

# Genetically modified foods issue

Business



Introduction There has been an intense debate about genetically modified crops over the last couple of decades. It should be emphasized that this debate was based on data and knowledge, and sound scientific data (Acosta & Chaparro, 2008). Nevertheless, philosophical perspectives are as significant as scientific perspectives in such arguments. Value judgments and philosophical issues have been recently dealt with concerning the claim that environmental risks of GM are comparable on scientific grounds.

The value judgments, which currently constitute the current discussion, integrate assumptions linked to economic, political and ethnic issues that would not be easily determined by scientific research. According to Acosta & Chaparro (2008), the food safety policies, which are a highly controversial subject, integrate philosophical issues linked to the way policy and scientific issues should be scientifically legitimated. In general, the whole issue of genetically modified food resulted in conflicting views held by proponents and opponents of the introduction of GM foods. In this regard, this research, based on the available literature, attempts to assess if this invention is the perfect remedy for the impending food insecurity. Genetically modified foods negatively affect the human health and environment (Acosta & Chaparro, 2008). The opponents of GM assume that conservative crops do not represent the risks for food and environment safety.

As a result, a variety of crops produced by conservative techniques is not regulated by a supervisory environment system. On the other hand, transgenic crops have been linked to harmful and negative impacts on human health and the environment, irrespective of whether the evidence available is based on science or not. The proponents of the comparability of

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environmental threats of genetically modified food and conventional crops have presumed that crops that have been modified by either conventional techniques or transgenic technology are the same in terms of purposes, traits and risks. Indeed, the transgenes integrated into transgenic crops have resulted in traits that are fundamentally the same as the desirable agronomic traits. The agronomic have been the objective of conventional breeding approaches.

Another reason why GM foods should not be encouraged is that the insertion of genes into the genome of a plant might result in unexpected and unintended pleiotropic impacts on the host (Acosta & Chaparro, 2008).

According to Acosta & Chaparro (2008), genetic engineering facilitates the transfer of recognized non-encoding or encoding DNA across different species. Consequently, the transfer of these DNA leads to intended modification of food crops. Despite the controlled transfer of DNA, the host might experience unintended impacts. These unintended effects lead to transformations in expression level of genes and their corresponding levels of proteins that are unconnected to the anticipated modification.

However, this claim has been opposed since unintended modification can occur in conventional breeding. Therefore, fears about theoretically unintended modifications should not be confined to genetically modified foods. Some opponents to the introduction of GM point out that proteins present in GM crops might cause food related allergies (Acosta & Chaparro, 2008). The assessment of allergenicity of GM crops and proteins has incorporated trees using clinical and laboratory techniques. This assessment revealed the possible allergenic risks of GM foods.

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One significant approach has been to analyze if a gene drawn from an allergenic source has transformed an introduced protein. For example, the GM soybean was not marketed after the realization that it caused allergies. On the flipside of the coin, the proponents of genetically modified foods have argued that GM promotes biofortification (Acosta & Chaparro, 2008). Biofortification is a process involving bred food crops yielding high bio-available concentrations of nutrients in their palatable tissues. This approach has been viewed as a promising option for alleviating malnutrition in underdeveloped nations.

This implies that malnutrition will be a history through gene modification. Vitamin A, iron, iodine and zinc deficiencies present the greatest threat to the health of the public. These deficiencies threaten the productivity and health of more than half of the universal population, children and women being the most vulnerable. Production of genetically modified food will significantly assist in alleviating these deficiencies and, therefore, improve public health and productivity. The Golden Rice, a type of rice modified to produce  $\beta$ -carotene, has been further engineered to yield about 23 times more carotenoids than the earlier type of Golden Rice (Acosta & Chaparro, 2008).

The production of genetically modified food will increase the global food supply, especially with the burgeoning world population. The universal population surpassed 6 billion at the end of 20th century. This implies that the global population would be more than twice at the end of the second half of the 21st century. Researches have projected that the global population

would be about 7.5 billion people by 2020 and about 9 billion by 2050 (Acosta & Chaparro, 2008).

However, poor nations account for the largest population growth. The increasing global population will require additional supply of food.

Nevertheless, the conventional methods of food crop production cannot meet the rising demand for food. Genetically modified food will play a substantial role in meeting these demands. In conclusion, GM foods are not the right solution for food insecurity. This is because there are public fears about the safety of these crops.

Genetically modified foods negatively affect the human health and the environment. The insertion of genes into the genome of a plant might result in unexpected and unintended pleiotropic impacts on the host. On the other, the production of genetically modified food will increase the food supply, especially with the burgeoning world population.