

Genetically modified organism assignment



**ASSIGN
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Gene Technology Assignment 2 Genetically modified crops are plants used in agriculture in which the DNA has been modified using genetic engineering techniques. In other words, genetically modified organisms have specific changes in their genetic information, by the process of introducing foreign genes into the cells. Genetically Modified Crops have had a gene extracted from a living thing placed into a different food by a scientist. This technology can be used to produce new varieties of plants more quickly than conventional breeding methods. Genetically Modified Crops are created for many different reasons.

The two main types of GM crops that are in commercial use around the world are either crops that have been developed to be resistant to certain crop pests, or crops that have been developed to be resistant to a particular herbicide. The sole purpose is to create a food able to survive being sprayed with harmful chemicals like pesticides and herbicides. Other purposes are to have food last longer, to kill pests, to produce more crops and to experiment with taste and quality or nutritional value. A few more reasons are to produce more of a particular crop at a lower cost and prevent further damage to the environment.

These crops can produce a superior species of crops are because they tend to be stronger, more resistant to herbicides, growing quicker, and tend to be cheaper to produce. Another name for these types of crops are transgenic crops. Transgenic crops are plants that have been genetically modified for improved flavor, pest resistance, or some other useful property and are being used increasingly. (Omicron “ Transgenic Plants”). In particular the

potato is known as the world's fourth-largest food crop. The potato is a cool weather crop that has become an integral part of the world's cuisine.

Potatoes are originally from South America and have at least 200 different varieties. They were brought to Europe by the Spanish in the 16th century where they grew in popularity. Only one in four potatoes grown is actually eaten. Potatoes are used in the feeding of livestock, in the production of alcohol and starch. One damaging properties of the potato crop is blight. Blight is defined as a plant disease, caused by bacteria, fungi, or viruses, in which symptoms range from brownish blotches on the foliage to withering of the entire plant without rotting. This causes farmers to spray chemicals on crops up to 15 times in a growing season.

As farmers began to look into ways to prevent against to disease, scientist initiated a study to create a blight resistant potato. Specific traits such as high yield or disease resistance were identified as traits to be altered. The process of breeding a hybrid line of potatoes was created that meet the desired character traits. There was success but it also limitations. One limitation occurred in the length of time to breed the potatoes. The process took up to 15 years. The new generation of potatoes varied from 3-5 years. Recent studies have shown wild potato plants grown in Central America, exhibit throng resistance to late blight disease.

There was also a Dutch research program using GM techniques to insert wild potato genes into a European potato that has proven highly susceptible to late blight disease. Although genetic engineering technology in agriculture can help increase crops production, reduce environment pollution, increase

the amount of nutrients in food, create pharmaceutical products, and slow down ripening process of plants, genetically modified food should be strictly controlled. Because GEM foods have spread rapidly to the whole world, we should know why they can be harmful to our health and how we can prevent it.

These crops have the ability to create an herbicide-resistant super-weed, causing genetic pollution; induce allergic responses, pose risks to human health and other species. Some have elevated concerns over their benefits because they are resistant to disease and are used to aid in human suffering from famine and add nutritional value to crops. Some agree that there are technology's benefits while others question the environmental and food safety issues. These crops occupy more than 167 million acres worldwide. GEM crops have led to serious destruction of the environment and have contaminated organic crops.

Unfortunately genetically engineered crops cannot be contained. Though originally declared safe, they caused widespread death and disease and everyone eats therefore everyone is affected. There has been an increase in several diseases across North America due to the changes in our diet. The most radical change occurred when genetically modified (GM) crops were introduced. Their influence on health has been largely ignored, but recent studies show serious cause for concern. Genetically modified crops have been linked to thousands of toxic or allergic-type reactions,

There has been reported damage to virtually every organ and system studied in lab animals. Other reports according to Health Canada state no

GEM foods are allowed to be sold unless they have been deemed safe for consumption and nutritious. There have been reports of confusion concerning the “ product and the process” in experiments conducted by Dr. ARPA Pizzas. His experiments were conducted using rats. He gave them raw potatoes which had a toxin called solanine, once cooked the toxin was no longer present. According to these reports I have decided I am no longer in support of these new genetically modified crops.

There is a vast amount of information on the effects of these crops and data to support both arguments. Though they have yielded more crops, they seem to cause more harm. They allow farmer to use more pesticides on crops damaging the soil and the environment. I don't feel a few more crops this season is worth the risk. They also run the risk of creating a new type of weed that could have devastating effects. We have to be cautious of the toxins we put in our bodies. Because there is no regulation for vendors to specify which crops have been altered consumers cannot make informed choices.