

Testimonies of Contamination

Why co-existence of GM and non-GM crops remains impossible

REPORT

April 2009

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Picture on front cover:
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Acronyms

Bt Maize Bacillus thuringiensis maize, a genetically engineered, insect-resistant maize
CAAE The Aragonese Organic Agriculture Committee
CAP Common Agricultural Policy
CC.AA Comunidades Autonomas (Autonomous Communities)
CCPAE Catalán Organic Agricultural Produce Committee
EU European Union
GM Genetically Modified
GMO Genetically Modified Organism
MON810 A variety of Monsanto GM Maize
MAPA Ministry of Agriculture, Fisheries, and Food

Author Juan-Felipe Carrasco

With assistance from: Mónica Parrilla, Marta San Román, Isabel Bermejo (Ecologists in Action) David Sánchez (Friends of the Earth), David Olmo, Aragonese Organic Agriculture Committee, Marta Piqueras and Carlos Mateos (COAG), La Tierrallana Association of Organic Consumers and Users ... and the people whose cases are described in this report.



Report Summary

This report describes the socioeconomic and human impacts of the presence of genetically modified (GM) maize and of genetic contamination in Spain based on experiences in 2007.

Greenpeace has collected a set of testimonials from producers who have been harmed directly or indirectly by contamination by Monsanto's genetically modified maize, MON810. It does not claim to offer an exhaustive view of the maize situation in Spain, but rather illustrates how their livelihoods are damaged by the presence of this GM crop. This collection of testimonials shows a clear reality: serious contamination of non-modified crops is happening in the only EU country whose government allows MON 810 on a commercial larger scale.

The farmers' stories tell of an alarming reduction in the amount of organic maize being grown and the direct negative impacts that genetically modified organisms have on the population. These organic producers have voluntarily opted out of the conventional or GM farming model, many out of dedication to the principles of sustainability.

Now, they face contamination from neighbouring GM crops, even when they take measures to try to avoid cross pollination of the plants. For an organic farmer, genetic contamination is an unmitigated disaster. This report tells the stories of real people who have experienced losses not of their own making. Adding insult to injury, they often have to pay for testing or other protection measures themselves. The stories in this report include:

- Félix Ballarín, an organic maize grower, who lost his organic certification and so lost the price premium that his crop should command at market. He now no longer grows maize because the risks are too high.

- Faustino Cirugeda, who produces organic hogs, and had to buy thousands of tones of feed from outside Spain because the local varieties lost their organic certification due to genetic contamination.

- The organic bakery Panadería Rincón del Segura, which had to return a local farmer's flour after he discovered genetic contamination, causing financial losses for them both.

- Cheese makers Quesos Artesanos de Letur, who had to modify the diet of their own cows when a maize supplier suffered contamination, costing tens of thousands to buy alternative grains.

Clearly, the loss of varieties and the domination of GM affect many along the food production chain, not just the maize growers. The influence of the GM companies is so strong that one farmer we spoke to refused to be named, for fear of the consequences of speaking out.

While this report describes mainly examples of organic producers and manufacturers, it is not only organic agriculture and livestock production that are harmed by genetic contamination. Rather, the cross-pollination is detected in organic production first, because it is subject to such a high level of analysis, study, and evaluation.

There are no safeguards for MON 810 cultivation, and co-existence of GM and non-modified crops is impossible. Now, the Spanish government must face reality and take action.



image An action by Greenpeace in a maize field

Background to genetically modified crops in Spain

Spain approved the commercial cultivation of the first GM maize by Ciba Geigy (now Syngenta) in 1998 and since then it has been the only European Union Member State that allows large-scale cultivation of genetically-modified organisms (GMOs). Subsequent Spanish governments have continued to approve many varieties of one type of GM maize, MON 810. There are now more than 50 varieties of this type of maize, which was created and patented by the multinational company, Monsanto.

However, in other EU Member States, there is strong scepticism about genetic modification in general and particularly about MON 810. Six countries prohibit GM varieties, Austria France, Greece Hungary, Italy, and Poland.

In Spain, the government of the “Partido Popular” (Popular Party) supported multinational agro-biotechnology companies against the interests of farmers and consumers and to the detriment of the environment when they were in power. Since the election of 2004, the PSOE government (Spanish Socialist Workers Party) has not improved the situation, but rather, made it worse. Sidestepping the legislature, the Ministry of Agriculture, Fisheries, and Food (MAPA) tried to pass a Royal Decree on the so-called “co-existence” between GM and non-GM crops that was clearly designed by the GM seed industry to promote its own interests. However, a broad social movement against it successfully stopped approval of the decree.

