Medical Benefits Of GMO And Reasons For Undermining GMO

Abstract

There is a divisive debate on whether the use of technologically generated food is okay or not. Generating food on the basis of the technology is being viewed as aimed at increasing the cancer attack or a replacement of how the plants and animal were meant to be. The public has differed on the acceptance of the food. The food genes are altered to allow the food either last long, mature within a short period, or either to increase productivity.

Biotechnology has enabled scientist to make food considered to be almost synthetic. This has raised the ethical question of the real intention and the effects of the food not only to the current generation us also to the future generation. Is the knowledge that we possess haunting and killing us slowly? Or have we found a permanent solution to food security? The paper seeks to answer these questions. The article simplifies the strengths associated with the genetically modified organisms (GMO) and also checks why it’s strongly opposed by others.

The technology is being used in the manufacture of other genetically modified organisms like drugs and xenotransplantation. They all face a risk due to perception and attitude towards them. Some people feel they are undermining the supremacy of God and are directed to be a slow killer of the poor in society. The paper will look at the advantages and evidence available to support the applicability of the GMO and also will bring to the knowledge that supports their abolishment. The article will explain the ethical matter rotating around GMO.

Introduction

Genetically modified (GM) food also known as genetically engineered food are biotechnologically altered. The alteration is done at the DNA micro level. The name genetic modification suits better for clarification. This results in new traits in the plants or the animal. The high level of technology inventions has allowed the use of genetic engineering techniques to overcome and control the genes processed by either a plant or an animal (January 2016). In this paper, we will confine ourselves mostly on the plants.

The genetically modified foods hit the world market on early 1990s.this was as a result of the introduction of high tech equipment’s that enabled quick and conclusive research. The first application was in hastening the ripening of tomatoes. Many view the products as laboratory manufactured foods hence commonly referred to as synthetic food. There has been an increased safety issue on GMO.

Any living organism which its genome has been altered by use of technology qualifies to be referred as GMO. It does not necessarily refer food products or but also to any other product like xenotransplantation. To genetically modify an organism the following procedure is followed identify a trait of interest, isolate the genetic trait of interest, insert the desired genetic trait into a new genome, and finally growing the GMO (Mahgoub, & Nollet, 2019). The new genome are

replicated on the new hybrid product. This is only possible under high technology equipment.

The new product formed is different from both the mother plant and the gene donor plant. For the plant to grow, they need controlled climate and are mostly grown under biology chambers which are chemically influenced to maintain optimum basic requirements for the survival. The end-result is chemically and genetically altered plants. The plants are then used as medicines, and to some points, they are used as food. This is what is making the public to differ on how safe the products are and their ultimate effects.

A variety of product has been modified, fruits and vegetables have been extensively modified. Papaya has been genetically altered to enhance its resistance ability to the ringspot virus. The new leaf potato is as a result of modification by a bacteria known as Bacillus thuringiensis the potato now is tolerant to Colorado potato beetle (Fairfield-Sonn, 2016). The safety of GMO raised the eyebrow when it started to be applied on maize wheat and soy.

The corn is modified to tolerate herbicides and be able to extract proteins from Bacillus thuringiensis that is known to kill some insect. The technology has allowed the products to be widespread in the world. The highest percentage of corn being grown in the United States is like a genetically modified. The corn contains glyphosate-tolerant trait. The corn is later released to people and is used for consumption.

Chemical compounds behave and react differently when altered. Once the chemical composition of an element is altered it affects how the whole element interacts with the other elements. The human body is made up of chemical elements. Similarly, plants are made up of chemical compounds. When a person eats the chemical compound in the plants are transferred to the person’s body. The originality of the chemical is what makes the food to bind and be compatible with the bodies. Therefore, there is a possibility that once the GMO is feed into a person’s system through feeding, it might have a negative impact due to non-compatibility issues.

Food passes the chemical element they possess to the body. What happens with chemicals when subjected to different condition is that they undergo metamorphosis. This change from the known composition to the unknown is what makes the majority of the people to fear and question the effects of the products. It's unethical to give uncertified food products to a human being and on other-other hand is immoral to allow a person to die with hunger when there is a known way that can be used to feed the person.

Thesis statement

Technology has allowed biotechnologist to develop GMO food products. The safety of the food is not assured, and also there are no known negative effects of the products. Therefore the decision of using or not should be based on the situational merits and demerits of the GMO at that moment.

Evidence and support.

