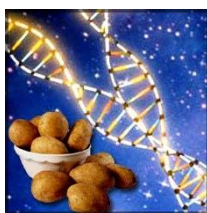


# GENETICALLY MODIFIED FOOD

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Genes are the fundamental chemical codes that determine the physical nature of all living things, from the tiniest single-celled organism to human beings. Genes make up DNA, which determines how the organism is going to develop in all ways that are not environmentally influenced.

Genetic engineering is sometimes also called bioengineering or biotechnology. All these terms refer to making artificial changes in the genes of the DNA of a living thing.

Genetic engineering of foods involves the insertion of genes from plants, bacteria, insects, fish, animals or humans into the DNA of another plant, fish, or animal to create a new variety. GE makes it possible to break through the species barrier and to shuffle information between completely unrelated species; for example, to splice the anti-freeze gene from flounder into tomatoes or strawberries.

The first genetically engineered product—a tomato—went on the market in 1994. By 1998, transgenic crops covered 27.8 million hectares worldwide.

Among transnational corporations, which spend millions on the production of genetically modified ingredients, are Dow Chemical, Aventis, Monsanto, Johnson & Johnson and DuPont. The distribution of genetically modified products mostly occurs in developing or underdeveloped countries.

Some nations have strong disagreements over GM products. Since 2002, in accordance with the European Union Resolution, European countries have established labeling and trace ability standards for GM food products. The United States claims that such measures violate the agreements about free trade



between countries. Attitudes toward genetically modified products differ. produce larger harvests than traditionally cultivated ones. that such crops can insure feeding of the increasing help the struggle with famine in underdeveloped countries.

Genetically modified crops can Another argument in favor is population of the world and

Another pro-GM argument is connected with treatment of certain infections and diseases. For example in India, where due to the lack of Vitamin A, children came down with blindness. So Vitamin A was added to rice.

However, there are indirect benefits from GMO: GM crops have shown to contribute to significantly reduced greenhouse gas emission from agricultural practices.

One concern about genetic engineering is that scientists might unknowingly create or enhance a food allergen. Experts estimate that 8 percent of children 6 years old and younger and 1 to 2 percent of adults have food allergies, which can cause severe, and sometimes life-threatening, reactions. For example, there are up to 15 different proteins in soybeans that people are allergic to and the major one, P34, is responsible for 75 percent of the allergic reactions.

The risk is that the consumption of GM products leads to the possibility of formation of cancer neoplasm in intestines.

The main environmental problem with genetically engineered food plants and animals is that, when they escape into the wild, they permanently disrupt ecosystems which are the products of billions of years of evolution. Another potential problem area is viruses. By their very nature, viruses invade the genetic material of their hosts and often break apart and recombine using part of the host's genetic material to create new viruses. The viruses will then spread and, because they could not have been naturally produced, there may be no natural defenses against them and they may cause widespread death of certain plants or animals, or even of humans.

Genetically engineered foods create specific ethical problems for those of various faiths. For example, religious vegetarians, such as Hindus and Buddhists, want to be able to avoid fruits and vegetables with insect, animal or humans genes in them.

Because almost all genetically engineered foods are not labeled, most people are not aware that they are probably already consuming them.

So labeling should be a right of citizens in a free society. But the decree on compulsory labeling of food products will be approved by the Cabinet of Ministers only this year. The Cabinet of Ministers approved state registration of production containing genetically modified organisms (GMO). If food products have GMP exceeding 0,9 percent, import will be prohibited to Ukraine.

What can we do? We can educate ourselves, our families, friends and community about current and potential problems with genetically engineered foods. On the local level, we can talk to the grocers and store managers where we shop. Most of them have little awareness of the issues level we can let our elected representatives know that we oversight of research and development and also required

Local officials should enact legislation both to genetically engineered food to post signs to that effect and those stores make information available to their customers genetically engineered.



involved. On the national want both stricter government labeling.

require stores that sell to recommend strongly that about which foods are

Genetically modified food products generate many questions and controversy among consumers.