

Why Do Massachusetts Organic Growers Oppose Genetic Engineering?



Genetic Engineering (GE) is a revolutionary new technology with the ability to extract genes from one form of life and insert them into another (it can put fish genes into a strawberry). In doing so it can create totally new organisms which will pass these genetic changes on to their offspring. Why do people of the soil oppose that?



Because it will hurt the environment.

Increased Pesticide Use: Studies have found that farmers growing these genetically modified organisms (GMOs) are using as many (and sometimes more) pesticides and herbicides as conventional farmers. The 'advantage' of crops that can withstand herbicides is that heavy doses can be used to kill weeds in the field without disturbing the crop. Scientists estimate that such crops triple the amount of toxic broad-spectrum herbicides used in agriculture.

Genetic Pollution: Wind, rain, birds, bees, and other insects carry GE pollen into adjoining fields where it pollinates non-GE crops, contaminating their DNA. Pollen of some crops has been shown to travel several miles, and gene escape from cultivated crops has been documented for cotton, cucumber, corn, millet, canola, quinoa, radish, rice, sorghum, strawberry, sugarbeets, sunflowers and watermelon. Once released, it is impossible to recall GMOs as they are alive and rapidly mix with natural organisms.



Damage to Beneficial Organisms: Cornell University recently discovered that pollen from corn genetically engineered to release a pesticide was poisonous to a non-target insect, namely the Monarch butterfly. There is growing evidence that GE crops are adversely affecting several varieties of beneficial insects, including ladybugs and lacewings, as well as beneficial soil microorganisms, bees, and birds.

Creation of 'Superweeds' and 'Superpests': Pests and weeds exposed to constant and high levels of herbicides and pesticides because of GE crops will inevitably develop resistance to those chemicals. As a result, 'superweeds' and 'superpests' will emerge. Many of the world's crops are closely related to wild 'weeds'. GE canola has already spread herbicide resistance to wild mustard plants, and boll worms are emerging which are resistant to the Bt engineered into cotton plants.

Because it is a threat to family farms.

Virulent New Plant and Soil Pathogens: Engineering plants to resist viruses has been shown to cause viruses to mutate into new, more virulent forms. Similarly, engineered soil microorganisms have destroyed all other competing organisms, rendering the soil 'dead' of essential nutrients.

Invasive New Species: Just as kudzu and gypsy moths have run amok in new environments without natural enemies, so some GE species will overpower their natural cousins with unpredictable consequences.

Loss of biodiversity: The more varieties of a particular crop species are grown, the more resilient the crop. Varieties have differing resistance to particular pathogens or predators, as well as temperature or moisture extremes. If old varieties bow to one or two new engineered ones, that crop becomes more susceptible to catastrophic loss.

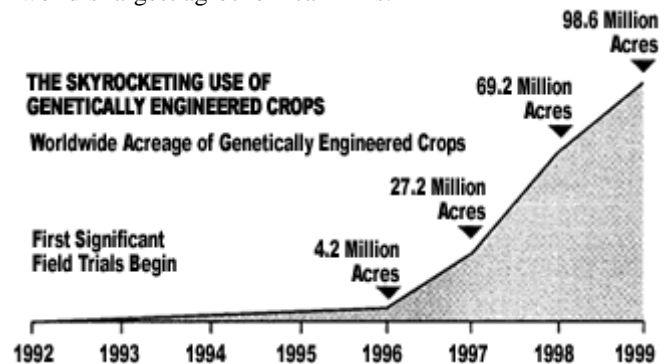
Because it is out of control.

In 1992 the Food and Drug Administration (FDA) ruled, against the recommendations of their own staff scientists, that GMOs are "substantially equivalent" to traditional foods. As a result:

- no independent, long-term safety testing is required — the firms which will benefit from the new GE foods are in charge of safety-testing their own products, and are not required to report negative findings,
- research results of these tests are considered proprietary and therefore are not available for public scrutiny,
- there is no significant evaluation of the technology for ecological impacts, and
- there is no required consumer labeling of GE foods.

As a result of this loose regulatory atmosphere, GE has flourished in a few short years. Since first field trials began in 1992, over 3000 varieties of GE plants, animals and bacteria have been developed and field tested in the US. By 1999 GMOs were planted worldwide on over 98 million acres. Now some 60 percent of all processed foods in grocery stores contain at least some GE ingredients, usually in the form of corn or soy derivatives.

Monopolistic control of seeds: Farming is dependent on the use of seeds. If there are many potential seed suppliers, competition will maintain fair prices. But recognizing the huge profits associated with biotechnology, agrochemical companies have been acquiring seed companies since the early 1990s. Today 75% of the global vegetable seed market is controlled by 5 corporations. Three of these are among the world's largest agrochemical firms.

