

# Genetically Modified Organisms (GMOs) FAQ

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## **What are genetically modified organisms (GMOs)?**

The term GMO refers to foods that have had their internal instructions (genes) changed in some way. Genes give foods many characteristics such as size, shape, color, and how they grow. Changing genes in a food will change that food's characteristics.

## **Why would anyone want to change the genes in foods?**

In the past farmers combined features of similar plants in a process called hybridization (Azevedo, 2003). For example, crossbreeding tomato type 'A' (grows quickly) and tomato type 'B' (fights off disease) would make tomatoes that have both qualities.

Now scientists can choose genes from plants, animals, viruses and bacteria and put them into foods to change their features. You can change a food to remove a possible allergen or add nutrients not normally found in that food. GMOs that resist drought, disease, insects, and toxins could help feed many people around the world.

## **What kinds of foods are genetically engineered?**

Genetic engineering technology works on nearly all fruit, vegetable, or animal products. The most common engineered crops are soybean, corn, canola and cotton oil (Azevedo, 2003).

## **Are GMOs safe to eat?**

GMOs have been a part of the American diet since the mid-1990s. There are no links to specific health problems (Key, Ma, & Drake, 2008). However, some people worry that eating GMOs could be bad for your health. Concerns include that GMOs may:

- Affect how we digest food, absorb nutrients, or fight off infection.
- Cause allergic reactions or make new allergens.
- Have a toxic effect on our bodies (Atherton, 2002).

Most studies say that eating GMOs pose no increased health risk. Other studies recommend more testing in order to be sure (Spiroux de Vendomois, 2010).

## **Who is responsible for the safety of GMOs?**

Because GMOs may affect people's health and the environment, the Food and Drug Agency (FDA), the Environmental Protection Agency (EPA), and the US Department of Agriculture (USDA) all have a role in regulating GMOs.

The FDA manages GMOs using an idea called "substantial equivalence." Substantial equivalence assumes that if GMOs are almost the same as the original versions, they are no less safe than the originals. The FDA makes GMO companies responsible for making sure their products follow these guidelines. However, GMO companies can also ask for FDA approval of their GMO product if they choose (OECD, 1993) (FDA, 1992).

The FDA reports that they are not aware of any information suggesting that GMOs have a different or greater safety concern than foods made by traditional methods (FDA, 1992).

### **How do I know if my food is genetically engineered?**

The FDA requires labeling of GMOs only if the product is significantly different from the original food in nutrition, safety, and composition. GMO products that can cause an allergic reaction require a label unless testing shows there is no allergy risk (Singh, Ghai, Paul, & Jain, 2006). The FDA supports voluntary labeling of genetically modified foods.

### **What are some other concerns about GMOs?**

Some people worry that GMOs could have harmful impacts on the environment such as:

- Decreasing the number of different plants and wildlife.
- Polluting the surrounding soil and water (Benbrook, 2012).
- Making some diseases harder to cure (Schauzu, 2000).

Debate continues on the business practices and politics of the GMO industry (Zerbe, 2004).

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