In 2006, with the organisations Assemblée Pagesa de Catalunya and Plataforma Transgenics Fora, Greenpeace released the report, Impossible Co-existence, which shows, through an in-depth investigation, the real situation of GM crops in Spain. Based essentially on the realities in Cataluña and Aragón, the report demonstrated that “co-existence” of GM agriculture with non-GM crops is totally non-viable. In the 2006 report, many testimonials were collected from farmers, livestock herders, and cooperative managers, along with analysis results from maize field samples. Overall, it shows the total lack of measures for separation, segregation, and control by the administration, lack of transparency in research, the administration’s failure to monitor and control the crops, the presence of illegal varieties and unauthorised experimental fields, and the absence of public registries on the location of the fields.

This new report tells the personal stories of losses and damage to agriculture from GM contamination. But they are only the tip of the iceberg; without a systematic analysis, the full scope of contamination is unknown. In Spain, thousands of hectares of Bt maize are grown without the government taking any measure to evaluate, much less to prevent, the pollination of conventional or organic maize fields by these GM varieties.

Under these conditions, genetic contamination is inevitable. Conventional (non-organic) foods are not analysed despite the fact that European laws on labelling and traceability require it, but it is known that conventional production is widely contaminated by GMOs .

“In addition to providing enormous health benefits, organic farming is economically and socially profitable. It is the agricultural and livestock production of the future, the only type of farming that can guarantee sustainable development by combining ancient knowledge with the results of new experiments available to society. Genetically modified crops are impeding this progress toward a better world.”

Félix Ballarín, Organic farmer

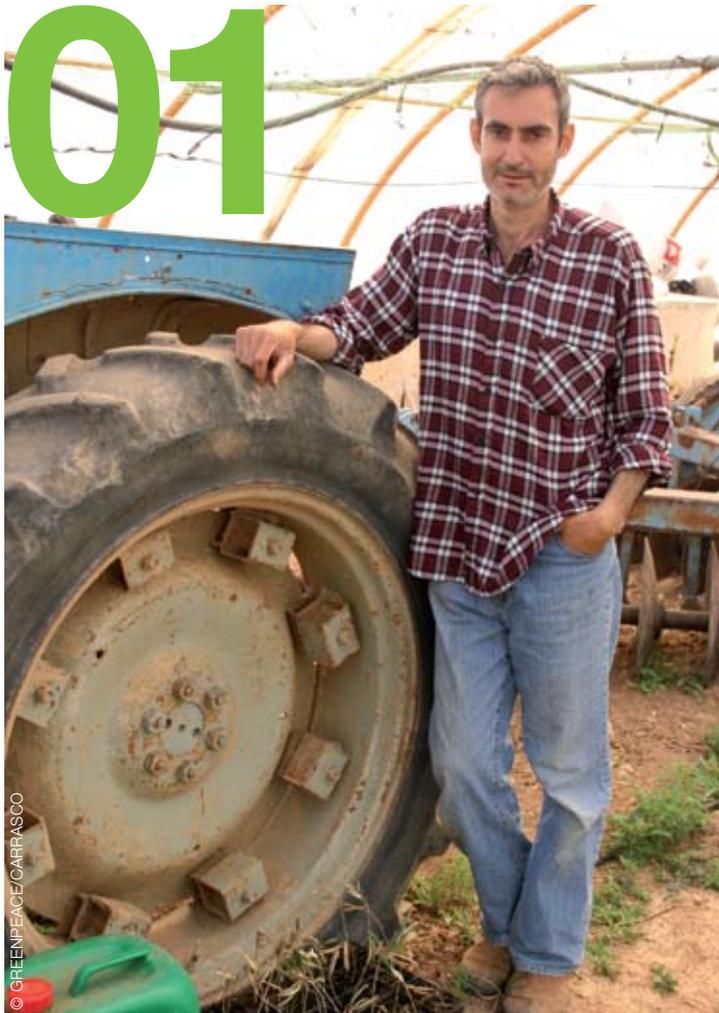
¹ Bt maize contains a genetic sequence that enables the maize to produce a potent insecticide, referred to as Bt toxin, which is capable of killing insects such as the corn borer and other lepidoptera (butterflies and moths). This gene is extracted from a bacterium in the soil, *Bacillus thuringiensis*. Another gene gives the maize tolerance to a herbicide, glufosinate ammonium. MON 810 is a type of Bt maize.

² Greenpeace (2008) GM Contamination Register Report 2007, available at: <http://www.gmcontaminationregister.org/>



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Traditional maize varieties are being lost



© GREENPEACE/CARRASCO

“Incredibly, the Ministry of Agriculture blamed me, arguing that I made mistakes in the selection process and reproduction of the variety. The truth is that this argument shows that, even when we comply with the distances defined by the Ministry to prevent contamination, in the last three selection years (2000-2003) a native variety that we, the farmers, planted is disappearing.”

