

RSPB Briefing: Genetically Modified crops and the environment

The RSPB believes that there is potential for genetic modification to produce crops that benefit both the environment and people. However, we are concerned that current applications of the technology may be exacerbating declines in farmland wildlife.

Most genetically modified (GM) crops currently on the market are either herbicide tolerant or insect resistant.

Herbicide tolerant crops are engineered so that a particular weedkiller can be sprayed over the fields, killing all weeds without harming the crop. The advantage is that the farmer can control weeds very efficiently, potentially using less herbicide than with a normal crop. However, the risk is that if farmers rely only on one herbicide year after year, weeds soon become resistant to it. Herbicide-resistance genes from the crop may even pass directly into the weeds. The RSPB is also concerned that these highly effective weed control methods leave little room for nature - both weed seeds and the insects that live on weeds are important food for birds and other wildlife. These fears are already being realised in some parts of the world where herbicide-tolerant GM crops are widely used, including the United States. Farm scale trials in the UK showed that, for some crops at least, growing herbicide-tolerant crops was worse for wildlife than growing their conventional equivalents.

Insect resistant GM crops are usually engineered to produce their own chemical insecticide. This should protect the crop from pests and reduce the need to spray insecticides. However it is important to remember that the insecticide is still present - just inside the crop instead of outside. Non-pest insects can still be accidentally harmed, and pests can become resistant to the chemical just as with sprays. There is an additional risk that genes from the GM crop could pass into wild relatives, producing wild plants that manufacture their own insecticide, with potentially serious implications for the environment. Another approach is to engineer plants to produce chemicals that repel, rather than kill, pests: for example Rothamsted Research centre in Hertfordshire has been trialling a wheat that repels aphids.

The RSPB believes that much more research is required to assess the impacts of insect resistant GM crops before any consideration is given to wider scale planting. In the immediate term there should be more focus on wildlife-friendly pest management that does not use chemicals, such as Integrated Pest Management and techniques used in organic farming.

Looking to the future

Future GM crops (and animals) could bring about significant change to farming methods and our landscapes: for example changes to cropping patterns or to the range within which the production of certain crops is economically viable. It is hard to predict what environmental impacts might arise from future GM technologies, which is why it is so important to have rigorous risk assessment processes in place and to take a precautionary approach.

Perhaps the biggest risk is that by focusing investment and research effort on GM crops which may or may not provide benefits in the future, we detract attention from solutions to our problems that already exist. The RSPB believe far more resources should be invested in promoting sustainable farming techniques with proven benefits for wildlife and the environment.

Any GM crop approved for commercial use, as well as being thoroughly tested for safety, must be deployed as part of a more sustainable farming system.