



# Consumer Choice and the Spread of Genetically Engineered Food

By Stephanie Davio

Genetic engineering (GE) in the U.S. has grown drastically in the U.S. in the past two decades—from seven percent of soybean acres and only one percent of corn acres in 1996 to 94 percent of soybean and 88 percent of corn acres in 2011. In recent years, the U.S. Department of Agriculture (USDA) has been on a fast-track to deregulate GE crops, leaving leery consumers and organic farmers behind to fend for themselves. In spite of the huge spike in producing GE food, the safety of these crops for human consumption has not been sufficiently addressed. Long-term health effects of consuming genetically modified food are still largely unstudied and unknown, yet they abound in the marketplace without any labeling requirement to set them apart for consumers unwilling to be guinea pigs. For all of those who would prefer not to eat genetically modified (GM) food, products that are certified organic are the only guaranteed way to go. But, as GE crops become more prevalent, organic is under threat from contamination. So what can be done? Here is a look at some of the legal battles and consumer efforts that are underway.

## Background

The U.S. decision to deregulate GE crops fails to take into account several scientifically-validated environmental concerns, such as the indiscriminate nature of genetically modified gene flow in crops, a heavy reliance on faulty data, and a high degree of uncertainties in making safety determinations. It overlooks the problem of herbicide-resistant weeds and insects, as well as the widespread corruption of conventional seed varieties by genetically modified strains, along with documented severe economic injury to farmers and markets.

In fact, GMO products have so far done the opposite. Numerous reports, including *Failure to Yield* by Union of Concerned Scientists and *The GMO Emperor Has no Clothes: A Global Citizens Report on the State of GMO's*, highlights scientific research and empirical evidence around the globe demonstrating the failure of genetically modified organisms (GMOs) to deliver on their advertised promises to increase yields, reduce pesticide usage, and tolerate drought with “climate ready” traits.

Furthermore, the accelerated speed of deregulating GMO crops is a direct threat to organic farmers and producers. Back in 2003, the Organic Farming Research Foundation conducted a nationwide survey which found certified organic farmers reporting financial and related operational impacts associated with the threat of contamination by GMO's for the first time.

In addition to contamination concerns, there are serious public health and pest resistance problems associated with GM crops. Organic farmers have expressed concern since the introduction of GMOs that the overuse of GM technology will lead to pest resistance and leave many farmers without the important tool of organic agriculture. This is inevitable when genetically engineered material is incorporated into every cell of a plant.

## Emerging GMO Crops

Since the Summer 2011 issue of *Pesticides and You*, many new varieties of genetically engineered plants have been introduced or are on their way to the market place. Here is a look at some of the emerging crops and an update on some of the legal battles

that are being fought:

### **2,4-D-Tolerant Corn**

Dow AgroSciences has developed a crop that is resistant to the herbicide 2,4-D, a major component in Agent Orange. In its petition, Dow AgroSciences states that 2,4-D is increasingly important for chemical farmers because of the presence of weeds that have developed resistance to glyphosate, as a result of the widespread use of Monsanto's genetically engineered glyphosate-resistant crops. When Monsanto introduced glyphosate, it was touted as a safer and less toxic alternative to herbicides like 2,4-D. An emerging body of scientific literature is raising serious concerns about the safety of glyphosate as well.

While USDA attempts to assure the public that 2,4-D is safe, scientists have raised serious concerns about the safety of this herbicide. 2,4-D is a chlorophenoxy herbicide, and scientists around the world have reported increased cancer risks in association with its use, especially for soft tissue sarcoma and malignant lymphoma. Four separate studies in the U.S. report an association with chlorophenoxy herbicide use and non-Hodgkin's lymphoma.

USDA is currently accepting public comments on Dow's petition until the end of April 2012. An online petition by The Cornucopia Institute opposing Dow's 2,4-D corn variety, which will be sent to President Obama and Secretary Vilsack, can be signed at [www.cornucopia.org/say-no-to-dows-ge-corn/](http://www.cornucopia.org/say-no-to-dows-ge-corn/)

### **Dicamba-Tolerant Soy**

Growing recognition that pervasive planting of glyphosate-tolerant "Round-Up Ready" corn, soybeans, and cotton is accelerating weed resistance has prompted GE seed companies to rush to the market 'stacked' varieties that are resistant to additional herbicides. In addition to 2,4-D corn, Monsanto has been partnering with BASF on dicamba and glyphosate-tolerant crop varieties since 2009 with a focus on soybeans, cotton, and corn. Commercial release of engineered seeds for these crops is projected for the mid-point of this decade. Dicamba is a neurotoxic chlorinated benzoic acid herbicide that the Environmental Protection Agency classifies as acute toxicity class III, slightly toxic. The material is a recognized eye irritant, moderately persistent in the environment and highly mobile in both soil and water. Chronic exposure is linked to reproductive and developmental effects.