Name

Félix Ballarín

Area

Sariñena (Huesca)

Crops

Grains (maize, wheat, bran, barley), alfalfa and vegetables, all organic

Surface Area

7.7 ha of organic maize in the year 2007

Félix has been growing organic maize for five years. A few years ago, he started to recover a local “red” variety that is very popular in various regional dishes. Félix is deeply involved in his community. He undertakes local political activities and also leads a project where immigrants undertake organic horticulture.

In 2004, his crop was contaminated by two types of GMOs, one in a high proportion. In 2007, Félix Ballarín planted a hybrid seed certified as organic and this was also contaminated. The Aragonese Organic Agriculture Committee (CAAE) analysed his harvest and again detected the presence of GMOs.

Consequently, even though he was the victim of unwanted contamination, he lost organic certification for all 7.7 hectares of crop, and was forced to place the harvest on the conventional market. This was despite the fact that he planted early to avoid his maize cobs blooming at the same time as the maize nearby, in an attempt to avoid GM varieties pollinating his crops. Nevertheless, because of new water concessions, his neighbours planted their potentially GM maize early and Félix’s crop had a head start of only one week, the crops’ blooming partially overlapped, and contamination occurred.

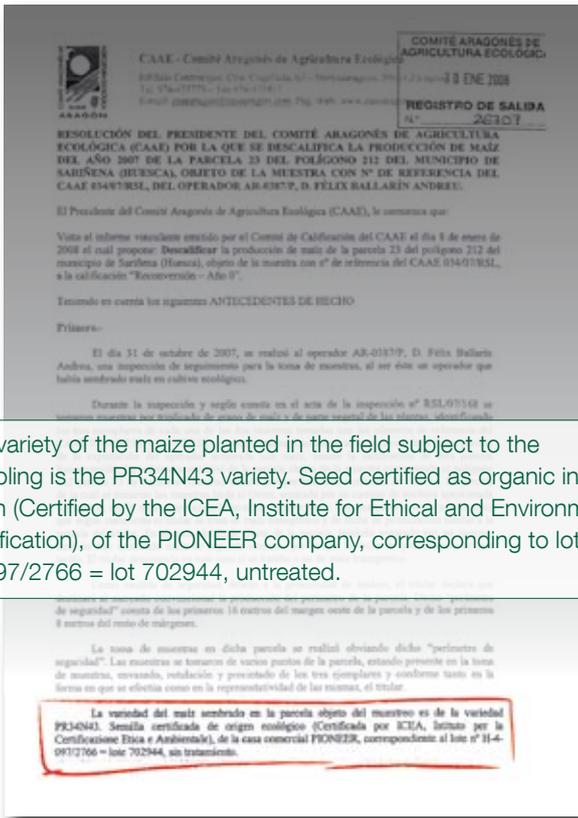
Félix’s testimonial explains how the farmers have selected seeds over generations, and have fed themselves. Now, with the contamination, those seeds contain genetic material owned by Monsanto. If they continue to reproduce the variety they are now actually breaking the laws and infringing on the company’s patent.



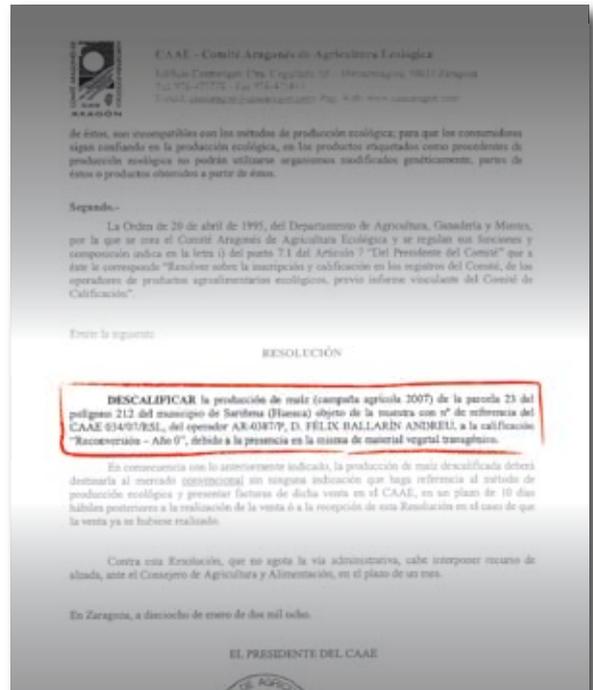
image Red Maize, a local variety in danger of extinction

© BALLARIN

Traditional maize varieties are being lost



The variety of the maize planted in the field subject to the sampling is the PR34N43 variety. Seed certified as organic in origin (Certified by the ICEA, Institute for Ethical and Environmental Certification), of the PIONEER company, corresponding to lot No. H4097/2766 = lot 702944, untreated.

