

Farmers in South Sulawesi burning GM cotton in September 2001.



In 2001 a coalition of Indonesian NGOs campaigning on biosafety and food took legal action against the decree authorizing the sale of GM cottonseeds for cultivation in South Sulawesi, citing the inadequate environmental impact assessment and lack of public participation. Unfortunately, the NGO coalition lost the case in court in September 2001.

conventional cotton preferred

Monsanto promoted Bt cotton among farmers by arguing that it was environmentally friendly, that it used fewer pesticides, that it would ensure an abundant harvest, that it was good for export and that it would increase the welfare of farmers.

In general, however, Bt cotton was a failure. It succumbed to drought and pest infestations. Many farmers complained about Monsanto's claims about the superiority and performance of the genetically engineered cotton. The government revealed that more than 70 percent of the Bt crop locations did not produce the promised expected yields. Some Bt cotton growers confirmed that they harvested around 500 kilograms per hectare, whereas Monsanto repeatedly boasted that its GM cotton would yield three tons per hectare.

“There are two possibilities for my cotton harvest: I will keep it until decayed or I will burn it, even though I might lose in production cost and effort, rather than sell it to Monsanto.”

Baco, a farmer in Manyampa village, South Sulawesi.

ten years later: broken promises and unsustainable agriculture **four**

monsanto kicked out of south sulawesi, indonesia

Indonesia is a major importer of cotton, a raw material for its huge textile industry. In 1999, Bt cotton was approved by the Indonesian government and declared environmentally safe for planting in the country.

bt cotton in south sulawesi

In 2000, forty tons of genetically modified cottonseeds from South Africa arrived at the airport in Makassar, South Sulawesi. The seeds

were imported by PT Monagro Kimia, the Indonesian subsidiary of Monsanto. The seed, developed by Monsanto, is known as “Bollgard”, and “Bt” refers to the gene for an insect-killing toxin isolated from the soil microbe *Bacillus thuringiensis* (Bt) and inserted into the cottonseed.

The seeds were trucked away under armed guard, to be sold to farmers in seven districts in the province. Opposition was strong from the very beginning. Local NGO activists opposing the imports tried to block the trucks leaving the airport, and protested against the use of the Indonesian military police to guard the vehicles. Activists said that the seed should be quarantined for detailed examination before distribution, and accused the company of attempting to disguise what they were doing by using trucks marked “rice delivery”. Protests continued in 2001, and hundreds of farmers and NGO activists joined a demonstration led by the Indonesian Federation of Peasants' Unions calling for a boycott of GM seeds and GM products.

monsanto pulls out of south sulawesi

In December 2003, the Indonesian Minister of Agriculture finally announced that Monsanto had pulled out of South Sulawesi after three years of field experiments there. In fact, the company had already stopped supplying seeds to the farmers in February of that year. One of Monsanto's reasons for withdrawing was that its cotton business in South Sulawesi was no longer economically viable.

The majority of farmers are pleased about Monsanto's departure, as they suffered losses with the GM cotton. In fact many farmers' groups had stopped planting Monsanto products long before the seed supply was stopped in February 2003.

more information: *Organic Consumers Association*: www.organicconsumers.org/gefood/IndonesiaCotton.cfm



Ibu Santi Profile.

testimony by ibu santi profile, an Indonesian farmer who burned her cotton fields

“My name is Santi. I am a farmer and the head of a women farmers group in Bulukumba, South Sulawesi. One year ago, officers from the plantation office came to my door and persuaded me to plant Bt cottonseeds in our 25 hectares of farm land. They told me that it will yield a good harvest, a productivity of 4 to 7 tons per hectare. They said the company, Branita Sandhini [a subsidiary of Monsanto] that provides us with the seeds and fertilizers through credit schemes will buy our harvest at a good price, so we can pay our debt to the company and improve our welfare. So, despite my farmers group's doubt and our limited experience in cotton planting, I encouraged them to alter the cornfield into a Bt cotton field. For the sake of our welfare, to improve our future.

