

## Genetically modified foods

Genetically modified foods can be defined as organisms (i.e. plants or animals) in which the genetic material (DNA) has been altered in a way that does not occur naturally by mating and/or natural recombination.

GM stands for 'genetic modification' or 'genetically modified'. It's the process of altering the genes of a living thing. Genes carry the instructions for all the characteristics that a living thing inherits. Genetic modification allows us to produce plants, animals and micro-organisms with specific qualities.

People have been breeding animals and new varieties of plants for hundreds of years to develop or avoid certain qualities. Traditional methods of breeding involve mixing thousands of genes.

Genetic modification allows just one individual gene, or a small number of genes, to be inserted into a plant or animal. This enables them to be used in new and very precise ways. Such plants or animals are known as genetically modified organisms (GMOs).

GM foods are foods that contain or consist of GMOs, or are produced from GMOs.

### **How GM foods are assessed for safety**

The safety assessments of GM foods are carried out by the European Food Safety Authority (EFSA). Assessments include a detailed study of:

- whether the foods could be toxic
- their nutritional value
- whether they could cause allergic reactions

GM foods are only authorised for sale if they are judged:

- not to present a risk to health
- not to mislead consumers
- not to have less nutritional value than their non-GM counterpart

### **How GM foods are labelled**

We support giving consumers choice. We recognise that some people will not want to buy or eat GM foods however carefully they have been assessed to ensure their safety.

In the EU (including in the UK), foods must say on their label if they:

- contain or consist of genetically modified organisms (GMOs)
- contain ingredients produced from GMOs

This means that all GM foods, including flour, cooking oils and glucose syrups from a GM source, have to be labelled as GM.

For GM foods sold 'loose', information must be displayed immediately next to the food indicating that it is GM.

Foods produced with the help of GM technology do not have to be labelled. An example of this is cheese produced with the help of GM enzymes which are used to clot the milk in the production process. These are not ingredients in the cheese.

Products such as meat, milk and eggs from animals that are fed on GM animal feed also do not need to be labelled.

Genetic modification can be achieved by introducing a gene from one living thing into another. This could mean using genes from a different variety of the same species, or from a different species altogether. For example, genes from a plant that has good resistance to a certain pest can be used to improve the resistance of another type of plant.

To do this, the specific gene that causes pest resistance must be identified and isolated from the first plant. It can then be inserted into the second plant and used to grow new plants that are pest resistant.

Genetic modification can also be achieved by altering DNA which is the material that genes are made from.

The way a gene works can now be changed by 'switching it off' to stop something happening. For example, a gene involved in softening a fruit could be switched off. This means that although the fruit will ripen in the normal way, it will not soften as quickly. This can be useful because it means that damage is minimised during packing and transportation.