FAQs

Are genetically engineered foods less healthy than traditional foods?
No. Research and regulatory review have confirmed that food from bioengineered crops have the same nutritional value as conventionally produced foods. Engineered crops can actually provide nutritional benefits beyond that of conventional food when designed to do so.

Will biotech crops contaminate conventional crops and seeds?
No. There are quality control and seed purity guidelines to ensure that does not happen. These regulations take into account the movement of pollen and farmers test their crops regularly to ensure seed integrity.

What about the environment?
Farmers and biotechnologists are committed to protecting the environment. The use of bioengineered crops has helped decrease the use of insecticide by 9%, reduce soil erosion, improve water quality on farms and increase production potential, thereby reducing the need to expand production into natural habitats.

Should GM foods be labeled?
FDA requires all foods, including GM foods, to be labeled for content with nutritional information and safety issues, like potential food allergies. Labeling food by production method may take away from the nutritional value GM foods offer. If consumers wish to consume non-GMO food, they can purchase food labeled “USDA Organic” or voluntarily labeled “GMO Free.”

Is it dangerous to modify foods?
No. Genetically modifying plants from their original state is **not** new. In fact, traditional breeding has taken place for thousands of years. As science has advanced, biotechnology simply allows for more selective breeding.

Do you really think GM plants can alleviate world hunger?
While there is no one answer to ending world hunger, GM crops are certainly one tool among many. Increasing production and helping to address crop loss due to pests and disease can help hunger and malnutrition around the world.

Did you know?

- Biotech soy, corn and cotton can decrease soil erosion by 90%, provide a 70% reduction in herbicide runoff and an 85% reduction in greenhouse gas emissions, according to the Council for Agricultural Science and Technology.
- Poplar trees have been genetically engineered to clean up heavy metal pollution from contaminated soil.
- Bioengineering is being used to develop edible plant vaccinations to protect individuals against a wide variety of infectious diseases.
- Farmers are required to grow a certain amount of non-GM seed.
- *Bt* corn is developed to target only pests that eat the crop and not harm the pollinators or natural predators of the targeted pests.
- GM technology helps to reduce the price of crops used for food by as much as 30%.
- *Round Up Ready* crops allow farmers to apply mild pesticides that break down quickly and not enter the food system.
- GM plants can produce fruits and vegetables that taste better and stay fresh longer.

Maryland Grain Producers Utilization Board

53 Slama Road, Edgewater, MD 21037
410-956-5771
www.MarylandGrain.com

The *Truth* about GMO’s

Biotechnology and Genetically Modified Organisms

What is it?

Biotechnology in Plant Agriculture
Biotechnology in plant agriculture is the process of precision breeding by copying desirable genetic material from one plant and placing it into another to achieve the desired trait.

How long have GM crops been used?
The first commercialized crop developed through biotechnology was released in 1996. However, traditional breeding of seeds has been used far back into history. Precision breeding through biotechnology allows for faster and more successful isolation of desirable traits.

Why do farmers use GM crops?
Farmers are free to choose the seeds they use to grow their crops based on their knowledge of what is best for their farm and local environment. Farmers can use conventional non-GM seed or bioengineered seed to help reduce damage from weeds, insects, disease and weather.

Are they Safe?
Yes! The American Medical Association reports that in the nearly 20 years genetically engineered crops have been consumed, no overt harm to human health has ever been reported. Genetically modified plants are the result of extensive research and regulations. Today's genetically engineered products take $136 million and 13 years on average to bring to consumers. The US Department of Agriculture ensures that they are safe to grow, the Food and Drug Administration ensures they are safe to eat, and the Environmental Protection Agency ensures their production does not harm the environment.

Benefits

Environmental
Bioengineered crops contribute to the sustainability of agriculture. Engineering crops that are pest resistant allows farmers to apply less pesticides. Certain seeds also allow farmers to use conservation no-till practices which reduce erosion and allow soil to maintain water and nutrients. Less pesticide application and more conservation tillage as a result of GM seed has significantly lowered carbon emissions from the farms using them.

Consumer
Consumers can count on more affordable and consistent food through the use of biotechnology. Improved crop protection provides a more viable crop and reliable harvest. Farmers are producing more food on less land thanks to GM plants. Farmers will be required to produce more food in the next 50 years to feed the world than they have in the past 10,000 years combined, and GM crops can help make this possible.

Nutritional
Biotechnology allows for the engineering of food with higher nutritional value. For example, it has been used to develop canola and soybean oil that does not produce trans-fats, but provides omega-3 fatty acids which are beneficial for heart health.

Safety
Bioengineered crops allow farmers to grow more food that is free of disease and damage. These foods are studied extensively and the American Medical Association and World Health Organization recognize the benefits of GMOs and support their responsible use.

Conventional Breeding vs. Genetic Engineering

Whether created through natural selection, selective breeding or genetic technology, all seeds and plants are evaluated for safety and health.

Conventional Breeding
- Cross pollination can only occur between the same or very closely related species.
- Little or no guarantee of desired gene combination.
- May take the generation of millions of crosses and therefore takes an extended period of time.

Genetic Engineering
- Precise process of copying a gene with the desirable trait to cross with a plant to make it resistant to disease, pests and weather without changing anything else about its genetic makeup.
- More successful and less time consuming.

"Advances in the genetic engineering of plants have provided enormous benefits to American farmers."

- President Barack Obama