For additional information, www.canr.msu.edu/gmos

Why Use GMOs?

Charity Goeckeritz, Ted Ferris, Sheilah Hebert, Erika Garner,
Joe Bixler, Ron Goldy, and Sarah Rautio

- ***Farmers & Environment***

Genetic engineering technology is a method to genetically improve crops, providing a tool to address some of the challenges farmers face, such as reducing crop losses and making their farms more environmentally and economically sustainable. GM crop varieties can:

  - Ease of Production, Cost Savings and Improved Crop Quality
    - These benefits occur for large and small farms who may struggle to maintain their businesses and meet local and global food demands.

  - Lower the Costs of Production and Reduce the Carbon Footprint
    - By a reduction in fuel, equipment, and labor
  - Reduce Crop Loss
    - From pests, weeds, mold, disease and poor weather/climate change
  - Reduce the Use of More Toxic Pesticides
    - A plant can be genetically modified to become resistant to a pest, eliminating the need for a pesticide. The plant can also be modified to be tolerant of a pesticide or herbicide to make pest and weed control simpler without harming the plant.
  - Improved Ground Water Quality, Soil Quality and Carbon Storage
    - Farmers can apply herbicides to GMO herbicide-resistant crops after they begin to grow, which reduces the need for tilling to control weeds. Less tilling provides better soil structure, reduces chemical run-off and increases long term storage of carbon dioxide.

- ***Consumers***
  - Insulin Production
    - One type of bacteria was genetically modified to produce human insulin and now supplies about 90% of human insulin needed by diabetics.
  - Nutrition Enhancement
    - GMO technology can be used to improve the nutritional content of foods, such as adding extra vitamins. Currently, nutritional GMOs are not produced as frequently as farm-related GMOs.
  - Increased Food Availability
    - With a growing population and changing climate, GMO technology may provide a way to maintain or increase food production despite decreasing farmland.
  - Increased Marketability
    - Some genetically modified varieties of apples do not brown, making them more aesthetically-pleasing to consumers.
    - Non-browning potatoes reduce food waste.

"MSU Extension supports consumer choice in the marketplace. We work with food production systems to meet consumer preference and demand. Additionally, MSU Extension provides Michigan residents with science-based research addressing the issues and challenges they may face, providing that information in a way that can be readily adapted into their lives and businesses."

Ron Bates, Director - Agriculture, Agri-Business Institute 2019

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