But that was a lie. Good harvest was nothing more than illusion. The harvest was very poor, just 2-3 rags (around 70-120 kilograms) for each hectare. Far from helping, the company then raised the price of the seeds and fertilizer before the harvesting time and forced us to agree to that one-sided decision by signing the letter of agreement. If we didn't sign the letter, the company refused to measure or buy our harvest. The company didn't give the farmer any choice, they never intended to improve our well being, they just put us in a debt circle, took away our independence and made us their slave forever. They try to monopolize everything, the seeds, the fertilizer, the marketing channel and even our life.

I refused it. We, I and my fellow group members, did not deserve this kind of fate. Many other farmers and their groups chose to surrender their independence but we didn't. Instead of signing the letter, we burned our cotton. We were angry

about the company's dirty tricks, unfair treatment and empty promises. We demand justice so we burned our cotton to make the message clear. We are not bluffing. We know that we're risking our life by taking this position through the tide of intimidation and threat from local government and security officers, but we'd rather die protecting our right than surrendering it to the hands of the company that has deceived us.

This is my testimony. A testimony that was based on my bitter experience, a traumatic one. The practice of Bt cotton planting has given us more harm than good. Many of my fellow farmers have experienced the same things. Their voices were unheard, covered by the company's lies and our local government's repudiation that put the blame on our limited knowledge and experience. I speak for them, the unheard voices, for the injustice that they get so that we can learn from the truth.”

source: Konphalindo

secrecy, suspicion and failure linked to gm corn in spain



© greenpeace/airrasco

Spain, the only country in the EU in which genetically modified crops are grown for commercial purposes, has been cultivating GM crops for six years. Since 1998, an estimated 25,000 hectares have been planted each year with a genetically modified variety of corn (Bt176) sold by the Swiss biotech company Syngenta. The corn has been engineered to resist the European corn borer, a potentially harmful insect for maize.

The cultivation of GM corn varieties in Spain is taking place with a total lack of information. No official data is available on the locations or exact acreage planted with GM crops, nor has there been an independent analysis of GM crop results or of their possible negative impacts for the environment or agriculture in general. Furthermore, the introduction of GM crops has happened in an atmosphere of secrecy, suspicion and fear in rural areas, where farmers

and cooperatives afraid of losing markets or jobs refrain from speaking openly.

The few independent studies available show that pests can survive on Bt corn, and this means that they may become resistant to it. This casts doubts on the pest control efficiency of GM crops in the medium term, and endangers one of the natural pesticides used in organic farming. The impacts of GM corn on non-target species and soil ecosystems also remain unknown. The same goes for the effects of antibiotic resistance genes on animals and humans, simply because no independent monitoring has been carried out on these issues.



© greenpeace/canisco



© ian jackson, ree ewni

quiet contamination

Two cases of genetic contamination were announced in 2001, and they probably represent only the tip of the iceberg. Without any measures in place to prevent genetic contamination and with no possibility for non-GM farmers to know where GM fields are located, it is to be expected that genetically modified material is flowing from GM to non-GM crops. However, the lack of monitoring, and the climate of fear that stifles the acknowledgement of genetic pollution by farmers, result in an unknown extent of contamination.

It has not been proven that the GM varieties cultivated in Spain give better results than conventional crops, nor that they are necessary, nor that they are useful for pest control. Studies have shown that yields for the GM crops are substantially lower than yields

for comparable conventional varieties. For example, one study reported that the GM corn had a 25 percent smaller yield than the top yielding variety in 1999. Furthermore, according to the Spanish government's working group on pesticides, corn borer incidence in Spain is "low" and "does not justify the use of these GM varieties".

The most worrying aspects of the introduction of GM corn in Spain are the social consequences. Although never addressed as a real issue, these include economic damage due to contamination by GMOs, liability problems for farmers, farmers' increasing dependence on big companies, and loss of the consumer's and farmer's right to choose.

