

No GMO releases through seed contamination

Background Paper May 2001

The seed contamination problem

Spring planting in the Northern hemisphere has started, and with it numerous seed contamination scandals have broken loose in the United States (US), Canada and in Europe.

On 1 March, the US Department of Agriculture (USDA) said that seed intended for sale in 2001 had been found contaminated with „StarLink“. This genetically engineered (GE) maize variety was in the centre of controversy last year¹, after it was detected in hundreds of food products, in violation of EPA (The US Environment Protection Agency) rules which restricted its use to animal feed for fear of health risks (allergic reactions) in humans.

On 18 March Aventis, the producer of StarLink admitted that more than 430 million bushels (11 million tonnes) of corn (maize) in the US had been contaminated with the unapproved GE variety – more than eight times the amount of StarLink actually grown in 2000. Aventis CropScience executive John Wichtrich said that StarLink could “never be cleaned out of the U.S. food supply”. The USDA had to intervene and spent 20 million US Dollars to purchase corn seed contaminated by StarLink .

Aventis wants the US Environmental Protection Agency to change its rules and just accept StarLink contamination.

Greenpeace sees this as confirmation that industry itself believes genetic pollution is forever.

The list of recent seed contamination scandals this year include:

- On the 27 April, the Ministry of environment in Schleswig Holstein, the northernmost state in **Germany** found seeds from Monsanto and Pioneer contaminated with GE Maize. The varieties are “Arsenal”, multiplied in Chile (Monsanto) and Janna, multiplied in Canada (Pioneer). Arsenal was found to be contaminated with GA21 (herbicide tolerance) a GE maize that is illegal in Europe. Janna was found to be contaminated with the “events” BT 176 and BT11. BT 11 is not allowed for planting at all. While Pioneer recalled all the “Janna” seeds in Germany, Monsanto questions the validity of the tests, leaving farmers with the risks and the economic consequences of the GE contamination.
- 2 May, Greenpeace **Austria** discovers GE contamination in Pioneer maize seeds. In the “conventional” Variety PR39D81 of Pioneer contamination's were found with GE variety BT11 and Mon809 or 810 (analytically not possible to distinguish). BT11 is a maize variety from Novartis which can only be imported but not planted in Europe. For Mon811 imports into Austria are illegal and for Mon809 the registration and examination process has not yet been completed. For all these varieties commercial sale in Austria is illegal.
- In **Italy**, hundreds of tons of soya and maize seeds remain blocked in the ports because of an ongoing confrontation between the Ministry of Agriculture and Monsanto plus other seed companies over contamination with GE seeds. The Ministry has ordered an investigation of Italy's 21 seed companies dealing with import and sale, while the farmers committed to a 'safe sowing campaign" have called for the destruction of the seeds.
- In **Canada**, Monsanto had to replace its Canola variety "Quest" because it was found to be contaminated with a variety not approved in many countries it was going to be exported to.

¹ See attached Starlink chronology

These facts confirm that no progress was made after last year's string of seed contamination scandals: GE contamination was found in cotton (Greece, March 2000), rapeseed (UK, Sweden, France, Germany, Luxembourg, Norway and Finland), soybeans (France), maize (France), sugar beets (France, UK and the Netherlands). These incidents call attention to the need for a strict application of a precautionary approach when dealing with genetically modified organisms.

How do seeds get contaminated?

Purity of seeds in terms of species, variety, "inert" non-seed material and a whole list of other categories are standard requirements for quality seed production and are taken very seriously by seed producers. National and international (e.g. OECD) regulations and regulating bodies enforce strict quality/purity standards. They have to, because impurities increase/multiply from one generation to the next. This is why GMO contamination of seeds cannot be tolerated if we want to avoid the release of GMOs through the back door. Even low contamination levels have a huge impact in terms of acreage for commercially important crops like maize, rapeseed or sugar beets: A seed contamination of 1% would mean the release of 900 plants of maize and 6000 rape plants per hectare.

Contamination can happen through breeding, propagation and processing of seeds. Important potential entry points are cross-pollination between GE and Non-GE plants in the field, and through "leftover" seeds from previous crops that grow as "volunteers" and cannot be distinguished from the current crop if they are the same species. Other sources are machinery and equipment for transport, processing and packaging if processing channels for GE and non-GE seeds are not strictly segregated or thoroughly cleaned.

Why is this a problem?

