

A review of the knowledge of the impacts of GMOs on organic agriculture

Funder: DEFRA (Project Ref: OF0193)
Collaborators: IOR-Elm Farm Research Centre, John Innes Centre
Start Date & Duration: 01 August 2001; 6 months

Overall Aim

The aim in this review was to consider the ways in which the use of GMOs in agriculture in the UK and internationally might impact on organic farming. It did not address the controversy about the rights or wrongs of GMO's *per se*. The subjects covered are based on a set of questions raised at the beginning of the study. The review was based primarily on evidence from peer-reviewed literature.

Abstract of Research

The EU Council Regulation (EC) No 1804/1999 para 10 (supplementing Regulation (EEC) No 2092/91) states that Genetically modified organisms (GMOs) and products derived therefrom are not compatible with the organic production method. The UK organic sector and the United Kingdom Register of Organic Food Standards (UKROFS) have also stated that GMOs have no place in organic production. However, with the development of GM technologies and the production of GM crop varieties the ability of organic agriculture to remain free of GMOs is at risk. DEFRA asked Elm Farm Research Centre (EFRC) to produce a paper identifying the perceived impacts of GMOs to organic agriculture. This paper identified a number of issues where information was needed to assess the likely impacts. It is accepted that there is research ongoing in some of the areas identified. There has also been a number of reports issued that address, or partially address, certain of these issues, including the DEFRA commissioned review on organic farming and gene transfer from genetically modified crops by the John Innes Centre (OF0157), the Soil Association Funded work by the National Pollen Unit and the interim reports of the Farm Scale Evaluations of GM Crops trials. However, none of these are systematically addressing the issues raised by the organic sector in the EFRC paper to DEFRA.

DEFRA have requested that the John Innes Centre (JIC) and EFRC take the issues raised within the EFRC paper and undertake a search of the literature to ascertain what scientific information is available and to interpret the information in light of the threat to organic agriculture's GMO free status.

Objectives

1. To review the knowledge of the impacts of GMOs and GMO products on organic agriculture.

Project Progress

The project was completed and submitted to DEFRA. The main issues that were raised from the study are;

- That there was a surprisingly small amount of refereed/peer review information in the literature.
- Much of the science that is reported is out of context and laboratory based studies of little relevance to the natural environment.
- The main threats to organic agriculture are from gene flow through pollen flow, seed etc.
- Other than physical contamination of the organic crops The current generation of GE crops (herbicide tolerance) have little threat to organic agriculture.

- There are a number of steps that organic farmers/producers/processors can take to protect themselves. These include closing the production system to prevent GE contamination.

Experienced & Expected Benefits

- The report was finally placed onto the DEFRA web site nearly a year after it was submitted to DEFRA. It has received minimal coverage which is unsurprising as there was no announcement of it from DEFRA and the UK is also in the middle of a GE public debate and there are many more contentious reports available for the media to pick up on.
- EFRC is seen as a leading anti-GE organisation and is consulted by a wide range of government, NGO and private organisations and individuals. Our evidence-based approach is not always welcomed by other anti-GE organisations but it has won us places at influential tables.
- Invitation to collaborate with Friends of the Earth on a soon to be published document on to evaluate the UK Government sponsored Farm Scale Evaluation trials.
- Participation in Economic Analysis Expert Group established by the Prime Ministers Strategy Unit as part of the Government sponsored GE debate.
- Co-sponsoring (with Five Year Freeze, Genewatch, Unilever and the Guardian) of a one-day conference on GE – Gene futures.

Project Output

Pearce BD, Wolfe MS and Welsh JP. (2002). Review of knowledge of the potential impacts of genetically modified organisms (GMO) on organic agriculture. In: *Proceedings of the 14th IFOAM World Congress, Canada.* pp 298.

Atkinson D, Watson DA, **Pearce B, Woodward L, Wolfe MS, Welsh, JP** and Kowack K.
Organic agriculture and GM crops. In: *Proceedings of the BCPC conference – Pests & Diseases 2002:* 523 - 530.

Bulletin 64 December 2001: GE the great debate or debacle.

FiBL Dossier series 2003. Genetic engineering and organic farming