Six years of GM crops in Spain shows that the introduction of these new agricultural varieties has not contributed to the construction of a sustainable agricultural model. The lack of impressive agricultural results and the negative consequences (like genetic contamination and pest resistance) show that GM cultivation should stop, since it is neither economically nor environmentally sustainable. In addition, it is clear that GM crops are creating new problems for farmers, for specific business sectors and for consumers.

more information:

Friends of the Earth Spain:

www.tierra.org/transgenicos/pdf/Algranoingles03-08.pdf

“This is the world’s worst case of contamination by genetically modified material because it happened in the place of origin of a major crop. It is confirmed. There is no doubt about it.”

Jorge Soberón, Secretary of Mexico’s National Biodiversity Commission, April 2002.

ten years later: broken promises and unsustainable agriculture six

contamination in corn’s mexican birthplace

*Landraces varieties of Mexican
maize, Oaxaca, Mexico.*



“Our seeds, our corn, are the basis of the food sovereignty of our communities. It’s much more than a food, it’s part of what we consider sacred, of our history, our present and future.”

Pedro, Indigenous community member in Chihuahua.

boundaries and end up in other countries. StarLink corn for instance ended up contaminating the food supplies in Japan, South Korea, and Bolivia.

In 2001, a peer-reviewed article in Nature reported that traditional maize varieties in two Mexican states (Oaxaca and Puebla) were contaminated with DNA from genetically modified maize. It is illegal to cultivate GM maize in Mexico.

The suspected source of the contamination is the United States, since it exports large quantities of maize for food and feed purposes to Mexico. It is believed that Mexican farmers planted US GM maize intended for food and feed without knowing it was genetically modified.

Despite the seriousness of the contamination, there still is no clear plan of action to address this genetic pollution, nor to prevent it from



Mexico is the center of origin of maize, where the greatest diversity of this crop is found. Since GM crops were first commercialized in the United States, there have been many concerns in neighboring Mexico about the possible contamination of Mexican corn. Corn varieties have been developed by Indigenous and local farmer communities over thousands of years, and corn is one of the key reserves of genetic material for plant breeding, the basis of food security. Maize diversity is key for farmer communities and plant breeders, and is needed for improving the quality and productivity of corn crops worldwide. Mexico also hosts the world’s most important collection of endangered corn seeds.

In 2001, the area in the US cultivated with GM corn was over 20 million acres, constituting over 50 percent of all corn cultivated in the country. Many cases of transboundary contamination have shown that illegal GMOs can easily cross

happening again. Moreover, monitoring done by civil society organizations in over 130 local communities in Mexico found that contamination occurred in nine states, seven more than the initial research showed. The organizations also claim to have identified StarLink GM maize, which is not authorized as food.

source and more information:
Action Group on Erosion, Technology and Concentration (ETC):
www.etc.org

source: Farm Scale Evaluation Report:
www.defra.gov.uk/environment/gm/fse/results/fse-commentary.pdf

more information:
Friends of the Earth England, Wales and
Northern Ireland:
www.foe.co.uk

ten years later: broken promises and unsustainable agriculture seven

uk field trials show mixed results



In 1999, the UK government asked a consortium of researchers to investigate how growing GM crops might affect the abundance and diversity of farmland wildlife compared with growing conventional varieties of the same crops. The results were intended to help the government decide whether to allow such GM crops to be grown commercially in the UK, but were never meant to be the sole factor in this decision. The researchers studied three genetically modified herbicide-tolerant (GMHT) and conventional crops: beet, oilseed rape and maize. The effects of these crops on weeds and invertebrates were investigated across the UK for three growing seasons during the period 2000-02.

© Jens Christiansen



rape and GM beet were commercialized would lead to the skylark becoming extinct in two decades due to lack of food. Two common weeds and important sources of food for wildlife, fat hen and chickweed, could disappear in half a century.

