

Synbio Dairy FAQs

What is synbio? Why is it GMO?

Synbio, or synthetic biology, is a method that relies on genetic engineering for the modification of microorganisms 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 dairy is non-GMO, it is a prohibited process in North America's most meaningful certification for GMO avoidance, the Non-GMO Project's Standard.

What is synbio dairy protein?

Companies are now developing synbio dairy proteins, which are marketed as "animal-free dairy." How does it work? Microbes are genetically engineered in a laboratory to produce dairy proteins. Inside industrial vats, the microbes are fed a growth medium of simple sugars, such as corn or soy, to produce dairy proteins. The proteins are separated from the growth medium and combined with flavorings, other proteins, colorants, texturizers, processing aids, etc. Those proteins are then used in a variety of products, including milk, ice cream, cream cheese spread, desserts, and more. Because synbio dairy proteins don't rely on traditional livestock farming, they are marketed as an environmentally friendly alternative to conventional dairy and even advertised as vegan food. A few of the brands releasing synbio dairy ingredients and products include: 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.

Is synbio dairy protein vegan?

Synbio dairy would not meet a strict vegan's definition of a vegan-friendly protein alternative. Strictly speaking, vegan products don't involve animals or animal products in any part of the development process. 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.

Is synbio dairy okay for people with allergies to conventional dairy products?

No, synbio dairy can contain the same potential allergens as traditional dairy.

Is synbio dairy safe for human consumption?

We don't know. Because these products are unlabeled and unregulated in the marketplace, independent research has not been conducted to prove microbe-derived protein is safe for consumption. A study on Impossible™ Burger commissioned by the company itself found that consuming the yeast-derived protein resulted in unexplained changes in weight gain; changes in the blood chemistry that may have indicated onset inflammation, kidney disease, or anemia; and disruptions to the reproduction cycle. Synbio dairy companies have found that, in spite of filtering to remove GE microflora from the end product, some trace amounts can still end up there.

Is synbio dairy better for the planet than regenerative, organic and non-GMO dairy?

Livestock farming done right is crucial for regenerating soil health and moving agriculture away from energy-intensive and greenhouse gas-emitting synthetic fertilizers. Eliminating cows entirely from dairy production cements our reliance on synthetic fertilizers and the fossil fuels that go into producing them. Small, well-managed, happy and healthy herds are an important part of efforts to draw carbon out of the atmosphere and down into the soil.

Is synbio dairy a climate solution?

While industrial animal agriculture is a big contributor to greenhouse gasses and climate change, synbio dairy is also an industrial process with many of the same consequences. The growth medium is likely derived from GMO monocrops of corn or soy which destroy biodiversity and require large amounts of synthetic fertilizer created with fossil fuels. The process also produces biohazardous waste that requires incineration – also a greenhouse gas producer, and one that isn't needed in organic, non-GMO dairy production.