Seed contamination leads to the release of genetically modified organisms into the environment risking huge, irreversible impacts. The kind of genetic traits that are set free is unknown, extent and location of the areas affected completely out of control. Canadian farmer Laverne Affleck summarises his experience in his country: "Canada has gone blindly into broad scale experimentation with its land base. It is an experiment which cannot be retracted, and was entered into without sincere reflection as to possible ramifications. In our experience crops (and weeds) are spread in so many way (wind, the waterways, on the roadside, on farm machinery and trucks) that it is impossible to prevent accidental releases into unwanted areas. We now have some degree of GE crop contamination across our entire Canadian Prairie land base."² The Royal Society of Canada found that GE "herbicide-resistant volunteer canola plants are beginning to develop into a major weed problem in some parts of the Prairie Provinces of Canada."³

In addition to the impact on biodiversity, GE seeds endanger the livelihoods of conventional and organic farmers as well as the businesses of non-GMO seed producers:

² <http://www.gmcommission.govt.nz/>

³ Royal Society of Canada (2001) "Element of Precaution: Recommendations for the Regulation of Food Biotechnology in Canada", An Expert panel Report on the Future of Food Biotechnology, prepared by the Royal Society of Canada at the request of Health Canada, Canadian Food Inspection Agency and Environment Canada, released Feb. 4/01, see: <http://www.rsc.ca/foodbiotechnology/GMreportEN.pdf>.

- The StarLink case in the US illustrates what can happen to **conventional farmers** who got their maize crop unknowingly contaminated: When elevators and commodity traders rejected their harvest of corn contaminated with StarLink this posed an existential threat to their livelihoods. Aventis, the company that “created” StarLink faces liability costs going beyond one billion US Dollar.
- Even more dramatic is the situation for the **organic farming community**, especially in the United states, but also in Canada and Argentina, the other two countries with large scale, commercial use of GMOs: Because of the relatively widespread use of GE crops (corn, rapeseed, soy and cotton) it is getting more and more difficult to find uncontaminated seeds, a fundamental requirement in official national and international standards for organic farming.
- **Producers of non-GMO seed** in the US now have to face up to a situation where they will loose export markets, particularly in Europe. The US Department of Agriculture is spending some 20 million US Dollar to buy contaminated seeds from small producers, but the credibility damage is done and corn Growers in the US demand certification that the seed they are buying is free from any StarLink contamination. Some major European companies have already reacted: KWS, Germany’ biggest seed producing company (including GMO’s) has stopped propagating seeds in the US because of the risk involved.

A major lesson from the US and Canadian experience is: the bigger the share of GE crops as compared to the non GE varieties the less likely it is that GE contamination can be prevented.

Seed contamination scandals in Europe

Where they could be traced back, seed contamination scandals in Europe were caused by imports from the US and Canada. “Conventional”, non-GMO seed was contaminated with GMO varieties that were not approved under EU directive 90/220 and were therefore illegal. The way individual countries reacted shows that national legislation and institutional set-up is often inadequate to deal with the situation effectively and that EU regulations and implementation are completely inadequate. Since then, the Commission has reacted and proposed changes to the existing directives related to seed contamination.⁴ Its main features are that “genetically modified seeds not covered by an authorisation under part C of Council Directive 90/220/EEC on the deliberate release in to the environment of genetically modified organisms, are not allowed and should therefor not be present in the seed lot”¹, meaning “zero tolerance”. For contamination caused by approved GMO-varieties, however, the Commission distinguishes between self pollinating (0.5%) and cross-pollinating plants (0.3%) as applicable thresholds.

The Greenpeace position

Greenpeace is opposed to the release of any GMOs into the environment because of the unpredictable, potentially huge ecological risks involved. Greenpeace stresses the importance of the precautionary principle in dealing with both the deliberate and non-intentional release of GMO’s into the environment. This approach has been accepted as guiding principle by the signatories of the biosafety protocol -- among them the European Union and its member states.

⁴ See attached Commission working paper

1. Greenpeace demands **zero tolerance** for contamination of seeds by GMOs. We demand certified quality assurance regimes to ensure that the greatest possible care is taken to prevent GMO contamination.
2. Greenpeace therefore **supports the EU Commission's approach demanding zero tolerance for seed contamination** by unapproved varieties. Already existing approvals must be revised.
3. Greenpeace demands that allocation of costs related to seed contamination by GMOs (such as quality assurance, monitoring and controls, compensation of farmers, retailers, the organic farming sector etc.) must be based on the **polluter-pays-principle**: Companies like Aventis, responsible for the contamination of vast amounts of seeds, corn and corn-based products must be held accountable for the precautionary measures necessary to protect from the negative impacts of their technology as well as from the damage inflicted on others.