Genetically Modified Food

What is a genetically modified food?
Genetically modified foods are foods that have been created with or derived from genetically modified organisms (GMOs). A GMO is an organism (micro-organism, plant, fish or mammal) whose genetic material (DNA) has been altered in a way that does not occur naturally. This technology is often referred to as biotechnology or genetic engineering. It allows selected individual genes to be transferred into or removed from an organism.

What are the benefits of genetically modified foods?
Genetically modified foods are developed and sold because there is a perceived advantage to the farmer, producer, or consumer. For example, the first genetically modified food was the Flavr Savr™ delayed ripening tomato. This benefitted the farmer, producer, and consumer. The farmer and producer had more time to sell a fresher product. The consumer received a fresher product, which had a longer shelf life. Moreover, genetic engineering helped protect the Hawaiian papaya crops from the devastating papaya ringspot virus—this was a benefit to the farmer who could have lost a lot of money had his crop died. For consumers, genetically modified crops can be enhanced to improve the nutritional value of foods, such as increasing levels of beta-carotene in rice to reduce vitamin A deficiencies.

What are the governmental regulations for genetically modified food? Are they safe?
The regulation of genetically modified foods varies based on the country. Some countries do not regulate these foods. In the US, the United States Department of Agriculture (USDA), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA) work to ensure that genetically engineered crops produced for commercial use are properly assessed to safeguard that they pose no significant risk to consumers or the environment. Products are regulated according to their intended use; some products being regulated by multiple agencies. For example: in food safety specifically, new traits in genetically engineered plants are inspected by both the EPA and FDA. The proteins produced by the altered genetic material are tested to determine whether they may be potentially toxic or cause an allergic reaction.

Some examples of the information that the FDA reviews include:
- The name of the food and the crop it is derived from;
- The use of the food;
- The source, identities, functions and stability of introduced genetic material;
- The purpose or intended effect of the genetic modification and its expected effect on composition or characteristics of the food;
- The identity and function of any new products encoded by the introduced genetic material;
- A comparison of the composition or characteristics of the genetically engineered food to the original food or other commonly consumed variety;
- Information on whether the genetically modified food altered the potential of the food to induce an allergic reaction; and,
- Other relevant information for the safety and nutritional assessment of the genetically modified food.

How can I tell if I am buying a genetically modified food?
FDA does not require that food labels indicate that a food is genetically modified. They believe that neither a scientific nor a legal basis exists to require such labeling. Therefore, you cannot tell by looking at the product unless the manufacturer has volunteered that information.
However, any significant differences in the food (such as composition, nutritional content, or requirements for storage, cooking, and preparation) will be disclosed on the label. Using our examples from earlier, although the product is genetically engineered, the label would not indicate that information. However, the label would show that there is an increased level of vitamin A compared to the other varieties. For the tomatoes or papayas, if the nutritional content, composition, and requirements for storage, cooking, and preparation are the same, then the label may not be different from the other products at all.

Controversies still exist about whether genetically modified foods are safe, whether they should be labeled, and whether genetically modified crops are needed to address the world's food needs.

Contact _________________, Texas A&M AgriLife Extension Service _____________ County agent at ______________________, for more information.

Resources:


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