In contrast, these same weeds might increase in abundance following a shift from conventional to GMHT maize cropping due to the greater weed control exerted by conventional herbicide regimes compared to those used with the GMHT crops. However, the validity of the maize trials was put into doubt when, a week before the results were

mixed results for butterflies and bees

The British researchers found that growing conventional beet and spring oilseed rape was better for many groups of wildlife than were the GM equivalents. There were more insects, such as butterflies and bees, in and around the conventional crops because there were more weeds to provide food and cover. There were also more weed seeds; important in the diets of some animals, particularly birds. The long-term decline in weed seed banks is predicted to increase, causing “accelerated species decline” under GMHT crop regimes.

However, GMHT maize was better for many groups of wildlife than conventional maize. There were more weeds in and around the GMHT crops, more butterflies and bees around at certain times of year, and more weed seeds.

In general, conventional oilseed rape and beet fields were the richest in flora and fauna, with conventional maize crops the poorest. Effects were explained by the different herbicide regimes and were consistent between sites, farms, years and different initial levels of weeds

skylark extinct in 20 years?

If these trends are maintained under widespread GMHT cropping, then the present herbicide regimes associated with GMHT beet and spring oilseed rape might exacerbate long-term declines of weeds, including species that are important food resources for many invertebrate, small mammal and bird species. A modeling exercise published by the Department for Environment, Food and Rural Affairs three days before the release of the farm-scale evaluation results predicted that the level of weed control possible if GM oilseed

published, the EU banned atrazine and simazine beginning in 2005. Weed control in seventy five percent of the non-GM crops in the farm-scale evaluations was with atrazine, so the trials were not a realistic comparison of the future options for maize.

A further criticism is that there was no serious attempt to assess the yield or quality of the crops grown. This means there is no way to establish whether the biodiversity gains seen in the GMHT maize would ever be acceptable in commercial practice; it is doubtful that commercial GM crops will ever be managed like the ones in the evaluation. The most important time to control weeds is when the crop is at the seedling stage. In the non-GM part of the trials, herbicides were used to do just that whilst in the GM trials, herbicide application was deliberately delayed to allow weeds to develop.

“The cost of cultivation for Bt cotton was 1092 Rupies (US\$24) more than that for non-Bt cotton because there was only a meager reduction in the pesticide consumption on Bt crops. On average, there was a significant reduction (35 percent) in the total yield of Bt cotton, while there was a net loss of 1295 Rupies (US\$28.50) in Bt cultivation in comparison with non-Bt cotton, where the net profit was 5368 Rupies (US\$118). Around 78 percent of the farmers who had cultivated Bollgard this year, said they would not go for Bt the next year.”

‘Did Bt Cotton Save Farmers in Warangal? A season long impact study of Bt cotton’, Quayum, A. and Sakhari K., 2002.

ten years later: broken promises and unsustainable agriculture eight

india's rotten experience with gm cotton



Monsanto's Bt cotton in Andhra Pradesh.

© geert ritsema

© geert ritsema

Somakka, a woman farmer from Andhra Pradesh, India



“The company people came in the spring. They told me that I could make more money if I would start using the newest cotton seeds from the United States. They said I could get up to three times more cotton from my land. The first 60 days everything went fine. The new cotton was flowering abundantly. I was full of hope. But then the tide changed and my hope turned into despair. Heavy pest attacks started to occur. I started spraying the cotton, just like the company people told me. I applied fertilizer and irrigated the cotton field three times. But nothing worked. Most of the flowers dried out and the cotton bolls started falling off the plant. Eventually I only harvested four quintals (400 kilos), three times less than the company promised.”

Somakka, a woman farmer from Andhra Pradesh, India, in January 2004. In 2003, Somakka bought GM cotton seed from Mahyco-Monsanto, a joint venture between the Indian company Mahyco and Monsanto. After her poor harvest she said she would never buy GM cotton again.

Cotton farmers in Andhra Pradesh.



India provides an example of how a genetically modified crop, Bt cotton, did not live up to the promises made by biotech giant Monsanto.

