

Genetically Modified Organisms

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Genetically Modified Organisms



- A genetically modified organism (GMO) is an organism whose genetic [material] has been altered using techniques in genetics generally known as recombinant DNA technology.
- Recombinant DNA technology is the ability to combine DNA molecules from different sources into the one molecule in a test tube. Thus, the abilities or the phenotype of the organism, or the proteins it produces, can be modified through the modification of its genes.

Examples of GMOs



- Genetically modified corn (BT corn) was genetically altered to make corn that produces its own pesticides
 - Round-up-ready soybeans & sugarbeets
- There is also Golden Rice that is made with vitamins for humans in third world countries who do not receive proper nourishment
- The Grocery Manufacturers of America estimate that 75% of all processed foods in the U.S. contain a GM ingredient

Random Facts



- The first commercially grown genetically modified whole food crop in the U.S. was the tomato.
- Between 1997 and 2005 the total surface area of land cultivated by GMO's went from 4.2 million acres to 222 million acres.
- In the U.S., approximately 54% of all soybeans cultivated in 2000 were genetically-modified, up from 42% in 1998 and only 7% in 1996.
Genetically-modified cotton varieties accounted for 61% of the total cotton crop, up from 42% in 1998, and 15% in 1996.

GMO Pros: Plants

- Better resistance to weeds, pests, and disease
- Improved texture, flavor, and nutritional values
- Decreased use of chemicals
- Longer shelf life
- Efficient use of land
- More food produced = Cheaper food

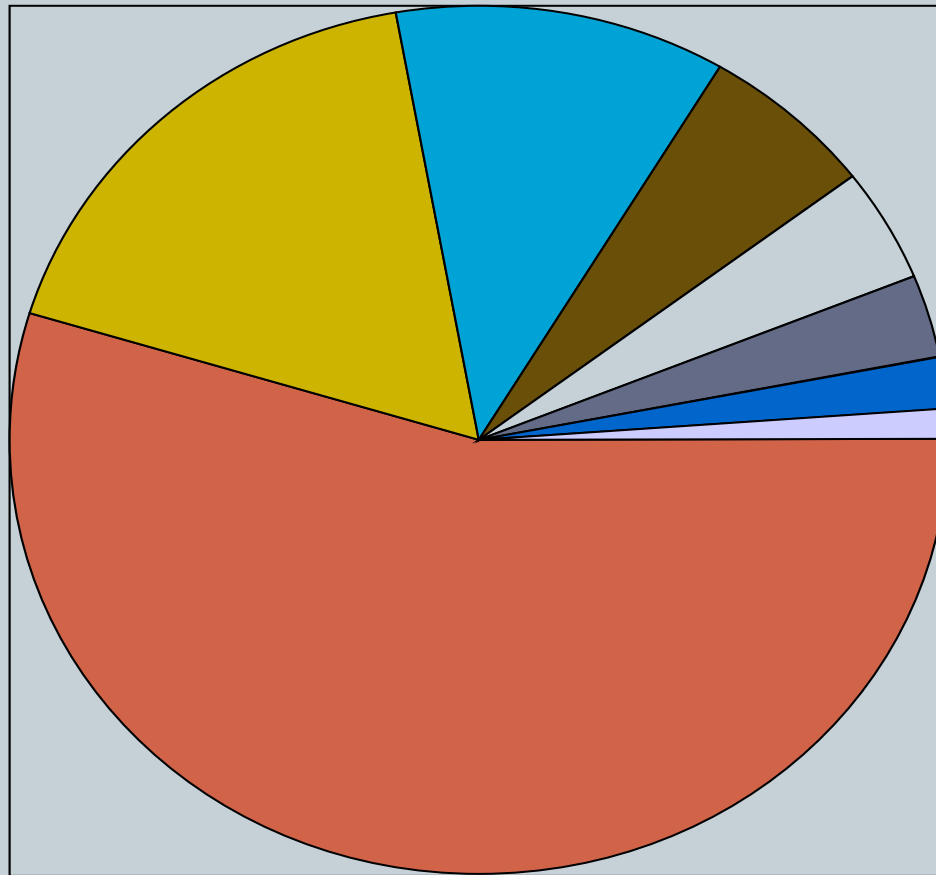


GMO Pros: Animals

- Better yields of meat, eggs, and milk
- Improved health and diagnostic methods
- Increased resistance, productivity, hardiness, and feed efficiency



2006 GM crop production



Anti GMO Organizations



- **Greenpeace:**
 - ! Campaigns for sustainable agriculture by rejecting genetically engineered organisms, protecting biodiversity and encouraging socially responsible farming.
- **Earth Liberation Front (EFL)**
 - ! To defend and protect the earth by use of direct action to stop the exploitation and destruction of the natural to stop the exploitation and destruction of the natural environment.”

Effects of GMOs?



Born August 20th on the Fettig Ranch in Moffit, ND

Future of GMOs



– Pessimists

- ! Science will become obsolete
- ! No trade of GMOs with European Union, Japan, & others

– Optimists:

! Vaccines

- ÷ Now attempting to grow vaccines in produce (HIV, Hepatitis B, Rotavirus, and Rabies)

! Shifting European Views

! Dual Market Growth