

## Genetically Modified Organisms and Foods

Andrea Floriano\*

Department of Genetic Engineering, National University of Singapore, Queenstown, Singapore

### DESCRIPTION

The term "genetic engineering" refers to a variety of techniques for modifying genetic material. The terms "genetic manipulation," "recombinant DNA technology," and "gene therapy" are also frequently used to refer to this area of study. It includes transferring genes between species, with the latter of these two being of more importance. Transgenic or Genetically Modified Organisms (GMOs) are those that have undergone such modifications. Transgenic methods do not always work well but they have the potential to produce faster results than traditional approaches. We firmly believe genetically modified/engineered ingredients are safe. Unlike conventional breeding, genetic engineering does not involve the mixing of the entire gene complement of two or more individuals and the ensuing need to re-sort them to give only the desired change.

The majority of the foods we consume today were developed using conventional breeding techniques. Traditional breeding can take a while, and it is challenging to make highly specific alterations to plants and animals. Scientists were able to make such alterations more quickly and precisely after the invention of genetic engineering in the 1970s.

Despite these differences, the concept of "substantial equivalence," which states that, "if a new food is found to be substantially equivalent in composition and nutritional characteristics to an existing food, it can be regarded as safe as the conventional food". However, several animal studies indicate serious health risks associated with consuming GM foods, including infertility, immune dysregulation, accelerated aging, dysregulation of genes associated with cholesterol synthesis, insulin regulation, cell signaling, and protein formation, and changes in the liver, kidney, spleen and gastrointestinal system.

Using biotechnology, food can be improved in terms of nutrition. Biotechnology is being used by researchers to create Genetically Engineered (GE) foods that are actually beneficial to cattle and humans. For instance:

- The anthocyanins, which are nutrients that have been found to be protective against a wide range of human ailments, were increased in this tomato through genetic engineering.

- The Golden Rice Project aims to commercialize vitamin-A-enriched rice in order to reduce the 2 million annual fatalities and roughly 500,000 incidences of childhood blindness in third-world nations.

Unfortunately, due to popular misconceptions about the possible risks of GMOs, many of these worthwhile and potentially life-saving projects are unable to reach the market. None of the GE foods now consumed have led to any of these issues. Before permitting them to be commercialised, the US Food and Drug Administration (FDA) evaluates all GE foods to determine their safety. Logic of the usage of genetically modified foods is that they are unnatural and frequently processed unethically; hence they should not be consumed. Since genes from other organisms are put into genetically modified foods to give them the desired qualities, they are seen as unethically manufactured. Other animal species, in addition to GM fruits and vegetables, are now being genetically edited and studied, but they are not available for purchase in supermarkets and are much more contentious than genetically modified vegetables. There are both advantages and disadvantages to genetically modified organisms, but there haven't been enough studies to demonstrate serious hazards from eating Genetically Modified Food (GMF).

### The potential advantages of genetic engineered foods include:

- More nutritious and delicious food
- Infection and dry spell safe plants that require less natural assets (like water and compost)
- Less utilization of pesticides
- Expanded supply of food with diminished cost and longer time span of usability
- More quickly developing plants and creatures
- Food with additional beneficial qualities. For example, potatoes that produce a lesser extent
- Healthy food varieties that could be utilized as antibodies or different medicines

### Disadvantages of using genetic engineered foods include:

- Making of food sources that can cause a hypersensitive or harmful response
- Abrupt or unsafe hereditary changes

**Correspondence to:** Andrea Floriano, Department of Genetic Engineering, National University of Singapore, Queenstown, Singapore, E-mail: andreafloriano@gmail.com

**Received:** 01-Aug-2022, Manuscript No. MAGE-22-19161; **Editor assigned:** 05-Aug-2022, Pre QC No. MAGE-22-19161 (PQ); **Reviewed:** 25-Aug-2022, QC No. MAGE-22-19161; **Revised:** 05-Sep-2022, Manuscript No. MAGE-22-19161 (R); **Published:** 14-Sep-2022. DOI: 10.35248/2169-0111.22.11:190

**Citation:** Floriano A (2022) Genetically Modified Organisms and Foods. Advac Genet Eng. 11:190.

**Copyright:** © 2022 Floriano A. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

- Accidental exchange of qualities starting with one GM plant or creature then onto the next plant or creature not planned for hereditary adjustment

GMOs can actually reduce fungicide use. GMO crops allows cultivators to use lower (and lower poisonous) fungicides on their fields. This is because GM crops can be modified to allow further targeted use of dressings and fungicides, give further natural pest resistance, and allow GMO to contend more effectively against weeds.

### **Production of GMOS**

Genetically Modified Organism (GMO) has become the common

term consumers and popular media use to describe foods that have been created through inheritable engineering. Inheritable engineering is a process that involves:

- Relating the inheritable information-or “gene”- that gives an organism (microorganism) asked particularity.
- Copying that information from the organism that has the particularity.
- Inserting that information into the DNA of another organism.
- By growing the new organism.