



Are GMOs Safe to Eat?

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Scientific research currently shows that there are no hazards associated with eating GMOs.

All GMOs available to consumers have obtained Food and Drug Administration (FDA) approval. The World Health Organization (WHO), the American Medical Association, and the National Academy of Science have stated that GMOs are not likely to present risks to human health.

Regulated...

The FDA regulates the safety of GMOs like any other food, but they recognize that this technology may pose unique risks. So, the FDA created the Plant Biotechnology Consultation Program, which is a set of voluntary guidelines GMO developers may meet to confidently gain FDA approval that their product is safe. All commercially available GMOs in the US have been through this consultation process and received FDA approval.



...Safety Tested

It is unlawful for anyone to market unsafe food, whether it is genetically modified or not. The USDA, EPA and FDA are all in charge of ensuring the safety of GM foods. The FDA recommends that GM crops are tested at multiple steps of the development process, specifically looking at the new protein produced by the GMO to avoid the addition of known allergens (e.g., proteins from peanuts).

"[Genetically modified] foods currently available on the international market have passed safety assessments and are not likely to present risks for human health. In addition, no effects on human health have been shown as a result of the consumption of such foods by the general population in the countries where they have been approved." (WHO, 2014)



“MSU Extension supports consumer choice in the marketplace. We work with food production systems to meet consumer preference and demand. Additionally, MSU Extension provides Michigan residents with science-based research addressing the issues and challenges they may face, providing that information in a way that can be readily adapted into their lives and businesses.”

Ron Bates, Director - Agriculture, Agri-Business Institute 2019

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Why Use GMOs?

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• **Farmers & Environment**

Genetic engineering technology is a method to genetically improve crops, providing a tool to address some of the challenges farmers face, such as reducing crop losses and making their farms more environmentally and economically sustainable. GM crop varieties can:

- * Ease of Production, Cost Savings and Improved Crop Quality
 - * These benefits occur for large and small farms who may struggle to maintain their businesses and meet local and global food demands.
- * Lower the Costs of Production and Reduce the Carbon Footprint
 - * By a reduction in fuel, equipment, and labor
- * Reduce Crop Loss
 - * From pests, weeds, mold, disease and poor weather/climate change
- * Reduce the Use of More Toxic Pesticides
 - * A plant can be genetically modified to become resistant to a pest, eliminating the need for a pesticide. The plant can also be modified to be tolerant of a pesticide or herbicide to make pest and weed control simpler without harming the plant.
- * Improved Ground Water Quality, Soil Quality and Carbon Storage
 - * Farmers can apply herbicides to GMO herbicide-resistant crops after they begin to grow, which reduces the need for tilling to control weeds. Less tilling provides better soil structure, reduces chemical run-off and increases long term storage of carbon dioxide.



• **Consumers**

- * Insulin Production
 - * One type of bacteria was genetically modified to produce human insulin and now supplies about 90% of human insulin needed by diabetics.
- * Nutrition Enhancement
 - * GMO technology can be used to improve the nutritional content of foods, such as adding extra vitamins. Currently, nutritional GMOs are not produced as frequently as farm-related GMOs.
- * Increased Food Availability
 - * With a growing population and changing climate, GMO technology may provide a way to maintain or increase food production despite decreasing farmland.
- * Increased Marketability
 - * Some genetically modified varieties of apples do not brown, making them more aesthetically-pleasing to consumers.
 - * Non-browning potatoes reduce food waste.