), sometimes referred to as "precision fermentation," are showing up online and on grocery store shelves.

What is synbio? Why is it GMO?

Synbio, or synthetic biology, is a method that relies on genetic engineering for the modification of microbes such as yeast, algae, or bacteria to produce a variety of novel products. The biotechnology industry is marketing this method as "precision fermentation" because it exploits a natural process by genetically engineering the microbes to produce scents, flavors and proteins. Precision fermentation might sound like an improved natural process, but it's actually a form of genetic engineering. Despite claims that synbio ingredients are not GMOs, they are considered products of genetic engineering by the Non-GMO Project. Synbio is a prohibited process in North America's most meaningful certification for GMO avoidance, the Non-GMO Project's [Standard](#).

What are synbio ingredients?

Synbio ingredients are novel compounds made by exploiting genetically modified microbes such as yeast, algae or bacteria. Inside industrial vats, the genetically engineered microbes are fed a growth medium of simple sugars, such as corn or soy. They ferment, producing compounds that are then used in a variety of products. Some examples of synbio ingredients include non-animal dairy proteins used in milk, ice cream, and cream cheese spread, or synthetic fats or blood-like substances used in meat alternatives. Synbio can also be used to create flavorings, colorants and other additives designed to make plant-based products mimic animal-derived products. A few of the brands releasing synbio ingredients and products into the market include: Impossible Foods, The Urgent Company, Perfect Day, Brave Robot, Nick's, California Performance Co., Modern Kitchen, and Betterland Foods. Significant investment capital is being directed at more development and commercialization.

Are synbio dairy ingredients vegan?

Some synbio ingredients would not meet a strict vegan's criteria for vegan-friendly products. Vegan products don't involve animals or animal products in any part of the development process. However, the creation of synbio dairy proteins is possible because blood drawn from a cow was used to map its genome in 2009. That genetic information was then stored in a computer database and used to program the genetically engineered microorganisms. If these products are marketed as "nature identical" in taste and performance, are they really vegan?

Is "animal-free" dairy okay for people with allergies to conventional dairy products?

No, synbio milk, cheese, ice cream, whey protein and other products can contain the same potential allergens as traditional dairy.

Are GMOs in plant-based foods labeled?

In the U.S., labeling laws for genetically modified foods are inconsistent. [Bioengineered food](#) disclosures are required on some product packaging, but exemptions and limitations in the current law mean that many products made with GMOs are not labeled. Some new GMO companies are even advertising their products as "non-GMO." The best way to avoid GMOs is to look for the Butterfly.

Are plant-based products made with GMOs better for the planet?

Because synbio products don't make direct use of traditional livestock farming, they are often marketed as an environmentally friendly alternative to conventional animal-derived products. However, confirming environmental claims is next to impossible. The processes used to create new GMOs are proprietary secrets. Without industry transparency, environmental claims can't be substantiated.