

8. Why is organic farming opposed to genetic modification?

There are three arguments against genetic modification

The arguments by organic farming against genetic modification can be roughly divided into three aspects:

1. environmental and health risks
2. socio-economic aspects, such as farmers' independence and freedom of choice for consumers are under pressure as a result of an increasing number of intellectual property rights in breeding, such as patents
3. the ethical and cultural values of organic farming (how we want society to be organised and how we treat life).

Narrow escape

For a long time organic farming has been fully based on conventional breeding. In fact this is still the case: around 95% of the varieties that are now used in Western Europe and the United States come from breeding programmes for conventional farming.

When genetic modification emerged as a breeding technique in the 1990s, not only did this open up a societal discussion, but organic farming also realised that it was high time to make the values of the organic sector explicit and to translate these into plant breeding. Only then could it retain control over the future of the seeds for organic farming.

In 1994 the global umbrella organisation for organic farming, IFOAM, banned genetic modification. In 1999 this ban was included in the European regulations on organic farming. At a later date this was also implemented in regulations governing organic farming in the USA, Japan and other countries.

Environmental and health risks

Scientists differ in their opinion about the risk analyses and the interpretations of these. Some stress the risks, while others state that there are good regulations for limiting the risks. Organic farming adopts the precautionary principle.

The difference in insights is to do with, among other things, the fact that some researchers and breeding companies regard a plant as a box of Lego whose building blocks you can change as you desire, see Figure 1. Representatives of organic farming adopt the view that a plant, just as every living being, is a coherent organism and that a change has consequences for the rest of the organisation of that organism.

Moreover, genetic modification is an experimental science. Introducing the desired gene is (still) not a very targeted activity, so that the gene can land anywhere on the chromosome. This can be in a part of the chromosome that is 'not stable' and where it can have unexpected side-effects. On the one hand there are increasing amounts of knowledge about these 'unstable' regions with the result that it is known how these plants can be excluded from the selection process and risks can thus be reduced; but on the other hand this can never be done completely. On the basis of these facts organic farming decided to adopt the precautionary principle.

Socio-economic aspects The tendency to consolidate and to take out patents is happening everywhere in industry and in the economy. However, a manufacturing industry such as the automotive industry cannot be compared with plant breeding, which deals with living material and our food.

Ethical and cultural values This is a specific argument by the organic sector. Being opposed to the mainstream vision obliges the sector to make its underlying values explicit, among other things as regards the integrity of the plant. After all, standards and regulations are an expression of underlying values, see Section 9.

Figure 1. Diagram of genetic modification in plants

