

Genetic engineering (GE) of plants is a very current topic, and more and more controversial, since it is becoming an inseparable part of our lives. GE has, among other things, a great potential to help solve the current problem of hunger and malnutrition in certain parts of the world. The goal of this project is to clarify what genetically modified (GM) plants are, to present the possibilities of their practical use, to explain methods of preparation and to consider their advantages and eventual risks. By GM plant we understand a plant whose genetic information has been changed by introducing or removing part of the genetic information (a section of DNA, generally a gene). The most frequently used methods of transformation are the transformation by *Agrobacterium tumefaciens* and the ballistic method. GM plants can be used for production of food or feed in better quality and greater quantity, thanks to an introduction of higher resistance, whether it is to biotic stress (pest, virus or bacterial resistance) or to abiotic stress (drought, salinity, toxic substance in the ground..). In particular, the resistance to abiotic stress is an important issue these days, since through the climate changes some regions suffer more and more from insufficient precipitation and consequent drought. Some of the GM plants grown for the production of food have better nutrition qualities which can help solve the problem of insufficiency of some food components in the third world countries. Further, GM plants are used for the production of various proteins and enzymes for medicine and in technical industry. The possible risks of cultivating GM plants are for example the transfer of genes between transgenic and non-transgenic plants of the same or different species, food chain disturbance and the possibility of the emergence of new allergens and toxins.