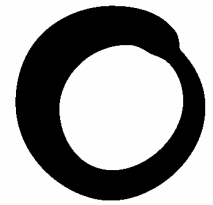


# Briefing Note



**Friends of  
the Earth**

## Seed Purity

In order to protect the public's right to choose non-GM food, or for farmers to grow non-GM crops, it is essential that seed stocks remain free of GMOs. This will become increasingly difficult to achieve if GM crops are grown widely in the UK. Already, after only six years of growing GM crops in the US, it is estimated that 'virtually all' maize seeds being sold contain some level of GM<sup>i</sup>. Legislation is currently being considered in Europe to set thresholds for contamination of seeds with GMOs. However, once seeds become contaminated the whole food chain is affected and eliminating the problem is impossible.

### **The importance of maintaining seed purity**

#### **Consumer Choice**

The seeds from which farmers grow their crops are the foundation of the food supply chain. The purity of non-GM seeds determines whether farmers have the choice to grow non-GM crops, food processors to supply non-GM produce, and consumers to eat non-GM food. Once seed is contaminated, the presence of GM passes quickly up the food production chain. Food producers in the UK have responded to consumer demands for GM-free products, and require ingredients that are GM-free. Although regulations allow for up to 1 per cent GM contamination in food, retailers and producers are working to zero levels.

#### **Farmer choice**

A contaminated seed supply would remove the right of farmers to farm in the way they choose, and deny future generations similar options. More and more farmers in the UK are turning to organic production, with the support of the UK Government<sup>ii</sup>. Organic standards prohibit the presence of GMOs.

GM-free seed lines must be maintained for future plant breeding. Removing GM material from breeding lines in the future would be costly, difficult and could require further genetic engineering. Demand for GM-free products is on the increase, presenting an economic opportunity for farmers. If GM crops were to be grown without appropriate restrictions, this would be impossible.

#### **Farm Saved Seed**

Saving seed is more widely practised in the UK than might be thought, and may be as high as 40 per cent of seed grown<sup>iii</sup>. Farmers all around the world save seed for agronomic and economic reasons - the saved variety is best suited to the local soil and climate and it saves money.

If GM crops were widely grown in the UK it is unlikely that a farmer who saves seed will be free from the threat of cross-pollination from neighbouring fields. It would be impossible to test for contamination on the farm, forcing the farmer to abandon saving seed and buy certified seed at greater costs. Farmers who did plant saved seed which was subsequently found to be contaminated would be in breach of patent regulation and be subjected to legal action by the biotechnology company. Such actions have already taken place in Canada<sup>iv</sup>.

### **Contamination of seeds**

GM crops have been grown commercially in some parts of the world since the early 1990s. Despite relatively few crops being grown on a commercial scale in Europe, there have been several cases of contamination in the

past few years. In the spring of 2000 it was discovered that more than 6,000 hectares of farmland across the EU had been planted with conventional oilseed rape contaminated with Monsanto's GM oilseed rape<sup>v</sup>. The seeds originally came from Canada and it is believed that contamination occurred when GM pollen blew on to fields of conventional oilseed rape.

More recently oilseed rape used in the farm scale trials was contaminated with a different GM oilseed rape without consent to be grown in the UK<sup>vi</sup>. Inspections of the sites had failed to detect the problem.

Contamination can occur at any point in the food supply chain - in the fields through cross-pollination, at harvesting, during transport in trucks or ships, on grain elevators. The majority of cases of seed contamination have arisen from imported seeds, mostly from the US and Canada. The regulatory system is less rigorous than in Europe and over 45 different types of GM food are approved for use in the US.

## **Problems with 'gene stacking'**

It is not just problems with conventional seeds contaminated by GM seeds. Serious management problems can arise from the contamination of GM seeds with a GM seed of a different variety, eg a herbicide tolerant GM crop containing GM seeds tolerant to a different herbicide. Where different GM crops are grown near each other, cross pollination can lead to 'gene stacking'. In Canada oilseed rape plants have been found to have three different herbicide tolerant genes present<sup>vii</sup>.

## **Preventing contamination**

Current legislation in Europe is proposing to allow thresholds for contamination of conventional seeds with GM<sup>viii</sup>. This is unacceptable to Friends of the Earth - the threshold should be zero, which in practice means no GMOs detectable at the current limit of detection of 0.1%. Legislation should be put in place to achieve this.

In order to maintain the purity of seed it will be necessary to set adequate separation distances between non-GM and GM crops. In practice this may mean banning GM production from seed producing areas. Because seed from some species lies dormant in the soil for up to ten years<sup>ix</sup>, statutory breaks between GM and non-GM production must be set. The costs involved in protecting conventional seed from contamination must not be the responsibility of the innocent and usually small non-GM producer, but must be borne by the biotechnology industry.

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<sup>i</sup> Cropchoice News, 6 Feb 2001. *'North Dakota organic farmers worry about biotech contamination'*.

<sup>ii</sup> DEFRA, 29<sup>th</sup> July 2002. *The Way Ahead For Organic Food And Farming*

<sup>iii</sup> Friends of the Earth, August 2000. *Response to the consultation on the thresholds for adventitious presence of approved GMOs in seeds.*

<sup>iv</sup> Clark, Anne, 14<sup>th</sup> May 200. *The Implications of the Percy Schmeiser Decision*. Available at [www.mindfully.org](http://www.mindfully.org)

<sup>v</sup> MAFF, 18<sup>th</sup> May 2000. *Minister's Statement on Seed Purity*.

<sup>vi</sup> DEFRA 15<sup>th</sup> August 2002. *Impurities Found In Aventis GM Rape Seed Farm Scale Evaluations*.

<sup>vii</sup> English Nature Report No 443, Feb 2002. *Gene-stacking in herbicide-tolerant oilseed rape: lessons from the North America experience*.

<sup>viii</sup> SANCO/1542/02July2002. [www.defra.gov.uk/corporate/consult/approvedgmos/sanco1542.pdf](http://www.defra.gov.uk/corporate/consult/approvedgmos/sanco1542.pdf)

<sup>ix</sup> Scientific Committee on Plants. SCP/GMO-Seed-Cont/002-Final. 13 March 2001 *Opinion of the SCP concerning the adventitious presence of GM seeds in conventional seeds*.

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