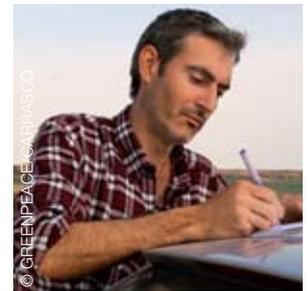


TO DISQUALIFY the maize production (2007 agricultural season) from field 23 of polygon 212 of the municipality of Sariñena (Huesca), the subject of the sample with CAAE reference No. 034/07/RSL, by operator AR-0387/P, Mr. FELIX BALLARIN ANDREU, from the qualification "Reconversion – Year 0," due to the presence of GM vegetal material in the sample.

Félix Ballarín on contamination and organic principles...

"I knew I was running a risk of being contaminated by GMOs, but if nobody plants maize it gives the impression that co-existence is possible. It is a high cost, a high personal cost as well as a high economic and social cost."

"I stopped. This year, I'm not planting any maize. I can assume some risk with my capital, but not much. Maize from Aragón is disappearing, even though our region has great potential for organic maize on thousands of hectares. In addition, organic livestock farming is being affected...it is very difficult, almost impossible, for an organic livestock farmer to get established because he knows he runs the risk of buying GM maize."



Summary - Table of Economic Consequences

Forcing Planting		3.000 kg/ha x 7.7 ha x 36 cents/kg	8,316 €
Disqualification and Sale on the Conventional Market	Price that would have been received on the organic market: 36 cents/kg		
	Price on the conventional market: 22 cents/kg (14 cents/kg less)	6,000 kg/ha x 7.7 ha x 14 cents/kg	6,440 €
Directly Attributable Economic loss			14,756 €

Damage and consequences of GMOs

Because Félix planned to plant earlier, he selected a short-cycle variety (called “600 cycle”) so that he could harvest it dry and avoid sending his harvest to the dryer, where it would have risked contamination from the left-over GM grains that had been dried at the same facilities. However, because his neighbours also planted early, he had to plant too quickly for this type of variety (at a temperature too low for the initial phases of the plant), which drastically reduced his production levels from 9,000 kg/ha to 6,000 kg/ha.

Following disqualification from the organic market, Félix was forced to sell at 14 cents/kg less on the conventional markets, a significant financial loss.

Clearly, this exclusively financial evaluation of the damage does not reflect the farmer’s worry due to uncertainty throughout the season, damage to his reputation with customers, or the potential complete loss of organic maize farming in the region due to contamination.

“The future of agriculture is organic. Real farming, not intensive farming, is the only way to produce sustainably, it is the only way to guarantee profit and a dignified life for farmers.”

“Acceptance of thresholds for the presence of GMOs in organics proves that co-existence is impossible.”

A farmer's attempt to avoid GMO contamination attack

02



“I feel I am a victim of GMOs. One of the problems with GMOs is that they appear on my farm and... they prevent me from selling my produce on the organic market, which is the only way to make a profit on my business.”

Name

Mariano Jiménez

Area

Paraje Coderón Faginete (Erla, Zaragoza)

Crops

50 ha of irrigated land and 10 ha of non-irrigated land, all organic

Surface Area

7 ha of organic maize in 2007

Mariano has been growing organic maize for many years. His crop was contaminated by GMOs in 2004. In 2007, the Aragonese Organic Agriculture Committee (CAAE) analysed his harvested crops, it detected the presence of GMOs again, and as a result his 7 hectares of crop lost organic certification.

This was despite the fact that the closest genetically modified plants were located several hundreds of metres away. Mariano says *“The contamination is reaching me from at least 500 metres away. So, the administrative offices who say that separation by some tens of metres is safe, they are not right. If someone wants to believe in those distances stated by the government, let them believe it. But, it’s not true.”*

Faced with the presence of GM maize fields in the vicinity of his farm, he decided to plant later than his neighbours in order to “escape” contamination. By doing this, his maize would have fewer days to grow, so there was a significant risk of not reaching the potential production per hectare.

Damage and consequences of GMOs

Disqualification of his harvested crop forced him to sell in the conventional market at 17 cents/kg less, a significant financial loss.

