

Example of genetically modified food essay

[Environment](#), [Plants](#)



Establishment

The problem of genetically modified organisms continues to preoccupy scientists and ordinary people. This is due to the fact that their effect on the human body is still little known. According to some scientific points of view, such products are able to save the world's population from an impending famine, which sooner or later will come. Although, the impact of GMOs on the human body can be much more damaging than hunger. The last few years, the subject of genetically modified foods became very popular in debates and researches. Many people have been interested if there are GMOs in the products they consume. There are many pros and cons. Some people consider GMO food good, others see it dangerous. Most scientists support the idea that genetically modified products have negative effect on people's health.

According to the definition, given in the article ' Pros & Cons of GMO Foods', " GMO foods are genetically modified organisms that have had new genes from other organisms added to their existing genes" (Duvauchelle 2014).

The Encyclopedia Britannica writes that " GMOs are produced using scientific methods that include recombinant DNA technology and reproductive cloning" (Diaz & Fridovich-Keil 2014). In my opinion, this fact is alarming, because all genetic modifications are not natural. They cross natural biological barriers and could have irreversible effects. Transferring genes from one organism to another, could lead to serious changes on the planet. The effects of genetically modified products on human health and the environment are still unpredictable. Serious consequences could be investigated in the future. Worldwide there are about 50 species of plants

produced due to genetic engineering achievements, including soybeans, rice, eggplant, apples, rye, wheat, cabbage, canola, strawberry, tobacco, cucumbers, corn and cotton. Any plant or animal has thousands of distinct characteristics. For any particular characteristic there is a certain gene, which is a small segment of the DNA molecule. It detects the presence of any sign in the animal or plant. Removing the gene, which is responsible for the certain characteristic, will lead to the disappearance of it. If scientists add a new gene to the plant, it receives a new characteristic. Genetically modified plant is a genetically modified organism. Work on the development of genetically modified plants is carried out in the laboratory. To do this, first, scientists select a gene of any plant or animal needed for transplantation, and then roll it in the cell of plants to improve their properties. All genetically manipulated plants tend to undergo research on nutritional and biological security. Also, scientists have proven that the use of GMOs for cultivation of vegetables and fruit resulted in the creation of genetically altered weeds that crowd out natural plants. There is a chance of extinction of many species of plants. But the main problem which disturbs public organizations is the inability to isolate GM plants. Cross-pollination, so-called horizontal proliferation contributes to the spread of the modified varieties into the planted fields (Carter 2011, 185). Today, according to experts, in the world every batch of grain, contain at least a minimum percentage of GM organisms. This means that now all mankind will not be able to desist from eating transgenic products. One group of scientists proves that using genetically modified organisms can help mankind to grow artificial human internal organs. Undoubtedly, this will be a great achievement of people in

the field of organ transplantation. However, this is still just a suggestion, without evidence. Now genetic engineering is technically flawed, because it was not in a position to manage the process of embedding the new gene. Therefore, it is not possible to predict the location of embedding and the effects of the added gene. Even if the location of the gene will be possible to install after the implantation in the genome, the DNA information is very incomplete in order to predict the results. New and dangerous viruses could appear. They could be more aggressive. For example, viruses of plants can become harmful to beneficial insects, animals, and people.

The use of products that contain GMOs leads to metabolic disorders in the human body, allergic reactions, and loss of immunity. A number of complaints for the reason of allergic reactions to GMO food were registered at the practice of its consumption. It contains indigenous for animals and plants proteins that can cause such allergic reactions. The issue is not studied well, but scientists continue their research. Besides, some products can contain antibiotics used in the formation of the product to make it resistant to diseases. It has a strong influence on the human immune system. Some experts argue that genetically modified crops and plants are more toxic than natural. Each insert of foreign genes into an organism is a mutation, which can cause undesirable effects in the genome (Smith, 2014). Alien DNA arrives at the human body with food. It is absorbed from the bowel into the blood stream and from there can penetrate any cell of the body and mutate its DNA. In addition to research, the transgenes have a strong resistance to antibiotics. Each day on the planet two thousand people dies from hunger. Scientists believed that the transgenic technology will help

eliminate hunger throughout the world as they will help to increase the harvest. Unfortunately, those hopes had been dashed. In 2008, the UN officially stated that GMPs are not able to end hunger. Because hunger has primarily social and political causes and can be overcome only through the concerted actions on the political and economic levels.