### **Drought Tolerant Corn**

Despite nearly 45,000 public comments in opposition to MON87460 and only 23 in favor, USDA approved the purported 'drought-tolerant' variety of corn in late December 2011. There are a host of problems with this new variety, including lack of efficacy and health data. Back in May, 2011, USDA found that the crop did not perform well. Furthermore, this is of high threat to organic farmers, as USDA in its Environmental Assessment concedes that gene flow of corn pollen is likely to occur. It is well-established that corn pollen travels, and pollen from genetically engineered plants will contaminate natural corn plants.

### **Glyphosate-Tolerant Alfalfa**

In January 2011, USDA announced plans to fully deregulate glyphosate-resistant, "Roundup Ready" alfalfa, which would primarily be fed to dairy cattle, but also beef cattle, pork, lamb, and sheep. Center for Food Safety (CFS) is leading a suit filed against USDA in March 2011, which Beyond Pesticides has joined. This is the second case challenging the legality of USDA's handling of GE alfalfa.

In 2007, in another case brought by CFS, a federal court ruled that the USDA's approval of the engineered crop violated environmental laws by failing to analyze risks, such as the contamination of conventional and organic alfalfa, the evolution of glyphosate-resistant weeds, and increased use of Roundup. The case resulted in USDA undertaking a court-ordered four-year study of GE alfalfa's impacts under the National Environmental Policy Act (NEPA). Remarkably, it marked the first time USDA had ever undertaken an Environmental Impact Statement (EIS) in over 15 years of approving GE crops for commercial production. While USDA worked on the EIS, GE alfalfa remained unlawful to plant or sell, a ban that remained in place despite Monsanto appealing the case all the way to the U.S. Supreme Court, where the EIS requirement was upheld.

However, this past January U.S. District Judge in San Francisco has issued a ruling finding that USDA's decision to deregulate GE alfalfa was not unlawful. Judge Samuel Conti of the U.S. District Court for the Northern District of California found that USDA did not act improperly by deregulating the GE Roundup Ready alfalfa, developed by Monsanto, and that the agency's environmental review of the product was adequate. According to the *San Francisco Chronicle*, Judge Conti stated that USDA is not required to "account for the effects of cross-pollination on other commercial



crops in assessing the risks posed by a new crop.”

### **Glyphosate-Tolerant Sugar Beets**

Glyphosate tolerant, “Roundup Ready” sugar beets were initially deregulated in 2005. A coalition of environmental groups and organic seed companies, led by the Center for Food Safety, challenged the USDA approval in 2008. It argued that GE sugar beets would contaminate organic and non-GE farmers of related crops, such as table beets and chard, as well as increase pesticide impacts on the environment and worsen the current Roundup-resistant “superweeds” epidemic in U.S. agriculture. In September 2009, Judge Jeffrey S. White in the federal District Court in San Francisco agreed, and ordered USDA to prepare an EIS assessing these and other impacts, as required by NEPA. In August 2010, after a year of vigorous litigation over the proper remedy for USDA’s unlawful approval, the court again agreed with the plaintiffs, threw out the USDA’s approval, and halted planting.

In summer 2010, USDA and the biotech industry, led by Monsanto, demanded the court allow planting to continue unabated. The District Court refused to do so and instead set aside USDA’s approval of the crop based on the agency’s failure to comply with environmental laws. That precedential ruling was also preserved by the Appeals Court order. During this case’s appeal, USDA approved 2011-2012 planting of GE sugar beets under the terms of a novel permitting and “partial deregulation” scheme while it conducted the court-ordered analysis. Last fall, USDA announced the availability of a draft EIS and accepted public comments through December 2011.

### **GE Turf**

Scotts Miracle-Gro Company has developed Kentucky blue grass that been engineered to be resistant to the herbicide glyphosate, commonly sold as Roundup. Kentucky bluegrass is a popular choice for yards and fields as well as pastures and prairies, and the GE seed is expected to be made available for consumers to plant in their home lawns, potentially making it one of the most widely planted GE crops in the country.

Last July, USDA issued a decision stating that it does not consider a new type of genetically engineered (GE) turf grass to be subject to federal regulations. In the decision announced by the USDA’s Animal and Plant Health Inspection Service (APHIS), the agency stated that it does not have the authority to regulate the introduc-

tion or transportation of the GE grass seed under the provisions of the *Plant Protection Act*.

### **Seed Patenting**

In early 2011, a group of 81 family farmers, seed businesses, and organic agricultural organizations, including Beyond Pesticides, preemptively filed suit against Monsanto in an effort to protect farmers from patent infringement in the event of drift contamination by the company’s GE seed. The suit, *Organic Seed Growers and Trade Association, et al. v. Monsanto*, was filed in Federal District Court in Manhattan on behalf of Public Patent Foundation (PUBPAT). The crux of the federal District Court case is Monsanto’s claim that it has the right to sue farmers whose crops are contaminated for infringing upon the company’s intellectual property. The intellectual property Monsanto is referring to is the patented genetic material in the drifting pollen that is ultimately expressed in the contaminated organic or non-genetically engineered crop. On February 24 2012, much to the dismay of organic farmers and environmentalists, the District Court dismissed the case, denying farmers without a contract with Monsanto the right to seek legal protection from the biotech giant. The plaintiffs have vowed to appeal.

