

Science of GMOs



What are GMOs?

GMOs are living organisms that had their DNA changed in some way. While conventional breeding, that has been going on for centuries, involves mixing all of the genes from two different sources, producing a GMO is much more targeted. Learn more at <http://s.uconn.edu/whataregmos>



Which crops have GMOs?*

Alfalfa	Cotton	Potato	Sugar beets
Apples	Eggplant**	Salmon	Golden rice**
Canola	Papaya	Soybean	
Corn	Pineapple	Squash	

**As of 2019*

***Approved but not grown in the U.S.*



What's the difference between GMO and GE?

The terms Genetically Engineered (GE) and Genetically Modified Organism (GMO) are sometimes used interchangeably. Genetically engineered organisms are created by adding a gene or set of genes to an organism's genome. Learn more at <http://s.uconn.edu/4gp>



What is organic?

Organic is a production and labeling term that indicates that the food or other agricultural products have been produced through approved methods. The organic standards describe the specific requirements that must be verified by a USDA-accredited certifying agent before products can be labeled USDA organic. The use of GMOs is prohibited in organic products.



Do GMOs harm health?

GMOs have been used safely since they were first planted in 1996, and benefit people and the environment. GMOs have been extensively studied and there is no evidence to indicate that consumption of GMOs is bad for human health. Read more at <http://s.uconn.edu/gmoandhealth>



How does genetic engineering help plants?

Genetic engineering is used in a variety of ways to protect plants from damaging pests and diseases. Crops can be quite vulnerable if a pest or pathogen is present or introduced during unfavorable conditions. If not addressed, serious crop losses can occur. This increases prices for consumers and creates economic challenges for farmers. Learn more at <http://s.uconn.edu/gmoplants>



What is the Future of GMOs?

The USDA estimates that of the 430 million acres of cultivated crop land in the US, approximately 40% (170 million acres) is currently used to produce GMO crops. Some of these GMO crops have higher production yields or lower production costs (weed control from herbicide application rather than repeated cultivations, reduced insecticide use, improved drought resistance and stress tolerance). Others have improved product characteristics, like non-browning apples and low-acrylamide potatoes. Pharmaceutical production has utilized GMOs for insulin and other products. Read more at <http://s.uconn.edu/gmofuture>

This content is generated from UConn faculty and staff with a range of expertise in the College of Agriculture, Health and Natural Resources. It can be a challenge to find understandable and unbiased science-based information. The Science of GMOs is intended to help bridge the information gap. With content reviewed by a range of professors, this page is intended to provide real answers to questions concerning people today.

FUNDING SOURCES:

UConn CAHNR

UConn Extension

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Farm Credit Northeast AgEnhancement

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References:

USDA AMS: <http://s.uconn.edu/4hw>

GMO Answers: <http://s.uconn.edu/4ht>

NC State Extension Ag Biotech: <http://s.uconn.edu/4gp>

Purdue Science of GMOs: <http://s.uconn.edu/4hu>

USDA Organic: <http://s.uconn.edu/4hv>