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## What do GMOS mean for family farmers and our food?



The emergence of genetically modified organism (GMO) foods – also referred to as genetically engineered (GE) – has sparked global controversy. Environmental hazards, crop contamination, skyrocketing seed costs and expensive lawsuits have all developed from genetic tampering with our food and corporate control over seed genetics. The continued release of GMO crops and lack of consumer labeling seriously compromise consumer choice, farmer rights, agricultural markets, biodiversity and public health.

### What is Genetic Engineering?

Genetic engineering alters the genetics of a species in order to create traits that cannot occur naturally or through traditional plant breeding. Sometimes this is achieved by transferring genes from one species to another, like the introduction of fish genes to tomatoes to foster frost resistance. In other cases, genes that have never before existed are created, as with the development of Monsanto's *Roundup Ready* corn and soybeans, which have been modified to resist the application of *Roundup* herbicide. Some GE crops, such as *Bt*-corn or *Bt*-potatoes, have been engineered to produce toxins in their cells as a way to combat pests—as a result, these crops are actually considered pesticides!

### Are GMOs in my food?

It's almost certain. Today, GE soybeans account for 93 percent of total U.S. soybean acreage, while GE corn accounts for 90 percent of all U.S. corn acreage and GE canola for 90 percent of canola acreage.[1] GE sugar beets, used to make sugar, make up 90% of all sugar beet acreage. Because these crops are ubiquitous in our food supply, it is extremely difficult to avoid eating GMOs. Estimates are that up to 70 percent of processed foods contain GE ingredients.[2]

### Are GMOs dangerous to eat?

Due to the unpredictable nature of genetic experimentation, many have raised concerns that new food toxins, allergens or diseases are potential risks to eaters. Though the federal government claims GE products are safe, most research on GE goods is conducted, or funded by, the biotech industry. There is little independent research into this issue. What's more, there are few mechanisms to deal with public health risks once GE goods hit grocery shelves and no mandatory labeling so consumers can avoid GE products if they want to.

### What does GE mean for family farmers?

Despite the promise of higher yields, greater pest control or fewer weeds, family farmers have found mixed results on the farm and dramatic rises in seed prices; in addition, many farmers have endured abuse from corporate seed giants.[3] For family farmers, problems with GE crops include the following:

- **Patents.** GE crops are patented. This gives the corporations that develop them the power to restrict independent research on the risks and benefits of GE products. [4] One of these corporations, Monsanto, has famously sued thousands of individual farmers for patent infringement when their fields were contaminated by GE genes.[5]
- **Consolidation & Lack of Choice.** The seed industry has suffered enormous consolidation, with at least 200 independent seed companies going out of business in the last fifteen years. Four companies – Monsanto, Syngenta, Dupont and Dow Chemical – now control over 50% of the seed market. This leaves farmers with far fewer options for seed varieties and fewer places to purchase their seeds. It also leaves corporations with the power to control seed prices, which have risen sharply as GE crops have risen in prominence. Since 2001, family farmers have watched corn seed prices rise by 135 percent, while soybean seed prices went up 108 percent.[6]
- **Corporate Control.** Farmers who buy GE seeds must sign contracts that dictate how their crop is grown – including what chemicals to buy – and forbid them from saving seeds. This has given corporations incredible control over the production of major staple crops in America.
- **Superweeds and Superpests.** GE crops have fostered the development of superweeds and superpests that are extraordinarily difficult to manage. For example, there are now at least 10 species of *Roundup*-resistant weeds in 26 states, as well as superweeds sprouting up in Australia, China and Brazil.[7] In turn, affected farmers must revert to older and more toxic chemicals, more labor or more intense tillage to combat pests.
- **Contamination.** Contamination of organic and conventional crops by GE genetics presents huge problems for farmers. For organic farmers, GE contamination can cost them their organic certification, and in turn the premium price they usually receive for their crop. Meanwhile, on several occasions conventional farmers have seen their crops rejected in global export markets as a result of GE contamination.

### Do GMOs harm the environment?

Crop contamination is a critical environmental hazard presented by GE crops. Most plants are pollinated by insects or birds over a several-mile range. This means that the pollen of a GE plant can cross fencelines and move into non-GE fields, certified organic fields and into the wild. This cross-pollination illustrates the enormous difficulty in controlling GE technology. There's no recall on genetics.

GE crops pose additional environment risks, such as unintentional harm to other insects and animals in the ecosystem. The sheer prevalence of GE crops also threatens biodiversity in our seed supply, making us more vulnerable to pest outbreaks. The US Department of Agriculture conducts no monitoring to see if any GE crop has

harmed the environment once it's released.<sup>[8]</sup>

### What does the USDA say about GMOs?

In a [February 2014 report by the US Department of Agriculture](#), researchers found mixed results of GMO seeds over the first 15 years of commercial use. The report found that GMO seeds have not been shown to definitively increase yield potentials, and "in fact, the yields of herbicide-tolerant or insect-resistant seeds may be occasionally lower than the yields of conventional varieties. The report states that several researchers have found "no significant differences" between the net returns to farmers who use GMO herbicide-tolerant seeds and those who use non-GMO seeds.

The report did find that there are financial benefits in the ability of GMO crops to prevent yield loss to pests, allowing crops more yield potential and higher monetary returns. Additionally, insecticide use on corn farms was 0.02 pound per acre in 2010, down from 0.21 pound per acre in 1995, the report states.

But while insecticide use has gone down, herbicide use on GMO corn is rising, the report states. Herbicide use on GMO corn increased from around 1.5 pounds per planted acre in 2001 to more than 2.0 pounds per planted acre in 2010. Herbicide use on non-GMO corn has remained relatively level during that same time frame, the ERS said.

And the over-reliance on glyphosate has translated to an increase in weed resistance, which makes crop production much harder. Glyphosate is the chief ingredient in Roundup herbicide sold by Monsanto, and its use has translated to the glyphosate resistance seen in 14 weed species and biotypes in the United States, according to the report.

To read the full USDA report, [click here](#).

### What is Farm Aid doing about GE?

Farm Aid avoids GE food in the [HOMEGROWN concessions](#)® for sale at our concerts. We support mandatory labeling of GE ingredients so that our food system is more transparent and eaters can make informed decisions about the food they eat. We also advocate for anti-trust enforcement against corporate control in the seed sector and a regulatory framework that holds seed companies responsible for GE contamination. [Click here](#) to see our position on GE foods.

Farm Aid has joined with more than 400 organizations across the country to call on the Food and Drug Administration (FDA) to mandate labeling for all GE foods. This isn't just about our rights as eaters. Farmers should have the right to purchase, plant and save non-GE seeds, and grow their crops without fear of GE contamination. Lack of regulation for genetic engineering violates all of these basic rights for both farmers and eaters.

### Sources

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