Risks and benefits of gmo foods

The acronym GMO stands for genetically modified foods. These foods are also described as genetically engineered foods or bioengineered foods. The way GMO foods are produced is from the kinds of organisms that have had changes introduced into their DNA that utilize the different methods of genetic engineering. Many different concepts make the topic of GMO controversial in the world. Most people who worry about them are primarily concerned with the possible short and life-long health problems that may come as a result of GMO.

There is such a need for GMO foods because the population continues to expand. According to the " Food Science and Human Wellness" book from ScienceDirect, as each decade comes about, the world's population will continue to increase. Also, " In 2016, the U. N. Food and Agricultural Organization (FAO) reported that 795 million people in the world were undernourished, among which 780 million people in developing regions. Therefore the eradication of hunger should be a priority of policy-making" (Zhang, Wohlhueter, and Zhang 116-123). Since the earth is only increasing in its number of citizens, the production of GMO foods is needed more and more.

The World Health Organization defines GMO as, " Organisms (i. e. plants, animals or microorganisms) in which the genetic material (DNA) has been altered in a way that does not occur naturally by mating and/or natural recombination" (Zhang, Wohlhueter, and Zhang 116-123). GMO foods come from plants and animals who are genetically modified. The Food and Agricultural Organization of the United Nations and the European Commission define GMO foods as, " a product ' not occur naturally by mating

and/or natural recombination" (Zhang, Wohlhueter, and Zhang 116-123). Different examples of genetically modified foods include corn, tomatoes, potatoes, apples, and soybeans. All of them are processed in the United States. Other different foods that are not currently being processed in the United States are beets and plums. For the most part, these foods are good for you. They are a part of our everyday life when you look at the different examples of them. The saying " An apple a day keeps the doctor away" has been around as long as time. Apples are one of the many types of GMO foods that are good for you.

There are a ton of controversies that surround the topic of GMO foods. Reasons why they can be harmful to humans and animals, have to do with the health risks that come with them. The three significant health risks that people would potentially associate with GMO foods are genetic hazards, toxicity, and allergenicity. These three risks come from the possible sources of, " the inserted gene and their expressed proteins per se, secondary or pleiotropic effects of the products of gene expression, and the possible disruption of natural genes in the manipulated organism" (Zhang, Wohlhueter, and Zhang 116-123). No matter what, questions will always arise when it comes to different health risks containing these foods.

For the most part, many environmental advantages come from GMOs. The International Service for the Acquisition of Agri-biotech Applications stated, " One of the significant environmental benefits of GM crops is the dramatic reduction in pesticide use, with the size of the reduction varying between crops and introduced trait" (" Pocket K NO. 4: GM Crops and the Environment). The uses of GMOs have helped farmers in terms of reducing

pesticides. Pesticide spraying has gone down tremendously and has helped the environment in reducing the number of gas miles used, " The technology has also significantly reduced the release of greenhouse gas emissions from agriculture equivalent to removing 16. 75 million cars from the roads" (" Pocket NO. 4: GM Crops and the Environment"). Even though GMOs are useful in terms of reducing pesticides, they still bring in a bunch of worries towards the environment. Out-crossing is one of the major concerns, " A major environmental concern associated with GM crops is their potential to create new weeds through out-crossing with wild relatives, or simply by persisting in the wild themselves" (" Pocket NO. 4: GM Crops and the Environment"). The potential problem of creating weeded species is what concern most people when it comes to GMOs. An intervention used to help with GMO is assisted adaptation, " Assisted adaptation may be one of the most viable options remaining to enable the survival of certain species under a changing climate. Scientists may be able to deliberately introduce genes into wild populations that would assist species in their adaptation to changing conditions" (Zilberman, Holland, and Trilnick). It all depends on how the GMOs are produced to determine if they are good for the environment or not.

Green Chemistry uses innovations based on DNA to find unauthorized GMO foods. The qPCR is a method used when it comes to green chemistry for GMOs. The acronym stands for Quantitative Polymerase Chain Reaction, which is also referred to as real-time chain reactions. Digital PCR has been proven to be better when converting GMO factors, " At a level of 1%, measurement uncertainty was significantly lower than when using real time

PCR in the majority of cases. The accuracy for maize samples had to be corrected by a conversion factor to get the true value of the GMO content by weight to weight" (Köppel, Bucher, Bär, Velsen, Ganeshan). When testing which was the better way to recognize unauthorized GMO's containing green technology, the digital PCR worked better.

In my opinion, even though there can be certain risks associated with GMOs, I still believe they are needed. I feel that the benefits overvalue the risks, and risks are no guarantee on what can go wrong. The different foods like apples and corn are two of the healthier options in our world today. If GMOs were banned, then we wouldn't have some of the same healthy options we have now. GMO foods are too crucial for farmers and other crop growers, who for the most part, do everything they can to prevent the foods from being produced incorrectly. As long as they are produced the right way, I don't see any issues when it comes to GMO foods.

Works Cited

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