

Food For Maine's Future

June 2010

Factsheet # 1



What you need to Know :

The Truth about Genetically Modified Organisms (GMO)

In 2009, fourteen million farmers in 25 countries cultivated genetically modified organisms (GMOs) — organisms grown from seeds whose DNA has been engineered—on over 330 million acres. In the US alone, GMOs account for over 80 percent of the corn, soybean and cotton produced. The worldwide proliferation of GMOs has been driven by industry claims that these organisms are the solution to most environmental and agricultural problems in the world today. But in the fourteen years since their commercialization, GMOs have failed to live up to the promises.

MYTH #1: GMOs Save Farmers Money

Biotech companies claim that GMOs save farmers money by reducing the need for tillage and decreasing pesticide use, both of which are proving false (see below). In addition, concentration in the seed industry has driven seed prices to record highs while eliminating less expensive conventional corn and soybean seed options from the market. In the past ten years, soybean prices have risen 230 percent. In the case of corn, GMOs cost as much as seven times more than organic seeds in 2010. And in the steepest year-to-year increase in history, corn seed prices rose 30% while soybean seeds cost nearly 25% more in 2009 than 2008.

These dramatic price increases can be attributed to the growth of “stacked” traits and the technology fees tied to them. By combining multiple traits into a single variety, companies can quickly drive up prices because each trait has its own technology fee that farmers must pay. As a result, triple-trait varieties like Monsanto’s RR2 soybeans and eight-trait “SmartStax” corn are projected to nearly double farmers’ operating costs per acre by 2012 while boosting Monsanto’s profits nearly a third. High costs and past poor performance have resulted in lower than anticipated sales of RR2 and “SmartStax” in 2010.

MYTH # 2: GMOs Decrease Pesticide Use

“Roundup Ready” crops engineered by Monsanto to tolerate its flagship herbicide glyphosate (marketed as Roundup) account for nearly 90 percent of the soybeans and cotton and 85 percent of the corn grown in the United States today. These herbicide-tolerant (HT) crops have increased total pesticide use by 382.6 million pounds since 1996, resulting in a .25 pound increase of pesticide use per acre of GMO planted. Nearly half the total increase in herbicide use on HT corn, soy, and cotton crops from 1996 to 2008 can be attributed to the recent emergence and rapid rise of superweeds—weeds resistant to glyphosate—resulting from farmers excessive reliance on the pesticide. Between 2007 and 2008 alone, herbicide use skyrocketed 31.4 percent. As these weeds continue to spread, farmers will have to plow their fields more frequently

to keep weeds under control, a practice that will increase erosion, chemical runoff, and farmers’ reliance on fossil fuels. In contrast, the average application rate of herbicides applied to non-GMO crop acres has steadily declined since 1996.

Bt crops—GMO varieties engineered to produce a toxin lethal to insects and pests—have helped mitigate these increases by reducing the amount of insecticides used on corn and cotton by 64.2 million pounds since 1996. However, the widespread use of Bt remains a concern for organic farmers who fear that pests will soon become resistant to Bt, one of the few non-toxic pest management strategies available to them.

MYTH #3: GMOs are the Solution to World Hunger

Biotech firms have long promised that GMOs will help reduce world hunger, citing the potential for increases in production. But the Union of Concerned Scientists’ debunked this claim in their 2009 report, *Failure to Yield*. While the average corn production per acre in the five years between 2004-2008 was about 28 percent higher than before GMOs were introduced, gains are primarily the result of traditional breeding approaches, not genetic engineering. At best, genetic engineering provided an average .2-.3 percent increase in the operation yield of Bt corn varieties compared to conventional practices since 1996. Similarly, data suggests that GMO technology is *not* responsible for the 16 percent gains in soybean yield since the mid-1990s. And no GMO varieties have yet to increase the intrinsic yield of crops—the amount grown under ideal conditions.

Furthermore, only a handful of GMO crops are produced for food. There are no commercial GMO varieties of staples such as wheat, barley, oats, rice, or potatoes grown in the world today. Between 60 and 90 percent of all the GMO soybeans currently harvested are used for animal feed or converted into bio-diesel.

According to the UN, there are 200 million more people hungry in the world today than there were before the commercialization of GMOs—the majority of whom are resource

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poor farmers living in developing countries and who make up a notable 90 percent of all GMO farmers. Further research and funding should be directed towards traditional breeding methods, low-external-input farming practices, and a fairer distribution of wealth and resources.

MYTH #4: GMOs Are Safe

In 1992 the Food and Drug Administration ruled that genetically modified foods were “generally recognized as safe” despite consistent reports from FDA scientists acknowledging that the effects of genetic engineering were vastly different from those of traditional breeding methods. “We don’t have a robust enough regulatory system to be able to give us a definitive answer about whether these crops are safe or not,” said Doug Guirian-Sherman, a scientist who served on the FDA biotech advisory committee from 2002 to 2005. “We simply aren’t doing the kinds of tests we need to do to have confidence in the safety of these crops.” The FDA doesn’t require biotech companies to conduct safety tests on their crops nor are they required to label GMOs. As a result, tens of millions of consumers unknowingly put themselves at risk to a handful of potentially harmful side health effects including increased toxicity, resistance to antibiotics, allergic reactions, immune suppression, cancer, and nutrient deficiency.

MYTH #5:

GMOs Will Solve Climate Change

For years, the biotech industry has promised that GMOs will help farmers mitigate and adapt to climate change. They claim GMOs will: (1) Decrease fossil fuel consumption by reducing pesticide use and encouraging no-till farming, (2) increase yields through drought resistant varieties and (3) increase production of renewable energy (biofuels).

New studies show, however, that greater reliance on corn-based ethanol will actually double greenhouse emissions over the next thirty years as a result of land-use changes. The rise of superweeds is quickly reversing trends in pesticide use on GMO crops, and farmers who grow them are returning to more frequent cultivation.

For more information or to join

Food For Maine’s Future

PO Box 51 • Sedwick • ME • 04676

Phone: 207-244-0908

www.foodformainesfuture.org

Building a just, secure, sustainable and democratic food system.

Food for Maine’s Future is a member of the
National Family Farm Coalition.



110 Maryland Ave. N.E., Suite 307 • Washington, DC 20002
www.nffc.net

Turning It Around:

To reverse the current trends, Food for Maine’s Future supports:

- *A moratorium on the approval of GMO crops and full liability protections.* Corporations should be held responsible for damages caused by contamination, and farmers who save their own seeds must be protected from threats, intimidation, and lawsuits.
- *Patent law reform prohibiting exclusive licensing of GMO traits.*
- *Laws requiring the labeling of foods containing GMOs. Consumers have a right to know what’s in their food. Opinion poll show over 60% of Americans would avoid GMO foods if they were labeled.*
- *A federal “Farmer Protection Act” that restores farmers rights to negotiate collectively for fair contracts.* Such rights are based on fair competition and market transparency.
- *The enforcement of anti-trust laws prohibiting the unlawful concentration of the seed industry.* Only four companies—with Monsanto in the No. 1 position—now control over 50 percent of the world’s proprietary seed. Lack of competition has created fewer options and higher costs for farmers seeking non-GMO seeds.
- *The preservation of seed diversity through public breeding programs, farmer-led participatory plant breeding, and seed farms.* In 2010, Food For Maine’s Future broke ground on a seed farm and established a Corn Seed Collaborative to support the growing of locally-adapted and native corn varieties in Maine.

For Further Reading...

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