### **What Consumers Can Do**

#### **Support Organic**

The best way to avoid genetically engineered foods in the marketplace is to purchase foods that have the USDA certified organic seal. Under organic certification standards, genetically modified organisms and their byproducts are prohibited from being used. Unlike chemical-intensive agriculture and genetically engineered food, researchers continue to discover the environmental and health benefits of eating and growing organic food. There are numerous health benefits to eating organic, besides a reduction in pesticide exposure.

Unfortunately, the current lax regulations on genetically engineered crops in the U.S. present a unique risk to organic growers. Wind-pollinated and bee-pollinated crops, such as corn and alfalfa, have high risks of cross pollination between GE crops and unmodified varieties. No provision exists to effectively protect organic farms from contamination. Furthermore, under the current law, biotech seed companies bear no legal or financial responsibility for such contamination, so the burden is on organic growers to prevent contamination of their crop.



“Roundup Ready” alfalfa would primarily be fed to dairy cattle

Beyond Pesticides maintains extensive resources related to the environmental, economic, and human health benefits of organic production system, including information on supporting organic production and upholding the integrity of organic certification. For more information, see Beyond Pesticides' organic program page at [www.beyondpesticides.org/organicfood](http://www.beyondpesticides.org/organicfood).

### Consumer Guides

- True Food's Shopper Guide: How to Avoid Foods Made with GMOs, Center for Food Safety <http://truefoodnow.files.wordpress.com/2011/02/cfs-shoppers-guide.pdf>
- Guide to Verified GMO-free Brands and Food, NON-GMO Project <http://www.nongmoproject.org/take-action/search-participating-products/>

### Further Reading

- Kimbrell, George, Genetically Engineered Food Failed prom-

ises and hazardous outcomes, *Pesticides and You*. Summer 2011 <http://www.beyondpesticides.org/gmos/index.htm>

- Genetically Engineered Food An Overview, Food and Water Watch, September 2011 <http://documents.foodandwaterwatch.org/doc/GeneticallyEngineeredFood.pdf>
- Shiva, Vandana, et al., "The GMO Emperor Has No Clothes, A Global Citizens Report on the State of GMOs," Navdanya International. October 2011. <http://www.centerforfoodsafety.org/wp-content/uploads/2011/10/GMO-EMPEROR-FINAL-10-11.pdf>
- Gurian-Sherman, Doug, Failure to Yield: Evaluating the Performance of Genetically Engineered Crops, Union of Concerned Scientists. April 2009 [http://www.ucsusa.org/assets/documents/food\\_and\\_agriculture/failure-to-yield.pdf](http://www.ucsusa.org/assets/documents/food_and_agriculture/failure-to-yield.pdf)
- Benbrook, Charles, Impacts of Genetically Engineered Crops on Pesticide Use: The First Thirteen Years, The Organic Center. November 2009 [http://www.organic-center.org/science.pest.php?action=view&report\\_id=159](http://www.organic-center.org/science.pest.php?action=view&report_id=159)

### Just Label It! Campaign

Beyond Pesticides has partnered with the JUST LABEL IT: We Have the Right to Know campaign, which is made up of a broad-based coalition of 460 partner organizations demanding that consumers have the right to know what is in their food. The campaign is dedicated to the mandatory labeling of genetically engineered foods, also referred to as genetically modified, or GMOs. The JUST LABEL IT message is: consumers have a right to know what is in our food so we can make informed choices about what we eat and feed our families. At JustLabelIt.org people can submit a comment to FDA in support of the petition, learn about the science behind GMOs and ways to avoid it in the marketplace.

Currently, there are no FDA requirements that mandate the labeling of genetically engineered foods. Just Label It was created with the premise that people have a right to know what is in their food and what they are feeding their families. The goal of the campaign is to provide a way for the consumer's voice to be heard by flooding the FDA with comments in support of the petition. So far, over a half-million consumer comments have been generated in support of the petition, which calls for food that is produced with genetically engineered (GE) ingredients to disclose this information on the label.

The coalition filed a legal petition with the Food and Drug Administration (FDA) that calls for the mandatory labeling of GE foods. Hundreds of partner organizations representing the health care community, consumer advocates, farmers, concerned parents, environmentalists, food and farming organizations, and many more concerned with protecting the consumer's right to know have joined together in support of the FDA petition and the mandatory labeling of genetically engineered foods.

**Sign the petition and submit your comments at [www.justlabelit.org/takeaction](http://www.justlabelit.org/takeaction).**

Beyond Pesticides' goal is to push for labeling as a means of identifying products containing GE ingredients in an effort to allow consumers to make informed choices in the marketplace. The European Union, Japan, Australia, Brazil, Russia, and China, require labeling for GE foods. Recently, the German corporation BASF announced that it would stop developing genetically engineered products targeting the European market, in part due to low consumer demand. Given that 93% of Americans support mandatory labeling of GE foods, Beyond Pesticides believes that the Just Label It campaign can have the same impact in the U.S. as in Europe.