Mahyco, a subsidiary of Monsanto, was authorized to release genetically modified cotton in India over a three-year period between April 2002 and March 2005. The company launched a huge propaganda drive promoting the excellent performance of Bt cotton. They defined Bt cotton as environmentally safe and economically beneficial as it would reduce pesticide use and cultivation costs and result in increased yields.

When the promotion of Bt cotton started in one of the states that cultivated GM cotton, Andhra Pradesh, many farmers bought the seed hoping to save money, despite the fact that the Bt cotton seeds cost more than conventional ones.

empty propaganda

Farmers in Andhra Pradesh grew 8,000 acres of Bt cotton crops in 2002. In early 2003, after one year of experience with commercial releases, the Minister of Agriculture of Andhra Pradesh declared that Bt cotton farmers had not benefited from Bt cotton. Many farmers were angry at the propaganda that had made them believe they were buying miracle seeds.

“The cost of cultivation for Bt cotton was 1092 Rupies (US\$24) more than that for non-Bt cotton because there was only a meager reduction in the pesticide consumption on Bt crops. On average, there was a significant reduction (35 percent) in the total yield of Bt cotton, while there was a net loss of 1295 Rupies (US\$28.50) in Bt cultivation in comparison with non-Bt cotton, where the net

profit was 5368 Rupies (US\$118). Around 78 percent of the farmers who had cultivated Bollgard this year, said they would not go for Bt the next year.”

‘Did Bt Cotton Save Farmers in Warangal? A season long impact study of Bt cotton’, Quayum, A. and Sakkhari K., 2002.

Other regions in India (including Madhya Pradesh, Maharashtra, Vidarbha, and Gujarat) had experiences similar to the one described in Andhra Pradesh. For example, initial reports from Madhya Pradesh claim that Bt cotton was a 100 percent failure, and farmers are demanding compensation from the company.



© Ian Jackson, foe ewmi

1. GM is a radical new technology, and GMOs are different from conventional organisms. Although the United States and the biotech industry claim that GMOs are substantially equivalent to their conventional counterparts, they are increasingly isolated in this view. The Biosafety Protocol, a UN Treaty adopted in 2000 to regulate GM crops, confirmed that they are not equivalent and has established specific rules to regulate them.

2. GMOs have been introduced without adequate understanding of their environmental, health and socioeconomic impacts. Cases of contamination with illegal GM crops, like the 'StarLink', or 'biopharmaceuticals' debacles in the United States and the contamination of Mexican maize show how little we know about the impact or consequences of GM crops and releases.

3. The first decade of commercialization of GMOs has been a failure for biotech corporations. The biotech industry had expected people and governments everywhere to embrace GM crops without question, but public skepticism has forced them to limit their current activities to a few main countries. Biotech corporations failed to market products with clear benefits for consumers or farmers. Instead, GM crops created novel and alarming problems, including genetic contamination

Moreover, biotech companies and their powerful lobby groups relied heavily on PR strategies to sell their dream. For example, they heralded the genetically modified 'Golden Rice' as a solution for Vitamin A deficiency in the Third World, but to date this appears to be a 'golden hoax'. Behind the scenes, companies play dirty to secure their interests; for instance the biotech industry has been behind various threats of trade sanctions, including the attempts by the US to impose GM food on reluctant countries like Bolivia, Croatia and Sri Lanka and on the European Union.

4. GM crops are increasing corporate control over agriculture. Monsanto engineers and sells the vast majority of GM crops around the world. The right of farmers to save and use their own seeds, the foundation of agriculture, is under threat of being eliminated for the

conclusions

Friends of the Earth believes that the first decade of the commercialization of GM crops has been a failure for biotech corporations. Between 1994 (when the first GM crop was commercialized in the US) and 2004, the promises made by biotech companies have not been fulfilled, and opposition to GM crops is growing stronger by the day. Given the experiences with GM crops in the past decade, we have come to the following conclusions:

first time since the creation of agriculture. The behavior of corporations like Monsanto in countries including the United States, Canada, and Indonesia shows some of the major negative consequences of monopolistic corporate control.