As in the other cases, this amount does not reflect factors such as the harm to reputation with his suppliers and in the market, as well as discouragement and personal disappointment due to the failure of an entire year of work.

In the case of Aragón, the analyses for GMOs are done by the Aragonese Organic Agriculture Committee, so this cost is not directly incurred by the persons affected, unlike in other autonomous communities. However, because it is a public entity, the taxpaying public will bear this expense and not the companies responsible for the presence of GMOs. In addition, the person affected may be the one obligated to pay if the overseeing authorities are privatised in the future.

image The affected farmer shows the fields which were contaminated in 2007



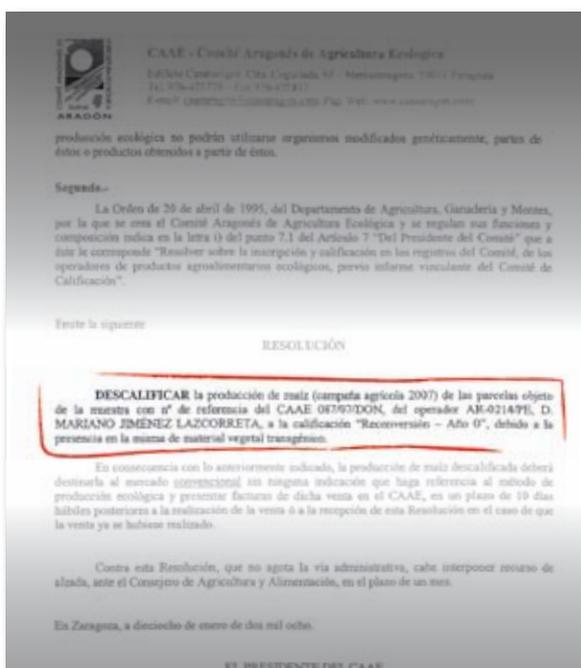
© GREENPEACE/CARFASCO

Mariano Jiménez on contamination and co-existence...

“I started growing maize again in 2008. I assumed this large risk because prices for conventional maize may be higher than in previous years and the loss I would bear if I could not sell on the organic market would be less. But, if the prices were not the same worldwide, it wouldn't be worth it to grow organic maize due to the contamination risk.”

“I would like to do something without causing contamination. I have faith in organic agricultural techniques and livestock production.”

“I do not agree with the threshold of 0.9% tolerance of GMOs in organic agriculture because it has been proved that GMOs are dangerous. They tell us about food security and they do the opposite. They tell us about sustainability and they do the opposite. And, instead of “the polluter pays,” finally we are seeing that, lie after lie, the polluted pays.”

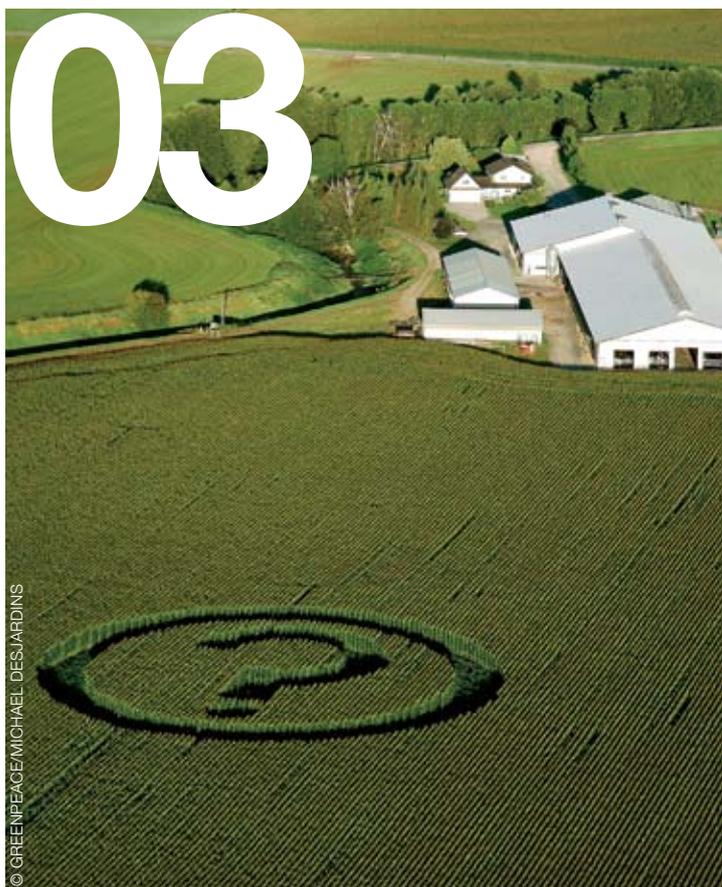


TO DISQUALIFY the maize production (2007 agricultural season) from the fields that are the subject of the sample with CAEE reference No. 087/07/DON, by operator AR-0214/PE, Mr. MARIANO JIMINEZ LAZCORRETA, from the qualification “Reconversion – Year 0,” due to the presence of GM plant material in the sample.

