

**Weekly Ag Report**  
Holly Egan, Lassen FFA  
December 5, 2012

What are genetically-modified foods? The term GM foods or GMOs is most commonly used to refer to crop plants created for human or animal consumption using the latest molecular biology techniques. These plants have been modified in the laboratory to enhance desired traits such as increased resistance to herbicides or improved nutritional content. Conventional plant breeding methods can be very time consuming and are often not very accurate. Genetic engineering, on the other hand, can create plants with the exact desired trait very rapidly and with great accuracy. For example, plant geneticists can isolate a gene responsible for drought tolerance and insert that gene into a different plant. The new genetically-modified plant will gain drought tolerance as well. Not only can genes be transferred from one plant to another, but genes from non-plant organisms also can be used. The best known example of this is the use of B.t. genes in corn and other crops. B.t. is a naturally occurring bacterium that produces crystal proteins that are lethal to insect larvae. B.t. crystal protein genes have been transferred into corn, enabling the corn to produce its own pesticides!

What are some of the advantages of GM foods? The world population has topped 6 billion people and is predicted to double in the next 50 years. Ensuring an adequate food supply for this booming population is going to be a major challenge in the years to come. GM foods promise to meet this need in a number of ways:

- Herbicide tolerance: Crop plants genetically-engineered to be resistant to one very powerful herbicide could help prevent environmental damage by reducing the amount of herbicides needed.
- Nutrition: Malnutrition is common in third world countries where people rely on a single crop such as rice for the main staple of their diet. However, rice does not contain adequate amounts of all necessary nutrients to prevent malnutrition. A strain of rice named "Golden Rice" has been genetically engineered to supply adequate amounts of vitamin A and iron into a person's diet and thus inhibits malnutrition.

Genetically modified organisms are often misunderstood and demonized as unnatural. But in an over-populated world, GMO's could be the answer to feeding our population.