

Genetically Modified Crops (GMC's)

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Background and needs

- Genetically modified crops are plants that have been altered through DNA so that they have properties that would not naturally occur, examples being making crops last longer, giving crops a natural pesticide, and giving crops vitamins
- Some of the needs of genetically modified crops are to make more affordable, longer lasting crops that can benefit people
- A small list of companies that produce genetically modified seeds are Monsanto, Dupont, Land O' Lakes, and Syngenta



History

- In 1980 the first genetically modified patent was issued
- One of the first genetically modified crops produced was a tobacco plant in 1983, it was engineered to be resistant to antibiotics
- In 1990, genetically engineered cotton was tested successfully
- In 1994, a genetically engineered tomato, called Flavr Savr, was released into markets, it was engineered to have a longer life after picking

History

- In 1996 there were herbicide resistant weeds found in Australia
- A few years later in 2003, it was found that even some insects became immune to the herbicide produced by the genetically modified crops
- In 2011, it was found that some toxins produced by genetically modified crops were found in people in Quebec

Science Behind It

Genetically Modified Organism:

- Any organism whose genetic material has been altered using genetic engineering techniques.
- It involves mutation, insertion, or deletion of genes.
- Inserted genes usually come from different species.

GMOs



- “Any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology”



GMO's Debate Positive or Negative?



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There is a great debate on GMO's being good or bad for society. For some, the idea of GMO foods are a good one because the modifications allows crops to become resistant to droughts and infestations, which are increasing.



More people are able to get meals and some research shows that by the use of GMOs, it is producing a certain percentage of more food than it provides each person.

Others look at GMO's as a dangerous way of producing food. From allergic reactions to potential intestinal damage, many people wish to avoid GMO foods because of animal studies that showed changes in internal cell structure, abnormal tumor growth and unexpected deaths that have occurred.



Pros

- Better overall quality and taste (some may disagree)/ Improved food quality
- More resistance to disease (plants/animals)
- Nutritional benefits (so they say)
- Potentially produce higher crop yields, feeding more people
- Crops can be engineered to withstand weather fluctuations and extremes

Cons

- Environmental Damage
- No economic value - No yield increase
- Growth in allergic reactions to the general population
- Pesticides - Increase herbicide use
- Decreased antibiotic efficiency

ethics issue/means/goals

There are a number of ethical concerns over genetically modified (GM) foods and these have all affected public support of the products. The issues have also triggered controversy and regulations around GM foods and any company that produces these crops or products. Concerns range from the environment to risks to our food web or issues concerning disease, allergies and contamination.

- Allergies And Disease

***Disease is a major health worry with regards to GM foods.**

- Damage To The Environment

- Food Web And Risks.

***Risks to the food web are a very real ethical concern around GM technology. Any pesticide or herbicide from the crop could harm animals and other organisms in the environment.**

Genetically modified foods are foods produced from organisms that have had specific changes introduced into their DNA using the methods of genetic engineering. These techniques allow for the introduction of new traits as well as greater control over traits than previous methods such as selective breeding and mutation breeding.



GM foods are developed - and marketed - because there is some perceived advantage either to the producer or consumer of these foods. This is meant to translate into a product with a lower price, greater benefit (in terms of durability or nutritional value) or both. Initially GM seed developers wanted their products to be accepted by producers and have concentrated on innovations that bring direct benefit to farmers (and the food industry generally).



Before the FDA decided to allow GMOs into food without labeling, **FDA scientists** had repeatedly warned that GM foods can create unpredictable, hard-to-detect side effects, including allergies, toxins, new diseases, and nutritional problems. **They urged long-term safety studies, but were ignored.**