5. Nations should have the right to impose bans on GM food, feed, or commercial growing. Every country should have the right to adopt precautionary measures on GMOs, including bans and moratoria. Alliances between biotech companies and pro-biotech governments formed to threaten countries taking precautionary measures against GMOs with trade sanctions are outrageous and unethical.

6. GM food is unfit to feed the world. Biotech companies claim that GM food is needed to feed the world in order to convince the public of its necessity. This claim that GM crops are the answer to the hunger problem is refuted in the case of Argentina, where hunger persists despite vast acreages of GMO crops. It has also been discredited by an increasing number of development and farmers' organizations, scientists and developing agricultural countries.

7. There is an urgent need to protect centers of origin and diversity. In 2000, Bolivian civil society was successful in preventing field trials of GM potato in the country, which is a center of origin for the potato. In Mexico, the center of origin of maize, contamination of local maize with GM maize has recently been confirmed. This is worrisome, and requires urgent action. Centers of origin and diversity, as key reservoirs of agricultural biodiversity, must be preserved from genetic contamination, and countries hosting such centers must immediately create clear plans of action to prevent and address contamination.

8. There is an urgent need for an international liability regime. Current liability regimes are vastly insufficient. Industry must pay for genetic contamination and any other damage caused by the release of GM organisms in the environment. The launching of a class action lawsuit by Canadian organic farmers to make Monsanto and Aventis liable for genetic contamination is one example of the growing demand to make corporations liable for the damage they cause. It is crucial that a fast-track process be initiated under the international Biosafety Protocol with the goal of putting in place an international legally binding instrument to protect citizens against potential future damages caused by GMOs.

9. GM crops conflict with sustainable agriculture and food security. GM crops foster dependence on pesticides and encourage the use of monoculture agriculture, thus threatening the environment and endangering food security. They are furthering the industrialization of agriculture by focusing on the production of cash crops for the global market rather than the needs of local communities and the promotion

glossary

Bt Bacillus thuringiensis (Bt) is a toxin-producing gene taken from a soil bacterium which is used to engineer insect-resistant 'pesticide plants'.

EU European Union

GE Genetic engineering or genetically engineered

GM Genetic modification or genetically modified

GMHT Genetically modified herbicide tolerant

GMOs Genetically modified organisms

HT Herbicide-tolerant

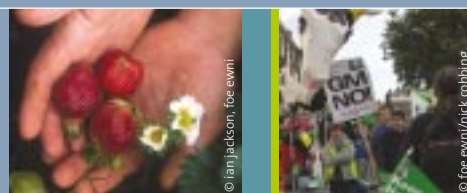
WFP World Food Program

WTO World Trade Organization

USAID US Agency for International Development

VAD Vitamin A deficiency

more information:
 FoE Europe GMO Campaign:
www.foeeurope.org/GMOs/Index.htm
 FoEI GMO Campaign:
www.foei.org/gmo/index.html



of agricultural biodiversity. Agricultural biodiversity plays a key role in food security and food sovereignty. The large-scale introduction of GM crops would exacerbate the ecological vulnerability already associated with monoculture agriculture.

10. There are viable and practical alternatives to GM crops which are almost invariably cheaper, more accessible, more productive in marginal environments and more culturally and socially acceptable.

To conclude, citizen opposition to GMOs is snowballing. In Europe, distrust is so high that GMOs have in effect been removed from the majority of supermarket shelves. In the South, many countries in Latin America, Africa, and Asia have rejected GM food aid outright. Consumer and retailer suspicion has forced Monsanto to delay the commercialization of its GM wheat, initially planned for 2004. The failure of biotech companies in the last decade and the growing global opposition should catalyze a shift of focus to alternative, reliable agricultural techniques that are less costly than the multi-billion dollar modern biotechnology industry.



**Friends of
the Earth
International**