Summary - Table of Economic Consequences

Disqualification and Sale on the Conventional Market	Price that would have been received on the organic market: 39 cents/kg		
		8,000 kg/ha x 7.7 ha x 17 cents/kg	9,520 €
Directly Attributable Economic Loss	Price on the conventional market: 22 cents/kg (17 cents/kg less)		
			9,520 €

Maize grower afraid of the consequences of speaking out



“It bothers me to speak in public about my contamination. The environment in the agricultural sector is tense and it is not easy to criticise the GM multinationals.”

Name

Anonymous

Region

Monzón (Huesca)

Maize surface area

3.7 ha in the year 2007

Some of the farmers we spoke to prefer to remain anonymous; afraid to express their rejection of GM crops due to possible ramifications in their rural environment. This is despite the fact that they are victims of genetic contamination.

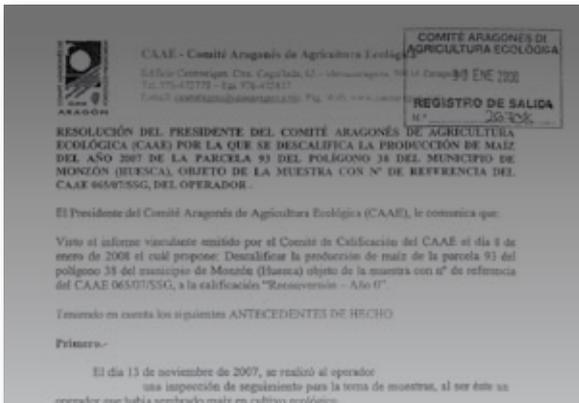
Damage and consequences of GMOs

This case is similar to other testimonies: the harvested crops of this producer, who was using a certified organic hybrid seed, were contaminated by GMOs. Disqualification forced him to sell his entire crop on the conventional market at a much lower price. His estimate is 14,000 kg sold at between 14 and 15 cents/ kg less than with organic certification.

To protect his anonymity, he did not want to speak publicly about planting dates or other specifications.

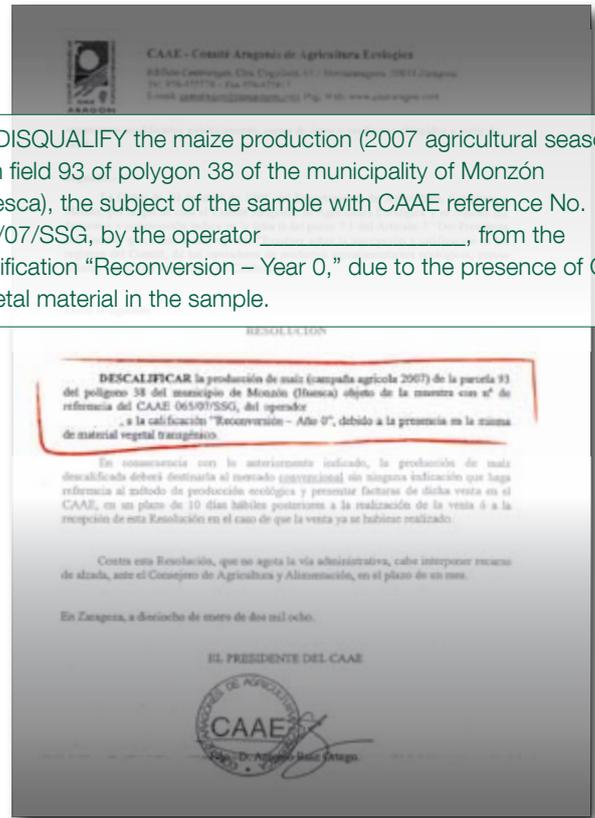
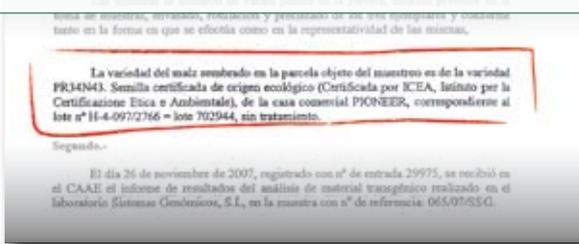
Summary - Table of Economic Consequences

Forced Planting Date	Estimate: 3,000 kg/ha	3,000 kg/ha x 3.7 ha x 36 cents/kg	3,996 €
Disqualification and Sale on the Conventional Market		14,000 kg x 15 cents/kg	2,100 €
Directly Attributable Economic Loss			6,096 €



TO DISQUALIFY the maize production (2007 agricultural season) from field 93 of polygon 38 of the municipality of Monzón (Huesca), the subject of the sample with CAAE reference No. 065/07/SSG, by the operator _____, from the qualification "Reconversion – Year 0," due to the presence of GM vegetal material in the sample.

