

Three things to Know about GMOs

By Emily Tholson

Have you ever wondered what all this talk is about GMOs?

Some people say that food companies inject salmon genes into tomatoes to give them color. Doesn't this shocking information make you want to learn more about GMOs and what foods have them?

GMO stands for genetically modified organisms. They began being commercially sold as food in 1994. The controversy with GMO's is whether foods with genetic engineering are safe. Mariah Giovanni, food science professor, recognizes the controversy. "There is no direct evidence that GMO's are harmful, but they can potentially lead to health problems," said Giovanni.

The controversy on GMO's exist because there is no direct evidence of them causing health problems, but we are unaware of long term effects. There are three main areas of concern regarding GMO foods. These include gene mutation, pesticide/herbicide use, and the environment/health risks.

1. Gene Mutation

When an organism is exposed to radiation or chemicals, it creates a reaction. A new trait occurs that does not naturally in the organism.

"Another piece of DNA is injected into the gene of a crop," said Giovanni. This is done so that plants can become resistant to certain pests, diseases, environmental conditions, the production of a certain nutrients, or for use in a pharmaceutical agent.

The largest GMOs in the food industry occur in corn, soybean, canola, rice, and cottonseed. They are engineered for faster growth, resistance to pathogens, production of extra nutrients, or any other beneficial purpose. "There are flavor savor genes that enhance flavor, that are used in some GMO's," said Giovanni. These enhance the flavor of fruits and vegetables that lacked taste from initial genetic modification.

2. Pesticides/herbicides

GMOs decrease the availability of seeds for the next season. "Monsanto, the huge corporation that produce these genetically modified seeds, make a lot of money doing so," said Giovanni. Farmers must purchase new seeds each season and Monsanto is the main supplier.

"Organic, non-GMO, crops produce seeds that can be used for the next season," said Giovanni. Round up is an herbicide used on GMO's. "Monsanto makes roundup ready seeds that will not be destroyed from spraying them with these chemicals," said Giovanni.

These GMO seeds are altered to contain genes that make them resistant to herbicides. "Herbicides are used to kill weeds, and since the GMOs are not affected by them, high amounts can be used," said Giovanni.

Another problem is weeds are becoming resistant to these pesticides, therefore more have to be used. Donald Payne, supplement specialist and tai chi guru, has some insight on the issue of pesticide use and the effect on our health. He has been researching the issue since prop 37 emerged about labeling GMO foods. "GMOs are a major health concern because of the increasing need of herbicides to kill weeds," said Payne.

The weeds are requiring more herbicides to destroy them because they have mutated, becoming more resistant over time. "In 1994 there was around 7,000 tons of the pesticide round up used on crops in the US, in 2002 there was 80,000 tons," said Payne.

3. Environment/health risks

Since these seeds withstand certain chemicals, the question is what is the effect of them on our health? "These pesticides may not be sprayed directly on the crop portion that we ingest but they may run off into ground water when it rains, which we potentially drink," said Giovanni. Agriculture professor Jennifer Fox who has worked for a regulatory chemical company for 12 years. "GMOs are made to withstand round up, which is relatively benign because the FDA has safety factors that test the chemicals 100 fold," said Fox.

The regulatory system is in place as a safety net to test and verify that chemicals are safe for human ingestion. "I think that people worry about what they are unaware of, but I believe in our system, and the safety measures that are taken," said Fox. The FDA is responsible for food safety. They are responsible for testing and regulating food and chemicals to make sure it will not be harmful to human health.

