Professor says GMO Foods “Not All Bad but Not All Good”

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Genetic engineering means modifying the DNA of a crop such as corn, soy, or cotton, or moving genes between organisms that do not usually breed. It is the subject of a passionate debate. On one hand, anti-GMO advocates claim the process poses risks to human health and the environment, but some figures in the food industry say these fears are over-exaggerated

“The picture is complex and if you only point to a part of it, you can probably find a part that supports the argument you wish to make,” said Dr. Margeret Smith, a professor at Cornell University’s Department of Plant Breeding and Genetics. She recently led a talk about GMO foods and the common myths — among them, myths about the human health risks.

Humans do all kinds of dangerous things in everyday life, she said, such as driving a car. She said people do not expect there to be anything even remotely risky about eating foods like corn. That is why, she said, people are so worked up about GMOs and genetic engineering.

Smith began her talk with a question. She said, “So, why the controversy? When the first genetically engineered crops came on the market, which was actually in the mid-1990s, people like me – plant breeders – tended to say, ‘Oh… it’s just a logical extension of what plant breeders have been doing all along.’ Well, the problem with that was, people said, ‘Wait! Who as been doing what?’ You see genetic modification has been happening since even before the Agricultural Revolution. Genetic engineering is a new and different way to do that.”

The big problem, however, is scientists now go beyond the traditional method of cross breeding, and that is where genetic modification comes in. They move genes between plants that would not normally do that. Smith said, “The big question I get is, ‘Am I eating food derived from genetically modified crops?’ Well are you? Yes. The answer is yes. The estimate in the U.S. is that 60-70 percent of our supermarket foods contain ingredients that came from a genetically engineered variety,” she said, referring to highly processed foods made with corn, soy, and even cottonseed.

She said, “Fresh produce is very, very limited. About the only thing we’d find perhaps in a grocery store, or on a farm stand around here, would be insect-resistant sweet corn. In this day an age the chance of keeping produce fresh from a place 4000 miles away from your grocery store is extremely difficult. Genetically modifying food can prevent bananas coming from Costa Rico from rotting before they get to your grocery store.

Smith said three agencies are responsible for approving genetically engineered crops: the United States Department of Agriculture, the Environmental Protection Agency, and the Food and Drug Administration. Smith described how some of the safety testing works. She said, “What they actually do, is take a genetically modified protein, and test it in a petri dish with human digestive enzymes. The then measure how long it takes to break down. And if it takes any longer than standard proteins would take, that raises a red flag. Your digestive system is meant to break things down in a certain way an time. You then absorb them as small molecules, and your body builds the things you need out of it.” Smith added in general, genetically engineered crops are nutritionally equivalent to “organic” varieties. Though the fear that GMO foods are not safe? That's an extremely valid concern, she said.

She added other aspects raise concerns: The financial power of companies like Monsanto, all the herbicides that are used on plants and the impact on the environment. She said a lot of those worries, however, are not based not science. “So this is not a technology we need to consider both the pros and the cons about. We need to really think about each example of where we use this technology and weigh the risks and benefits,” Smith said.

Reflection Questions: *Please answer the questions via the Digital Learning Attendance Form. Be sure to write in complete and detailed sentences.*

- According the article what are some (2) positives about using GMO’s?
- What are some (2) potentially negative consequences?
- Pick one of the political cartoons and tell me what you think the message is in that cartoon?
- Tell me about two (2) rules your family has about food. (i.e. My kids can drink soda but not energy drinks)