The variety of the maize planted in the field subject to the sampling is the PR34N43 variety. Seed certified as organic in origin (Certified by the ICEA, Institute for Ethical and Environmental Certification), of the PIONEER company, corresponding to lot No. H4-097/2766 = lot 702944, untreated.



GREENPEACE/MARTIN LANGER

image Direct actions by Greenpeace in a field of genetically modified maize

Organic livestock producers can't buy feed in their own country



image View of facilities of the company during a Greenpeace visit to verify the GM situation in Aragón

“It is a disaster that it is practically impossible to find organic maize in Spain. But we know what is happening here is reversible. We hope GMOs never go into other grains... or we will run the risk of closing down.”

Name

Faustino Cirugeda

Company

Garte Ganadera S.L.

Activity

Production of organic feed and organic pork livestock

Area

Fuentes Calientes (Teruel)

The Garte Ganadera company produces 3,000 organic hogs annually to make Teruel Ham. This farm has a special *Denomination of Origin* certification, which certifies that the product is genuine Teruel Ham, cured in the traditional way. This Spanish certification scheme is similar to those in France, Italy, and Greece designed to protect local food production.

In total, Garte Ganadera produces four million kilos of feed, of which half a million is maize and the rest is barley, soya, wheat and other vegetable crops. The farm itself requires close to one million kilos of feed, so it needs to buy in an extra half-million kilos. The rest of the produce is provided to other organic farms.

However, in 2007, it was only able to purchase 2,000 kg of organic maize uncontaminated by GMOs within Spain, so the rest had to be imported, from Eastern France, in this case.

Damage and consequences of GMOs

The company's estimated additional cost to buy organic maize in France was about 12 cents/kg of maize. This is because it needed extra transportation and there was a higher price at the source, among other factors. The losses are **€60,000 annually**. Costs not included in this calculation are increased administrative complexity to obtain extra suppliers of organic grain, incremental increases in logistics, and greater management problems.

History of hectares and contamination cases in Aragón

	ha organic maize	% of positive samples
2004	120	100
2005	37	40
2006	41	30
2007	42	75

Source: CAAE



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“Organic agricultural and livestock production should be protected. It is imperative that no one plants GM crops within a wide distance around organic crops. It is impossible to believe that both can co-exist.”

Summary - Table of Economic Consequences

Unavailability of organic maize of Spanish origin	Additional cost: 12 cents/kg	500,000 kg x 12 cents/kg	60,000 €
Directly Attributable Economic loss			60,000 €



© GARTIE GANADERA

An organic farmer risks contamination again, after big losses



“What I am doing is a much more natural farming for my own needs and to be honest with myself. But due to the high uncertainty and the possibility that I’ll be contaminated by GMOs, I am constantly running the risk that my buyers will end up taking me off the market.”

Name

Eduardo Campayo

Area

La Casa de la Balsa Farm, Municipality of Albacete (Albacete)

Crops

140 ha irrigated (alfalfa, peas, wheat, potatoes, garlic) and 60,000 wine grapevines

Surface area

2 ha of organic maize in 2006

The Campayo family started their switch to organic farming 12 years ago. Eduardo says *“I believe in it because conventional farming doesn’t meet my needs. For example, in alfalfa, I have witnessed up to six treatments with chemical products; while in organic farming, I gave zero treatments in five years of planting, and the crop is magnificent.”*

Eduardo supplies maize to the Panadería Rincón del Segura company, which produces and purchases organically-grown grains for their flour and organic breads that are distributed all over Spain. In 2006, he planted two hectares of organic maize. Eduardo harvested at the end of the year and sold the crop in January 2007 to Panadería Rincón del Segura. However, when Sohiscert, the certifying agency, analysed the samples taken during a periodic inspection, they detected the presence of GMOs in the family’s produce. Because of this, Rincón del Segura, the customer, had their certification revoked. This halted the distribution of their products. In the end, they had to return a total of 7,014 kg of maize and 604 kg of flour and gofio flour to the farmer.

Damage and consequences of GMOs

Because of the contamination, the merchandise had to be collected and sold on the conventional market at 12 cents/kg less than the organic variety, a significant financial loss.