Food security

GMO is very vital when it comes to food security programs. The quality of the food grown when they are genetically modified is high. In comparison with the traditional foods, the shelf life of the modified products is relatively high (Robinson, & Leonhardt, 2018). In case this is no realized there is a possibility of adding the trait in the next modification. This makes it possible for the food to be transported for longer distance and also allows storage for later date use.

The farmers benefit from their ease of growth. Majority of the plants are modified in a manner that they can tolerate certain conditions like prolonged drought and pests. They have an immune trait that allows them to be resistant's to some known conditions. This makes the farmer rest assured that he/she would harvest regardless of the conditions. Many areas that could not have grown certain type of crop due to climatic conditions can now be able to row it through controllable climatic conditions enhanced by biotechnology.

The yield per space is now higher in comparison with nontechnology based farming. In the next few years with the advances in technology and more so GMO, it will be possible to feed everyone living in the world without much struggle and also without everybody carrying out the farming by themselves. The increase in the population requires an increased way of feeding them. GMO boost crop production to a higher capacity. This increased production capacity allows the country to feed all its population and drought and hunger away. This is the way to go for third world countries.

Medical benefits of GMO.

Genetically modified plants are used to develop traits and other chemical elements necessary to cure certain diseases. Once a plant is identified and proven to contain some medicinal property; however the content, it can be modified to increase the content. The modification is also done to try and develop the necessary traits. By modifying the plant is able to concentrate and develop a different chemical structure which can be synthesized in the lab.

Through a process known as pharming, specific proteins and vaccines are devolved. The technology allows scientists to isolate the profits and later use them for medicinal values. Majority of the pharmaceutical products that are not synthetically processed in the laboratories are as a result of genetic modification of plants. The process offers an avenue for providing inexpensive health services. Many of drugs originate from plants and animals. Once the elements have been extracted from the plant are then manufactured in the lab as a copy paste. In case the chemical compound cannot be further modified in the lab, it's re-instated back to the plant for modification.

Xenotransplantation allows the animal organs to be modified and then used to treat a human. This is more reasonable as no living human can donate organs to others unless the donation does not lead to health risks (Cooper et al., 2015). Animals are less valuable in comparison to a human being. Therefore they can be used to for testing and also organs can be extracted from them and used to treat a human. Although it's not fully developed and many people are willing to try out. This can only be made possible if the organs are modified.

Reasons for undermining GMO

Allergies

Despite GMO having several supportive evidence on to why it should be upheld it has some several reasons that withdraw its support. GMO foods do not apply to all as they cause allergic conditions to some. Somebody can be allergic to a particular plant in its modified state while on the other hand he/she is not allergic to the plant in its natural way although there is no direct scientific position if GM food causes the condition more than the other natural food.

Resistance to drugs

GM foods are modified in a way that they are resistant to some herbicides and diseases. When consumed the resistance trait is transferred into the user's body. The bacteria's in the body take advantage of the foreign bacteria introduced to the body by GM. The modification is made possible by the introduction of the antibiotic-resistant genes (Huang, 2017). This also makes the body bacteria to be resistant to some drugs more so antibiotic related drugs. There is no scientific proof of this. However, it's expected that once the resistant trait is introduced into the plant is also transmitted into the user's body.

Diseases more so cancer

Cancer in simplicity is the abnormal growth of cells. When a DNA of a cell has altered the activity of the cell are also altered. The way the cell relates to each is unique and once distorted the cell will try to react in order to respond to the new environment. It has been observed that plants that tolerate pesticides have a carcinogen effect on rats and also to human. Carcinogens are known to be predisposing factors of cancer. Altering the genes are changing the functionality of the cell. Then DNA in the plan may distort the normal body activities resulting in abnormal cell reactions.

Counterclaim

Considering the evidence support available concerning the GMO technology, it's clear that that the technology is half-beneficial to the people. Though it's not possible to tell if it will able to sustain for years to come. GM foods are easy to farm because they are resistant to farm challenges. However one cannot discriminate the fact that they require a customized climatic condition for maximum production. Nature has a way of purifying and sustaining itself. It is not possible to purify a customized environment. Therefore the result is environmental pollution.

It's very recommendable and within the many acknowledgments that farming should be aimed at maximum and in the simplest way possible. This is within the codes of ethics of the majority. Consequently, others argue that it's unethical and unacceptable to compromise the future because of the day's activity. The GM plants-controlled climate release greenhouse gases which compromises the future environment and threaten future farming and generation.

