

Genetically modified organisms

Business



Genetically Modified Organisms (GMOs) have been causing a stir in the news recently. Public interest groups and environmental organizations are opposed to GM foods. Recently, the studies on the impacts of genetically modified corn pollen on the monarch butterfly caterpillars caused a controversy.

The controversy raised the awareness on the issue of GMOs. GMOs refer to organisms whose genetic compositions have been changed through genetic engineering. Genetic engineering applies the latest molecular biology techniques to enhance the organism's desired traits. The traits include improved nutritional content and improved resistance to pests and drought. Genetic engineering has enhanced the speed and accuracy of achieving the desired traits compared to the conventional methods of breeding. The process for the creation of GMOs entails using genetic engineering technology to place genes that are derived from one organism into another organism of a different species.

Genes are transferred between plants; additionally, they are transferred between plants and non-plant organisms (Whitman, 2000). The process is undertaken to confer a desired trait. For instance, the Monsanto Company derived a soil bacterium and put it into the genome of a potato plant. The potato developed resistance for the Colorado potato beetle, eliminating the need to spray the potatoes to fight the beetle.

The potatoes are commercially grown in the United States. Additionally, the free occurring bacterium *Bacillus thuringiensis* has been transmitted in corn enabling it to create its own pesticide against insects like the European corn

borer (Whitman, 2000). Additionally, goats have been genetically modified to produce milk that is rich in human protein while pigs have been engineered to produce significant amounts of hemoglobin in their blood. Examples of foods with genetically altered foods include genetically modified corn, tomatoes, soya beans, wheat, and rice (Jones, 2010). Opposition on GMOs is primarily based on the health effects of GMO products to consumers. GMOs affect various groups differently.

A significant number of infant formula products that are on sale contain GM ingredients such as milk from cows that have been injected with GM hormones, and GM soya beans or corn. The use of GM is of interest to the health of infants and children. GM infant foods are not adequately tested; thus, they should not be feed on artificially fed infant since they are inferior foods for infants. GM products subject children to illnesses such as ear and upper respiratory infections, diabetes, asthma, and cancer. Additionally, GM ingredients alter the nutritional value of infant foods, increase a child's exposure to toxins, and increase the chances of developing resistance to antibiotics and allergies.

GM foods are predominantly dangerous to pregnant women and children. Feeding GM soya to female rats resulted in the deaths of most of their babies compared to less than 10 percent deaths on babies of rats that were fed on natural soya. Embryos of rats that fed on GM soya had altered DNAs, while those that were fed on GM corn had fewer and smaller babies. The babies that were fed on GM foods were smaller and smaller and had higher chances of being infertile. The consumption of GM soya by male rats led to alterations

in the young sperms. In buffaloes, consumption of GM cottonseed resulted in reproductive complications like abortions, premature births, and infertility.

A study that was conducted by the Institute of Ecological and Evolutional Problems and the National Association for Gene Security of Russia revealed that hamsters that were fed on GM foods produced infertile third generation offspring (Sturtz, n. d.). These studies reveal that GM foods have adverse effects on both pregnant mothers and their unborn children. Furthermore, GM foods adversely affect men, increasing their chances of becoming impotent.