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**Genetically Modified Foods**

Biotechnology has emerged as a new area of science since it has developed a new commercial approach towards influencing major aspects of Human life (Prakash et al.). One of the most prominent biotechnological application is the introduction of particular gene fragments via various techniques producing the desired variations into the plant. Such plants with the desired characteristics are identified as Genetically Modified Crops. These genetically Modified Foods are continuously emerging all over the world. It is estimated that 66% of people of the United States alone consume processed foods that incorporate genetically modified ingredients (Lancet). Unfortunately, most of these people don't even know that they have been consuming modified foods since the year 1990 (“Altered Food, GMOs, Genetically Modified Food”). There has been a controversy on the issue of safety regarding genetically modified foods since its beginning. Some people consider it to give rise a whole new era of scientific development in the field of agriculture. According to my research on the issue, I am against the idea of a genetically modified organism. This paper will support my claim in light of credible evidence.

**Discussion**

Although several studies on the safety of genetically modified foods indicate that they have opened a whole new area of scientific research that contributes towards the development of better crops still it is evident from most literature that these have continuously affected the health of humans (Prakash et al.).

A most widely used technique for the production of a genetically modified organism is genetic recombination. Since genetic recombination disrupts the natural order of synthesis, producing a variation, it is quite clear that it can result in the crop that may not be desirable. This is often observed as the production of secondary metabolites which are quite harmful to human health. It is evident from the study that states that the naturally occurring mechanisms of protein and carbohydrate metabolism are altered which results in the production of unanticipated contaminants( National Academies of Sciences et al.). The food that is supplied to the citizens may contain unexpected toxins considering many of these products have been available in the supermarkets without proper risk assessment (Prakash et al.). One of the genetically induced secondary metabolites is Steroidal alkaloid which is mostly found in the genetically engineered potato. The chemical is thought to cause severe gastrointestinal disorders such as ulcer and diarrhoea. GE rhubarb contains oxalic acid that can cause breathing problems. GE Alfalfa sprouts have reported causing the neurological disorders. Indirect consequences can be experienced in the form of cancer by consuming GE celery which contains phototoxic metabolites activated in the presence of sunlight. According to the study, GE potatoes caused the serious gastrointestinal deviations in the body of rats who were the test subjects for the experiments regarding the genetically modified foods (Lancet).

The counter-arguments for the acceptability of genetically modified organisms mainly suggests that it results in the production of crops with the desirable characteristics, such as resistance to herbicides, insects and virus (Takeda and Matsuoka). Apart from that, it claims that genetically modified food can contribute to feeding the future generation. In this way, Genetic recombinant technology can overcome the food scarcity by the production of newly generated crops (Barrows et al.). It is unfortunate how the organization in favour of genetically modified foods are justifying its acceptability by saving the future generation while the present generation is at risk of developing serious health effects that can be sometimes life-threatening. It is quite evident that governments are solely after making profits by giving the population full access to these foods without the risk assessment. Food and Drug Administration has refused to reconsider their notion regarding the safety of genetically modified foods which shows their extreme deviations from the health and safety code (Lancet).

**Conclusion**

Although genetically modified food is considered as a solution for the crops pest sensitivity issue, it should not be deemed acceptable as it is detrimental to the health of people who consume such foods. They give rise to several secondary metabolites that have adverse effects on the metabolism of the human body since foods are readily available in the markets around the world. FDA should reconsider their decision of promoting the production and availability of these foods to ensure health and safety.

**Works Cited**

“Altered Food, GMOs, Genetically Modified Food.” *National Geographic*, 9 Oct. 2009, https://www.nationalgeographic.com/environment/global-warming/food-how-altered/.

Barrows, Geoffrey, et al. “Agricultural Biotechnology: The Promise and Prospects of Genetically Modified Crops.” *Journal of Economic Perspectives*, vol. 28, no. 1, Feb. 2014, pp. 99–120. *www.aeaweb.org*, doi:10.1257/jep.28.1.99.

Lancet, The. “Health Risks of Genetically Modified Foods.” *The Lancet*, vol. 353, no. 9167, May 1999, p. 1811. *www.thelancet.com*, doi:10.1016/S0140-6736(99)00093-8.

National Academies of Sciences, Engineering, et al. *Human Health Effects of Genetically Engineered Crops*. National Academies Press (US), 2016. *www.ncbi.nlm.nih.gov*, https://www.ncbi.nlm.nih.gov/books/NBK424534/.

Prakash, Dhan, et al. “Risks and Precautions of Genetically Modified Organisms.” *ISRN Ecology*, vol. 2011, 2011, pp. 1–13. *DOI.org (Crossref)*, doi:10.5402/2011/369573.

Takeda, Shin, and Makoto Matsuoka. “Genetic Approaches to Crop Improvement: Responding to Environmental and Population Changes.” *Nature Reviews Genetics*, vol. 9, no. 6, June 2008, pp. 444–57. *DOI.org (Crossref)*, doi:10.1038/nrg2342.