GM enhances productivity. Increased productivity is the only sure way to fight hunger. More food will lead to a secure food nation. This is the aim of every government in existence. It's moral upright to feed a hungry person (Trivedi et al., 2016). But it's immoral to feed the hungry person with poisonous or unhealthy food. One cannot ignore that the long-term effects of GM are not known. Once one person has grown GM food enough to feed a hundred people and it happens to have the long-term effect it will lead more damage than better which is morally unacceptable.

Genetically modified drugs, vaccine, and proteins have helped in the treatment of disease. The proteins induce the traits in the human body. Justice for any sick person is treated and getting well by all means. It's appraisable to identify drugs that will be able to treat any disease. I will not be justifiable to treat a less risky disease by compromising the life of the patient with a more risky disease. Cancer is a deadly disease regardless of risking infecting a patient with such condition is not ethical. There are other ethical means that drugs can be synthesized without risking the lives of others.

Taking the case of Xenotransplantation, it's very hard to explain a mixture of human organs and animal organs. Depending on the person it will be like dehumanizing and equating the person to the animal. People and animal react differently to situations, and even genetically developed behaviors are different. No one will accept to live with a person with the characteristics of an animal. A person should be equated to a fellow human being rather than animals.

There are other respectable means of sharing human organs. Like using organs of a deceased person. This will preserve the dignity and human trait. Animals don't respond to drugs like people; hence this can lead to other diseases (Cowan, & Tector, 2017). Instead of modifying animal tissues to use in human it's more ethical to clone a genetically modify the other human being genes to fit in the other person's genes. This is an ethical because it will act as an avenue to transmit animal diseases into human lineage.

Allergies are said to be caused by GM foods. This condition is associated with personal biological being rather than food. It will be immoral and unacceptable to let people suffer from hunger in fear of developing an allergy. The condition is known to exist and is treatable. Many other foods types which are not genetically modified are known to cause allergy. One cannot comprehensively link GM with allergic conditions. A person can be allergic to a specific type of food while others are not allergic to it. Allergy to a small number of people cannot be used as enough reason to deny other people enough food.

Seeds are treated with antibiotic-resistant genes to enable them to become genetically modified. It's argued that this result in the user becoming resistant to the antibiotics too. It will be inapplicable to deny a given number of people who are not under medication food in reasoning that in future that they will be under medication and the drugs will act resistance. It's even immoral to think that a hungry person will be sick in the near future instead of offering them justice, and that's food. One cannot ignore the effect of resistant antibiotics however hunger mitigation avenues are limited, but drug research and modification is being carried out daily.

The issue of cancer is what makes many people believe that GMO is more of a curse than food security. Without ignoring that it may result in the development of the diseases, it will be very naïve for everyone to conclude that indeed its causes without a data to back up the allegation. So far there has no scientific research that has linked GM with cancer (Huang, 2017). It will be unethical for a person to develop food to cause or spread cancer to people. It is also unethical to propagate unverified information though it's advisable to keep safe.

Rebuttal

GMO cannot be fully abolished. As long as it has a means of solving issues threating human life. It requires only a control measure to regulate the extent is interacting with human life. The ability to cure disease, drug development, and boost food production makes it stand still in its applicability. There is a need to further investigation and research on how GM can be used for bettering human life. The ethical issue rotating around it will be gauged on the current circumstances

It will make no ethical sense allowing GMO to take control of the next biotechnology without understanding the future impacts.

Consequently abolishing technology will make no moral sense when nations cannot feed themselves. There is no need to continue posing a threat to the future where there are alternatives. It’s morally acceptable to preserve the future at the expense of today rather than enjoying today on the cost of the future.

Conclusion

There is a controversial debate on whether the use of technologically generated food is safe or not. Biotechnology has enabled scientist to make food considered to be almost synthetic. The technology is being used in the manufacture of other genetically modified organism like drugs and xenotransplantation. The new product formed is different from both the mother plant and the gene donor plant. A variety of product has been modified, fruits and vegetables have been extensively modified.

Some of good attributed to GMO include Food security and Medical benefits of GMO. Some reasons undermine the ethicality of GMO they include: it’s believed to cause allergies, resistance to drugs and diseases more so cancer. GM food is easy to farm, but its result is environmental pollution. The GM enhances productivity; however, it is viewed to have a long-term effect; it will lead to more damage than better. Genetically modified drugs, vaccine, and proteins have helped in the treatment of disease. Xenotransplantation dehumanizing and equating the person to the animal.

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