There is also a moral dimension of the issue. Those religious people believe that everything on Earth was created by God, “it is not ours to have” (Brunk 2009, 121). The man took on too much, and the payment for it may be too harsh, because most countries had no laws to regulate the production and consumption of GMO food. Consumers do not know what they buy, and do not know how this affects their health. For example, a gene from the snowdrop, embedded in the potatoes for resistance to the Colorado beetle, is the high content of plant lectins. It influences the immune system, intestines, liver and brain, causes kidney disease. Environmentalists fear that there may be an environmental catastrophe if genetically modified forms pervaded into the wild. For example, cross-pollination weeds will get gene resistance to pesticides and pests. Their breeding is uncontrolled. The current requirements for verification on safety is extremely insufficient. They are clearly designed to simplify the approval procedure. They allow the use of very sensitive test methods on safety. Therefore, there is a significant risk that unsafe food can pass unnoticed.

Nevertheless, all researches that show the negative effects of the consumption of genetically modified products, there are people that try to prove scientifically their benefits. Genetically modified organisms are able to not only grow as their predecessors, but also to survive there, where the old

varieties were dying due to various weather conditions. Many of them are not afraid of the unexpected frost, flood or drought. Some plants have such developed root system, which allows them to retain the maximum amount of moisture. But those varieties that were sensitive to low temperatures, are more resistant to it, and this, in its turn, has affected the plants used to come in spring in the period of active growth. Scientists also created new fast-growing varieties of grain crops. There are fruits and vegetables that can resist viruses, bacteria, and fungi. While, some types of trees have been created specifically for the destruction of contaminants. Resistance to various pests can lead to less use of pesticides than is customary in traditional technologies. Scientists are working on breeding varieties of tomatoes and potatoes that will contain vaccines and medicines for the third world countries. Brown University made a conclusion that “ the risk from GM foods is no greater than the risks from other foods” (“ Foods From Genetically Modified Crops”, 17). According to the article ‘ Are Biotech Foods Safe to Eat?’, that made a research on the issue, “ the U. S. government's position is that genetically engineered crops are safe, resist disease better, and can provide much-needed food in starving nations”(Are Biotech Foods Safe to Eat?). Many people consider that GMO food is better, because it is tastier due to the possibility to modify its flavor (Smith, 2014). Some scientists argue that it has more nutrition minerals and vitamins, which can be artificially added to the products. There are suggestions that GMOs can contribute to the environment. Oklahoma State University provided the results of a research that reports “ that the increase of GMO crops and animals often requires less chemicals, time and tools, and may help to

reduce environmental pollution, greenhouse gas emissions and soil erosion” (Duvauchelle, 2014). Knowledge about the effect of modified organisms on the environment are unstudied well. Scientists have not proved for the moment that there is a negative impact on the environment.

Environmentalists expressed assumptions about various potential environmental complications. For example, there are many opportunities for the uncontrolled proliferation of potentially dangerous genes, used in genetic engineering, including the transfer of genes from bacteria and viruses. Complications caused by the environment, probably cannot be repaired because the genes cannot be released to take back.

Many scientists say about the possible danger associated with the use of genetically modified products. Genetic engineering is different from the new varieties and breeds. Artificial addition of alien genes strongly violates precisely regulated genetic control of normal cells. The manipulation of genes differs fundamentally from the combination of maternal and paternal chromosomes that occurs in a natural crossing. Impact on the genetics of the plants is the same impact on nature, but deeper than the impact on the environment. The use of such products in food may not carry genetic improvement of the consumer of the product, because the question of genetically modified products needs more studies and scientific researches. GMO plants can lead to the following diseases: allergies, cancer, diabetes, metabolic disorders. Besides, genetic engineering does not help to solve the problem of world hunger. The assertion that genetic engineering could make a substantial contribution to the solution of the problem of hunger in the world, is a groundless myth. This discussion of different sides gives

possibility to evaluate the issue. For the moment, I would prefer to avoid consumption of GMO products because of all negative effects that were confirmed in researches.

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