

Genetically Modified Crops

Biotechnology companies like Monsanto claim that genetically altered seeds are the only answer to ending world hunger, protecting the environment, and encouraging the economy. Below are some common claims that biotechnology advocates use to promote and gain support for genetically engineered seed.

1. Genetic modification is only an extension of traditional breeding.

Traditional plant crossbreeding has its limitations. Most significantly, it is very slow, taking decades to produce a plant breed in which desired traits are apparent. Genetic engineering allows this process to be faster and more precise by extracting a gene carrying the desired trait and inserting it directly into the DNA of the plant.

Genetic modification is used to break the natural boundaries that exist between species. For example, a fish and a strawberry will not breed in nature, but by using genetic modification a scientist can take a gene from a fish and insert it into a strawberry, creating a new organism. Genetic modification can occur in animals, plants, and even humans.

Biotechnology companies state that genetic engineering is simply a modification of the same breeding process farmers have been using for thousand of years. Some scientists also claim that gene manipulation is completely natural, that plants and animals of different species have crossbred to create new species for millions of years, the only difference is that geneticists are able to accomplish in months what takes nature millions of years.

No one knows what the long-term effects will be once genetically modified organisms are released into our environment.

2. GE crops have higher yields than conventional crops.

Biotech companies claim that farmers will have higher yields per acre because genetically modified crops will be able to better withstand herbicides than conventional crops.

A 1998 study by the USDA Economic Research Service showed that genetically modified corn, soybeans, and cotton did not have significant increases in yields when compared with conventional crops. Soybeans, tested in over 8,000 field trials actually produced less bushels per acre than their conventionally grown counterparts.

3. GE crops are more economical for farmers.

By using only one kind of herbicide and less of it, biotech companies claim that cost per acre will decrease. However, technology agreements allowing farmers to plant genetically modified seeds also require them to purchase new seeds each year, adding to the cost.

Some critics also say that GE crops will hurt small farmers, as they will be come "indentured" to agribusiness companies, so even if yield per acre increases so will cost per acre.

A study in 1999 compared the cost per acre (including seeds and pesticides) of Roundup Ready soybeans and conventional soybeans. The study revealed that the Roundup Ready program cost 50% more per acre than a conventional system of seed and weed management. Additionally, genetic engineering could increase hunger and starvation in developing countries. One-half of the world's farmers depend on seed saved from each harvest to plant the next year. Introducing sterile "terminator" seeds and leasing genetically engineered seeds force farmers to buy new seed each year.

4. GE crops have been pronounced safe for human consumption.

Although there is no proof that food already on the market that containing genetically engineered products are harmful, this does not mean they are safe. By saying there have been no reports of harmful effects, biotechnology advocates are implying that there are no reasons for concern.

Although FDA scientists assert that genetic engineering is different from traditional breeding, the FDA maintained the position that genetically modified foods are "substantially equivalent" to similar conventionally produced food, and therefore does not need to be tested. Doctors have also warned that genetically modified foods may cause unanticipated consequences that might take years to appear.

Geneticists also add antibiotic-resistant "marker" genes to the plants in order to tell which plants carry modified genes. There is concern that these genes could alter the bacteria that naturally exist in human digestive systems and create a new form of bacteria that would not be affected by medicinal antibiotics.

We know that allergies can transfer unexpectedly from genetic modification. We also know that levels of toxins in food can increase. Medical experts warn that antibiotics could become useless because of genetic engineers' use of antibiotic resistant genes.

It is true that there is no evidence that GMO's are safe. We are currently in a situation in which biotechnology industries are trying to turn the burden of proof.

5. There is no evidence that GE crops are harmful to environment.

Biotechnology companies state that growing herbicide resistant crops will decrease the amount of herbicides administered to the field, thus reducing the amount of residue left on crops and in the soil.

