



Biological
Farmers of
Australia

Network Of Concerned Farmers

GREENPEACE GeneEthics Network 

Seeds of doubt – North American farmers’ experiences of GE crops

About the report

Seeds of Doubt: North American farmers’ experiences of GE crops is the first comprehensive study into the economic and social impacts of Genetically Engineered crops in North America. The 67 page report is fully referenced and includes economic analysis, agronomic data, and stories from farmers.

Overview of GM crops worldwide

- GE crops were first grown commercially in 1996. Six years later, most countries are still not growing GE crops and they account for just 3% of broadacre crops globally.
- Four countries account for 99% of the total area of GE crops (US, Canada, China and Argentina).
- Four crops account for 99% of the total global GE acreage (Canola, Soy, Corn, Cotton). Only 19% of the total area planted to these crops in 2001 was GE.
- One company, Monsanto, dominates the market, accounting for 91% of total GE crop area.
- Of the GE crops that have been commercialised, only GE Soy is increasing in area.

Key findings of the report

Economic Impacts

- Including subsidies, GE crops have cost the US economy at least \$12 billion from 1999-2001. This has been due to contamination and loss of markets;
- Within a few years of the introduction of GM crops, almost the entire US\$300 million annual US maize exports to the EU and the \$300 million annual Canadian rape (canola) exports to the EU had disappeared due to market rejection. The US share of the world soya market has decreased while non-GE producing countries have seen an increase;
- The biggest single contamination problem was the Starlink corn debacle in which GE corn that was not approved for human consumption contaminated up to 50% of the total US corn supply (despite Starlink being only 1% of total corn area planted). Starlink was found in food products such as taco shells and the recall cost to Aventis was estimated to be up to \$1 billion;
- US farm subsidies were supposed to have fallen over the past few years. Instead, they rose dramatically, paralleling the growth in area of GE crops;
- The profitability of growing GE herbicide tolerant soya and insect-resistant Bt maize is less than non-GE crops. This is due to the extra cost of GM seed (which can be up to 40% higher), the lower market prices paid for some GE crops, and reduced soya yields.

- GE crops have caused widespread contamination and led to the elimination of the organic sector in some parts of North America. Many organic and other GE-free maize farmers have lost sales or received lower prices because of contamination. The cost of this is estimated at over \$US 90 million annually;

Impacts on farmers

- Farmers have not benefited but have suffered a severe reduction in choice about how they farm as a result of the introduction of GE crops. Some farmers are now finding themselves locked into growing GE crops as no GE-Free option remains. Non-GE seeds varieties are increasingly difficult to buy, and some conventional seed stocks are contaminated;
- GE crops have led to a proliferation of legal issues over patents and lost markets. Biotechnology companies are suing many farmers for infringing company patent rights, saying that they have unlicensed GE plants on their land;
- A non-GE farmer whose crop was contaminated by GMOs was sued by Monsanto for US\$400,000. Farmers are turning to the courts for compensation for lost income and markets as a result of contamination;
- Promises of increased yields from GE crops have generally not materialised. GE soya has yielded 11% less than high yielding non-GE soybeans, and 6% on average less overall;
- The economic benefits to farmers have simply not materialised. Take up of the crops is related to heavy marketing, lack of alternative sources of information on crop performance and convenience for the farmer.

Environmental impacts

- Contrary to claims from the biotechnology industry, farmers are also now more reliant on herbicides (weedkillers). Certain crops have been engineered to be resistant to specific herbicides to enable farmers to spray weeds without damaging crops. Although it was claimed that only one application would be needed per crop, several applications are often required;
- Weeds are developing resistance to herbicides, and rogue GE plants that grow after a harvest (volunteers) have appeared and spread widely. This is particularly a problem with canola in Canada.

Selected quotes from the report

“Were it not for the...income support payments...that act as a kind of limited economic damage control system...farmers would be feeling a much greater economic impact from the export sales lost as a result of GMO’s”, Dan McGuire, policy chairman, American Corn Growers Association, March 2002.

“The application of biotechnology at present is most unlikely...not to increase maximum yields. More fundamental scientific breakthroughs are necessary if yields are to increase.” United States Department of Agriculture, 2001 Agriculture Information Bulletin

“GM canola has, in fact, spread much more rapidly than we thought it would. It is absolutely impossible to control...It’s been a great wake-up call about the side effects of these GM technologies.” Professor Martin Entz, University of Manitoba, 2001.

About the Soil Association

The Soil Association is a membership charity which was founded in 1946 by a group of farmers, scientists and nutritionists who were concerned about the way food was produced. It is at the centre of the debate about sustainable farming policy in the UK and worldwide.