SHOULD YOU FEAR GMOs? NO

NUMBER OF VERIFIED HEALTH IMPACTS ATTRIBUTED TO GMO FOOD: ZERO[7]

The World Health Organization says no effects on human health have been shown as a result of the consumption of biotech foods.[7]

APPROVED

Approval for new GMO traits does not happen overnight. The time-intensive process lasts about 13 years.[8] During that time, the new biotech crop is reviewed by not one, not two, but three government agencies — the U.S. Department of Agriculture, the Food and Drug Administration and the Environmental Protection Agency.[2]

MAJOR SEED MONEY.

Not only is this process long, it is expensive as well. It takes an average of $136 million to bring the new crop trait to the market.[8]

Sources: *1: Genetic Science Learning Center at the University of Utah*

2: United States Department of Agriculture

3: The Center for Food Integrity Best Food Facts

4: AgBioForum

5: U.S. Food and Drug Administration

6: Center for Agricultural and Rural Development at Iowa State University

7: World Health Organization

8: A Consultancy Study for Crop Life International

Kentucky Soybean Board

BROUGHT TO YOU BY KENTUCKY'S SOYBEAN FARMERS AND THEIR CHECKOFF.

FEEDING THE WORLD

SCIENCE FEAR

FUTURE OF AGRICULTURE

EVERYTHING YOU WANT TO KNOW ABOUT

GMOS

INCLUDING THE TRUTH

HEALTH

FOOD SAFETY

ENVIRONMENT

CONTROVERSY

GMO

LABELING

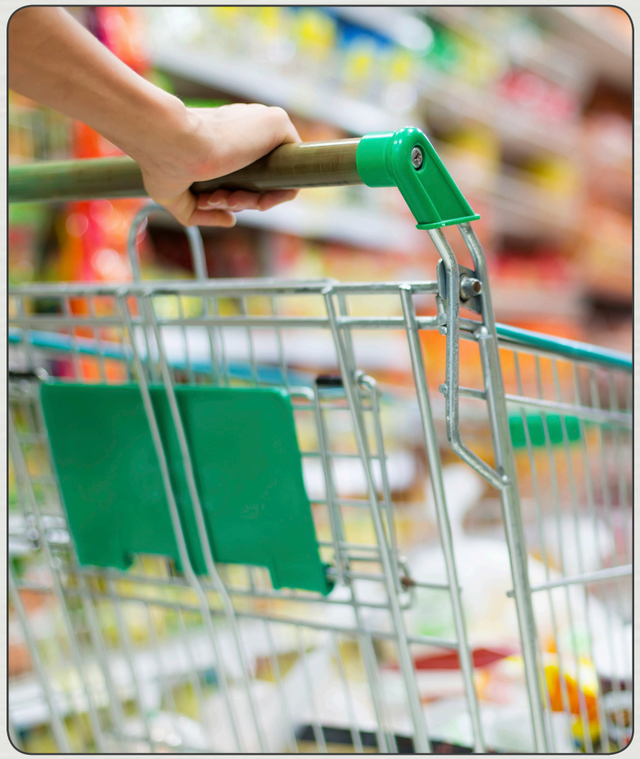
THE GUIDE TO NAVIGATING MODERN BIOTECHNOLOGY

HIGHER YIELD

GENETICALLY MODIFIED FOOD

SO WHAT ARE GMOS?

Genetically modifying plants isn't a new concept. Ancient farmers started modifying corn through selective breeding 10,000 years ago to create stronger plants and better food.[1] The science of plant breeding expanded in the 20th century, and scientists were able to develop improved varieties by selecting desirable traits in plants. By taking a small piece of DNA from one plant, bacteria or virus and adding it to a plant, scientists have developed crops that can resist drought and control bugs and weeds allowing farmers to grow more food in more places.[2]



UNDERSTANDING THE ARCHITECTURE OF DNA

Before you wrap your head around GMOs, it is important to understand DNA. The folks at the National Human Genome Research Institute compare DNA to a blueprint. In this blueprint, each strand of DNA contains many building blocks, called nucleotides. All living organisms express traits, such as brown eyes or blue eyes, depending on the order of nucleotides. Today, scientists can manipulate nucleotides in a single DNA strand to help an organism express specific traits. This occurs in nature all of the time - modern biotechnology just speeds up the process.

AN APP FOR THAT

Denneal Jamison-McClung, Ph.D., associate director of the biotech program at the University of California-Davis, compares GMOs, or biotech crops, to smartphones. Think of the phone as the plant's DNA and the gene as an app. Even after adding many different apps, you still have a phone.[3]

IN 1996, GENETICALLY MODIFIED
VARIETIES OF MAJOR CROPS
BECAME COMMERCIALLY AVAILABLE.[2]

WOOF.

Plants are not the only species expanding breeds. Take dogs, for example. Before there were German shepherds or cocker spaniels, wolves were the primary breed of the dog species.

WHETHER YOU ARE A FARMER OR NOT, BIOTECHNOLOGY PROVIDES MANY BENEFITS.

Good for the environment.

Herbicide-tolerant biotech crops allow farmers to plow less often. This creates fewer trips across the field in a tractor, which accounts for a reduction in greenhouse gas emissions.[4]

More food is grown. Traits like drought tolerance and pest resistance help crops survive in tough conditions and, in turn, improve yields.[2]

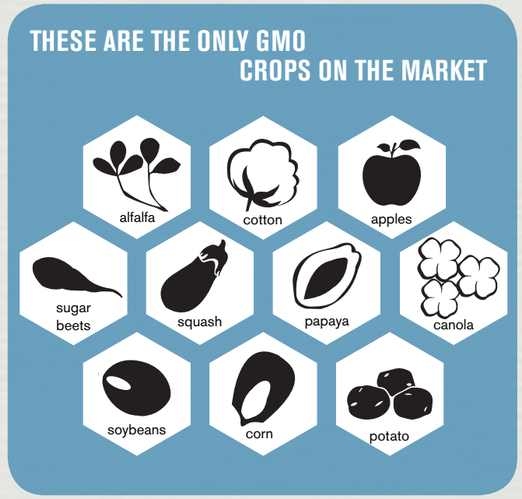
Improves nutrition.

GMOs might help with food allergies in the future. Scientists are finding ways to remove common allergens in crops like peanuts and wheat.[2]

Future biotech crops could provide enhanced-quality traits such as increased levels of beta-carotene in rice to aid in reducing vitamin A deficiencies and improved oil compositions in canola, soybeans and corn.[2]

Keeps cost down.

Corn and soybeans are ingredients in many foods and also feed the animals that produce our meat, milk and eggs. In fact, an Iowa State University study shows that without biotechnology, global food prices would be nearly 10 percent higher for foods made with soybeans and 6 percent higher for foods made with corn.[6]



Not all plants that we eat are changed by genetic modification, also known as biotechnology. Scientists change traits in crops to help them withstand their environments and benefit consumers. Currently, the only modern genetically modified plants available to consumers include corn, soybeans, alfalfa, cotton, squash, papaya, sugar beets, canola and potatoes.[3] Biotech apples hit the marketplace in 2017.

SO IS THE PLANT STILL A PLANT?

Biotechnology allows researchers to breed across species. Rest assured. When you eat a GMO food, the product is nutritionally the same as its non-GMO version.[5] Changes were made to help the plant better withstand its environment or to provide a benefit, like pest resistance. The same can be said for varieties of fruits and vegetables modified through selective breeding. Those fruits and veggies may look and taste a lot different from their ancestor plants, but they are genetically very similar.