But some environmentalists fear that genetically engineered crops can cross-pollinate with certain forms of weeds resulting in a "superweeds" that are herbicide-resistant, or that over time, certain species of insects will also become resistant to pesticides.

70 percent of the genetically engineered crops in the field today are engineered to withstand high doses of farm poisons. Application of toxic chemicals is actually a necessity with these crops, while techniques that truly move farmers away from chemical use fall to the wayside. An analysis of more than 8,200 university field trials has shown that farmers who grow GMO soybeans use 2-5 times more herbicides than farmers who grow natural soybean varieties.

In addition, crops that are engineered to produce their own insecticide, such as Bt corn, are not effective or safe replacements for spraying. Because the insecticide is an integral part of the crop, it is in your food products in the grocery store, and could cause yet-undetermined health risks.

6. GE crops will encourage the economy and foreign trade.

The largest markets for U.S. wheat have already voiced concern about genetically engineered wheat. The regulatory systems in many countries in Europe and Asia will not approve a product until it has been determined safe for human consumption and will not endanger the environment.

Almost half of the wheat exported from the United States goes to Europe and Japan. The European Union has not approved a product containing modified genes since 1998, and a moratorium on further approvals has been in effect since 1999. Japan also has strict regulations on genetically modified food and crops.

7. It is possible to contain GE crops and prevent contamination of conventional crops.

Biotechnology advocates state that cross-contamination of genetically engineered crops can be prevented by various methods of separation including buffer zones between crops, and separate storage and transfer facilities. But there are several uncontrollable and impractical factors that are not considered.

No one agrees on just how much of a buffer zone is required to prevent cross-contamination, and factors such as wind and weather cannot be controlled.

8. The testing and distribution of GE crops is heavily tested and regulated.

Biotechnology companies claim that genetically engineered crops and food are the most heavily tested and regulated products in the United States.

The USDA, however, states that, "The risks for potentially unintended effects of agricultural biotechnology on the safety of new plant-based foods are conceptually no different than the risks for those plants derived from conventional breeding", and thus do not require special testing or regulations.

Neither the Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA) nor the Environmental Protection Agency (EPA) have done any long term testing on genetically modified products or their effects, nor are there any regulations specific to this technology.

In 1992, the Food and Drug Administration decided that genetically modified foods could be marketed with no requirements for long-term safety testing or labeling, and with no formal pre-marketing approval required as is standard for any food additive.

9. GE crops will help end world hunger.

Biotechnology companies claim that the reason for world hunger is that not enough food is being produced to feed the population. The real problems behind hunger are poverty, distribution, and lack of resources.

In 1998, 24 African scientists at a United Nations conference wrote an angry rebuke of Monsanto's advertising, which used photos of starving African children under the headline, "Let the Harvest Begin." In their statement the delegates wrote:

We...strongly object that the image of the poor and hungry from our countries is being used by giant multinational corporations to push technology that is neither safe, environmentally friendly, nor economically beneficial to use. We do not believe that such companies or gene technologies will help our farmers to produce food that is needed in the 21st century. On the contrary, we think it will destroy the diversity, the local knowledge and the sustainable agricultural systems that our farmers have developed for millennia and that it will thus undermine our capacity to feed ourselves.

Development experts warn that genetic modification may lead to an increase in hunger and starvation. Biotech companies are eagerly pursuing a genetic engineering technique named "terminator" technology that would render a crop's seed sterile, thus making it impossible for farmers to save seed for replanting. As Peter Rosset, Director of Institute for Food and Development Policy explains, half of the world's farmers rely on saved seed to produce food that 1.4 billion people rely on for their daily nutritional needs. These people are at risk of greater hunger from genetic engineering.

Finally, most arguments that GMOs can solve world hunger are based on the notion that the root of the problem is shortage of food. In reality, however, the world today produces more food per person than ever before. Enough food is produced to provide 4.3 pounds to every person, every day. The problem of world hunger is not one of quantity, but rather a matter of inequality, and access to food.