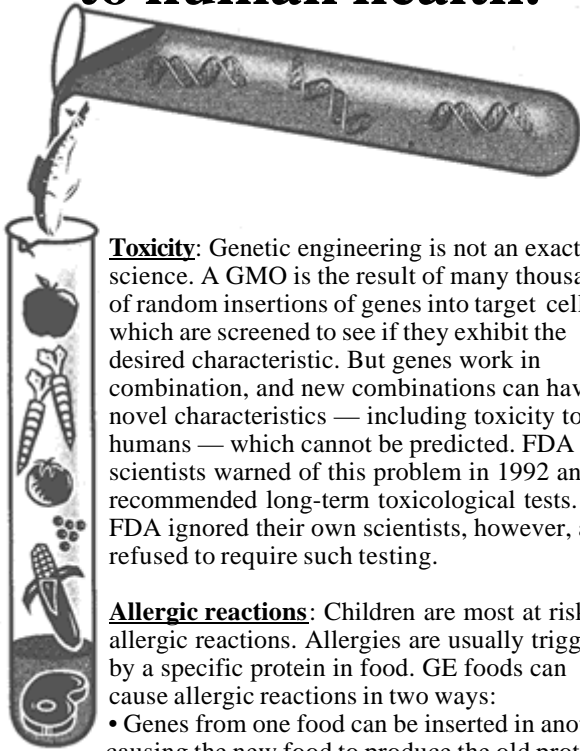


Loss of economic independence: An ecosystem is rich when a variety of organisms thrive there in mutual dependence. The same can be said for farms — diversity in farm size, markets, and crop mix makes for overall stability and strength. If GE seeds become the norm, fewer and fewer varieties will be available and those which are will be patented and licensed products. Independent family farms will become franchises, dependent on agricultural biotech firms for inputs and management services.

Presumption of guilt: As GMOs come to dominate US production, buyers in Europe and Japan are refusing shipments from America unless they can be guaranteed GE-free. Farmers who don't use GE seed are being forced to bear the expense of segregating and testing their crops in order to prove they don't use this controversial technology.

Contamination of organic crops: There is no way to protect some organic crops from pollination by a GE crop even several miles away. Use of GE by some is a serious threat to organic farmers whose markets require contaminant-free food.

Because it is a danger to human health.



Toxicity: Genetic engineering is not an exact science. A GMO is the result of many thousands of random insertions of genes into target cells, which are screened to see if they exhibit the desired characteristic. But genes work in combination, and new combinations can have novel characteristics — including toxicity to humans — which cannot be predicted. FDA scientists warned of this problem in 1992 and recommended long-term toxicological tests. The FDA ignored their own scientists, however, and refused to require such testing.

Allergic reactions: Children are most at risk for allergic reactions. Allergies are usually triggered by a specific protein in food. GE foods can cause allergic reactions in two ways:

- Genes from one food can be inserted in another, causing the new food to produce the old protein.

But allergic individuals will not know to avoid the new food.

- Novel proteins can be created by the new combinations of genes present in GE foods. No one knows what allergic reactions these may induce, because they have never been seen in nature before.

Antibiotic resistance: Genetic engineers insert genes for antibiotic resistance into their creations to mark whether the new genetic material has been successfully transferred. Medical professionals, however, have become increasingly concerned that this practice will lead to the transfer of antibiotic resistance to disease organisms in the environment and the resulting loss of effectiveness of key antibiotics in controlling major threats to public health.

Growth of cancers: At least one GE product — recombinant bovine growth hormone (rBGH) — has been shown to increase the levels of insulin-like growth factor-1 (IGF-1) in milk. This hormone can survive digestion and make its way into the intestines and blood stream of consumers. IGF-1 is an important factor in the growth of breast, prostate and colon cancers. No industrialized country except the US has legalized rBGH in milk production.

What Can You do about Genetic Engineering?

Organize educational events in your community:

Consumer organizations, garden clubs, church groups, classroom projects — there are lots of opportunities in any community to educate others about GE foods. Contact NOFA/Mass for literature and possible speakers to get things rolling.

Talk to your public officials: Let them know that you are concerned and want a moratorium on GE foods until:

- 1) they are adequately tested for human safety and environmental impact,
- 2) mandatory labels are required on them so that consumers may choose to buy them or not, and
- 3) adequate liability insurance is required of GE corporations and labs so that victims of this technology in the future may seek damages.

Buy local certified organic foods: No consumer labeling is required on GMOs, but all US organic certification programs forbid the use of GE ingredients. So to be sure you are buying food raised without genetic engineering, look for the “certified organic” logo. If the products are locally raised, you can have the extra assurance of meeting the growers and talking with them about their farm and growing methods.

Support NOFA/Mass: Send a contribution, or join and help us fight GE foods while promoting the growth of local, organic production. Many of us are farmers, but many more are gardeners, students, organic consumers and people concerned about the health and sustainability of local agriculture and the environment.

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