



GMO Answers Top Questions

Quick Answers to Top Question Categories

QUESTION: LONG TERM HUMAN HEALTH

ANSWER: GMO foods have a long, safe track record (17 years in the marketplace). 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 differ in nutritional value. Currently approved GM crops developed through specific genetic additions or subtractions are as safe as conventional and organic crops developed via random genetic shuffling. Most people do not realize that plant breeders have been randomly altering and admixing plant genomes for centuries. Techniques using chemicals and radiation to break plant DNA and induce mutations have been used to develop many conventional and organic 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 new, more precise, tools. [\[Adapted from GMO Answers\]](#)

QUESTION: GMO PRODUCTS AND BASICS

ANSWER: Only a few products in the produce aisle are GMOs – some sweet corn, some summer squash and some papayas. Currently a total of eight GM crops are commercially available in the United States – corn, soybeans, cotton, canola, alfalfa, sugar beets, papaya and summer squash. Processed foods such as sugar or vegetable oil may carry ingredients from GM crops, but the modified features of the crop are not present in the food and do not change the safety or nutritional values of the food. [\[Adapted from GMO Answers\]](#)

QUESTION: ENVIRONMENT

ANSWER: Through the use of GM crops, farmers are seeing improved performance and less environmental impact. Herbicide-tolerant GM crops have encouraged farmers to practice no-till farming. In conventional farming, the fields are plowed ("tilled") to control weeds. Because of the superior weed control from GM crops, farmers now till much less often. That has led to improved soil health and water retention, reduced runoff, and reduced greenhouse gas emissions from agriculture. Insect-resistant GM crops have greatly reduced the amount of insecticide that has to be applied to insect-protected crops. It's estimated that an astounding 600 million pounds LESS active ingredient of insecticide has been used in the United States because of the use of GM crops, significantly reducing farmers' costs and environmental footprint. GM plants with more efficient use of nitrogen and other important nutrients mean less fertilizer will be needed, saving farmers money, and less fertilizer ends up in the environment. GM plants are available to withstand moderate water deficits. In the near future these same traits may allow the same yields or better while consuming less water. [\[Adapted from GMO Answers\]](#)

QUESTION: LABELING

ANSWER: Consumers have the right to choose food that is healthy and nutritious. Although agricultural biotech companies do not sell food products directly to consumers, we support food companies' decisions to voluntarily label food products for the presence or absence of GMOs, based on their customers' choices. This type of marketing claim is often used to promote one type of product over another, and is unrelated to health or safety. Some companies have opted to voluntarily label food as "USDA organic" or "non-GMO" for their consumers who opt for food that is not made with GMOs. We also support mandatory labeling of food, including GMO food, if such food presents a safety risk to a certain population. But no evidence exists linking a food safety or health risk to the consumption of GMO foods. Hundreds of independent studies demonstrate this, and scientific and regulatory authorities around the world agree that GMO foods are as safe and nutritious as their non GMO counterparts. [\[Adapted from GMO Answers\]](#)

QUESTION: REGULATORY AND OVERSIGHT

ANSWER: GMO crops are subjected to more testing than any other new crop variety, and, as a result, we know more about this set of crops than any of the other crops that plant breeders have developed (and we've eaten!) over the past few centuries. In the US, GM crops are subjected to regulatory review by at least two, and sometimes three, federal agencies: the FDA, USDA and EPA. FDA is responsible for assessing the safety of any GM crop used for food or animal feed, and USDA assesses the crop's potential impacts on the environment and agriculture. If the GMO has been modified to provide resistance to pests that would like to eat the crop before we can e.g., insects and plant pathogens, then EPA also assesses the environmental and food safety of the new substance produced by the plant that provides the pest resistance trait. Only then do foods from those crops enter our food supply. [\[Adapted from GMO Answers\]](#)

QUESTION: FUTURE OF GMO

ANSWER: We're already making progress toward a promising future for GMOs. Scientists have demonstrated biotechnology can be used to increase the amount and stability of pro-vitamin A, iron and zinc and improve the protein digestibility of sorghum. In the coming years, this technology is anticipated to benefit Africans who rely upon sorghum, which traditionally is deficient in key nutrients. "Golden Rice," is another example of a nutritionally improved biotech crop. It's genetically engineered to provide an increased amount of beta-carotene. A serving of Golden Rice could provide half the required daily intake of pro-vitamin A for a 1 to 3 year old child.

Technology exists to help breeders develop high quality hybrids more quickly, which can help us improve productivity and sustainability faster. Scientists now are working on ways to further improve the staple crops that 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.

Biotechnology also can help farmers grow more with less. Analysis of U.S. Department of Agriculture data show global corn acres have increased 31 percent since 1981, while production increased 93 percent. Approximately 240 million "virtual" corn acres have been created in the last 30 years. That trend has to continue if we're to meet growing demand, despite conditions like drought, poor soil nutrient levels and insect pressure – all of which many experts predict will present an even greater challenge in the future. [\[Adapted from GMO Answers\]](#)



Open to Your Questions
About How Our Food Is Grown

GMO Answers is funded by the members of The Council for Biotechnology Information, which includes BASF, Bayer CropScience, Dow AgroSciences, DuPont, Monsanto Company and Syngenta. Our members are dedicated to the responsible development and application of plant biotechnology.