Currently a total of nine crops are commercially available in the United States: Bt maize and cotton for insect resistance, Bt and non-Bt soybeans, Bt and non-Bt canola, Bt sugar beets, Bt and non-Bt cotton, and non-Bt glyphosate-resistant (GR) crops. Whether using traditional approaches or genetic engineering, the goal of plant scientists is to develop crops with new and agriculturally useful traits. Humans have been changing plant genomes for generations - we just have more, more precise tools, today.

"PEOPLE DO NOT REALIZE THAT PLANT BREEDERS HAVE BEEN ALTERING PLANT GENOMES FOR CENTURIES."

GMO foods have a long, safe track record (over 30 years) in the food supply. From their introduction in 1996 until now, scientists have found, through repeated and extensive testing, that GMO foods are no more risky than comparable non-GMO foods, nor do they offer any nutritional value. Currently, legislation regarding the use of GM crops developed through specific genetic addition or substraction is no safer than conventional and organic crops developed through random genetic shuffling. Most people do not realize that plant breeders have been randomly altering and improving plant genomes for centuries. The development of GM crops can be employed to protect and feed the world's growing population.

"A SERVING OF GOLDEN RICE COULD PROVIDE HALF THE REQUIRED DAILY INTAKE OF PRO-VITAMIN A FOR A 1 TO 3 YEAR OLD CHILD."

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700 MILLION POUNDS LESS ACTIVE INGREDIENT OF INSECTICIDE HAS BEEN USED IN THE UNITED STATES BECAUSE OF GM CROPS BETWEEN 1996 AND 2014...

BACKGROUND on GMO ANSWERS

GMO Answers (www.GMOAnswers.com) was created to do a better job answering questions – no matter what they are – about GMOs. The biotech industry stands 100 percent behind the health and safety of the GMO crops on the market today but we acknowledge that we have done the best job communicating about them – what people in developing countries rely on for food. This will help food security in these countries by producing more food where it’s actually consumed.

Science exists to help farmers grow more with less. Analysis of US Department of Agriculture data shows global GM acre ages have increased 33-fold since 1996, while production increased 33 percent. Between 1996 and 2014, crop biotechnology was responsible for an additional 158 million tons of produce, 208 million tons of corn, 24.7 million tons of cotton lint and 9.2 million tons of soybeans. That translates to a total of 1.24 million tons of produce that are best for their farms, businesses and families.

FIVE CORE PRINCIPLES:

1. Respecting people around the world and their right to choose healthy food products that are best for themselves and their families.
2. Welcoming and answering questions on all GMO topics.
3. Making GMO information, research and data easy to access and evaluate and supporting safety testing of GM products, including independent safety testing at our products through independent, science-based methods.
4. Supporting farmers as they work to grow crops using precious resources more efficiently, with less impact on the environment and increased safety, nutritious food and feed products.
5. Leading the way in developing crops that are best for their farms, businesses and communities. This includes crops that include non-GM seeds based on market demand.

The following information is provided by GMO Answers to help support growers and organizations along the food value chain as they discuss GMOs with their members and stakeholders.

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Biotechnology in plant agriculture has come to mean the process of intentionally making a copy of a gene for a desired trait from one plant or organism and using it in another plant. The result is a GMO (genetically modified organism).

Farmers choose seeds based on what is best for their farms, market demand and local growing environments. Farmers select GMOs to reduce yield loss or crop damage from weeds, diseases, and insects, as well as from extreme weather conditions, such as drought. Farmers choose to use GMOs to reduce the impact of agriculture on their environment and their costs—by applying pesticides in more targeted ways, for example. Farmers have also used genetic modification to save a crop—such as papaya from Hawaii—that was being threatened by a disease.

There are currently nine crops commercially available from GMO seeds in the US:

- **FIELD CORN**
  - Genetic Traits: Herbicide Tolerance
  - Field Applications: Herbicide tolerance traits

- **SOYBEAN**
  - Genetic Traits: Herbicide Tolerance
  - Field Applications: Herbicide tolerance traits

- **RAINBOW PAPAYA**
  - Genetic Traits: Disease Resistance
  - Field Applications: Disease Resistance

- **KALE**
  - Genetic Traits: Nutrient addition
  - Field Applications: Nutrient addition

- **BRUSSELS SPROUTS**
  - Genetic Traits: Nutrient addition
  - Field Applications: Nutrient addition

- **WILD CABBAGE**
  - Genetic Traits: Nutrient addition
  - Field Applications: Nutrient addition

- **COTTON**
  - Genetic Traits: Disease Resistance
  - Field Applications: Disease Resistance

- **SUGAR BEET**
  - Genetic Traits: Salt Tolerance
  - Field Applications: Salt Tolerance

- **SWEET CORN**
  - Genetic Traits: Nutrient addition
  - Field Applications: Nutrient addition

What has changed, due to modern plant breeding, is size, consistency, seed performance, yield, the number of ears per stalk, and the position of the ear and the leaves on the stalks. Currently, a single ear has only one ear located about waist high (in height of a combine blade), and its leaves grow at a more upright angle to better catch sunrays and rain. A century ago, farmers planted about 8,000 corn plants per acre. Today they plant about four times as many plants per acre.

Before they reach the market, crops from GM seeds are extensively studied to ensure they are safe for people, animals and the environment. Today’s GM products are the most researched and tested agricultural products in history. Bringing a new GMO to market involves comprehensive safety and environmental reviews by regulatory bodies around the world. In addition to the review process conducted in the U.S. by the U.S. Department of Agriculture (USDA), U.S. Environmental Protection Agency (EPA) and U.S. Food and Drug Administration (FDA), other nations conduct their own rigorous certification processes and regulatory approvals. There are more than 70 countries that currently certify GM products for cultivation (growing), food import for people, feed import for animals and/or trials and testing. In 2015, 28 countries grow GMOs and over 80 import GMOs.

In the late 20th century, awareness in technology enabled us to expand the genetic diversity of crops. For years, university, government and company scientists intensively researched and refined this process. A major result has been GM seeds that maintain or increase the yield of crops while requiring less land and fewer inputs, both of which lower the impact of agriculture on the environment and reduce costs for farmers.