To “escape” the pollen from GM crops planted in the province Eduardo’s strategy is now to plant the maize one month later. Therefore, he plants maize with a shorter cycle, which has a lower yield. In 2007, his production dropped from 12,000 to 9,000 kg per hectare.



Another “self-protection” strategy is for the farmer to take samples and to make his own analyses. In this case, Campayo took five samples: two from the plant material of neighbours who grow maize within a 500 metres radius to verify that it is not genetically modified, and one from his crop before harvest (so that in the case of contamination, to show that it did not come from residue in the harvester); one from the harvest after having gone through the harvester and a final one after the dryer. Eduardo says *“I bear the entire cost of these measures, not the owners of the GM technology - the victim is the one who pays.”*

“Organic maize may disappear due to GMOs. My experience with maize is that the pollen travels more than the studies say and the maize is contaminated much more than it is stated in the legislation. In my case, the closest maize is 500 metres from my plot of land, it is not GM, and nevertheless, I am contaminated... it’s clear that it’s coming from much farther away.”

Eduardo Campayo on contamination and traditional farming...

“In 2008, I’ll grow maize again. I’ll grow about 31 hectares (grain maize for flour, feed maize, and sweet corn to be frozen). I know that there is a possibility that I’ll be contaminated again, it is a high risk because there is a major financial expense and many people and companies will base a large amount of their money on my grain being free of GMOs. If my maize is contaminated this year, the crop would disappear permanently. I would feel very sorry for my customers, who depend on me to a large extent.”

“According to the slogan “think locally”, I can demonstrate that organic farming is not unrealistic, it is a profitable business. However, I am obligated to be a better farmer than a conventional farmer and to draw from popular wisdom because I don’t use certain tools and because public investment in experiments for organic farming is infinitely smaller than it is for conventional or GM farming.”



An organic farmer risks contamination again, after big losses

The disqualification of the harvest also meant that Eduardo lost the Common Agricultural Policy (CAP) subsidy of € 300 per hectare.³

Summary - Table of Economic Consequences

Forced Planting Date	Estimation: 3,000 kg/ha	3,000 kg/ha x 2 ha x 26 cent/kg	1,560 €
Disqualification and Sale on Conventional Market	Price that would have been received on the organic market: 26 cents/kg	9,000 kg/ha x 2 ha x 12 cents/kg	2,160 €
	Price on the conventional market: 14 cents/kg (12 cents/kg less)		
Sample Taking and Analysis	5 samples. Average price of Each Analysis: 250 €	5 x 250 €	1,250 €
Withdrawal of Subsidy	300 €/ha	2 ha x 300 €/ha	600 €
Directly Attributable Economic Loss			5,570 €

If this contamination happens to Eduardo again, his losses will be much higher, because of higher prices for organic and conventional products in 2008 and the greater amount of maize he will have planted that year.

Summary - Table of Economic Consequences with Current Price Levels and 2008 Surface Area

Forced Planting Date		3,000 kg/ha x 31 ha x 33 cents/kg	30,690 €
Disqualification and Sale on Conventional Market	Price that would have been received on the organic market: 33 cents/kg	9,000 kg/ha x 2 ha x 12 cents/kg	2,160 €
	Price on the conventional market: 25 cents/kg (8 cents/kg less)		
Sample Taking and Analysis	8 samples (an increased number of fields) Average price of each analysis: 250 €	8 x 250 €	2,000 €
Withdrawal of Subsidy	300 €/ha	31 ha x 300 €/ha	9,300 €
Directly Attributable Economic Loss			64,310 €

As can be seen, a medium-sized farmer cannot bear these costs. In addition, none of these figures reflects the anguish caused by the companies that sell GM seeds. They also do not reflect the costs and the enormous disruption caused by having to collect the contaminated merchandise and place it on the market again.

³ Farmers undertaking agro-environmental practices can receive economic assistance because their activities are more demanding and subject to more requirements than usual. In the case of agro-environmental assistance to organic farming, one of the common agreements in the various Autonomous Communities is:
 -to strictly comply with the rules for organic production in Regulation 2029/91;
 -to comply with the provision in the generic and specific rules for organic farming for the various crops approved by the various Autonomous Communities.
 -to sell a specified percentage of the production on the organic market.
 Therefore, if the harvest of an organic producer is contaminated by GMOs, the producer cannot meet the requirements of sale, therefore, assistance is withdrawn from the producer unless the Autonomous Community has demonstrated that the producer has been a victim of contamination.



GMO locations kept secret while organic producers pay the price



“Our company emerges from the philosophy of Gandhian non-violence. From respect for all living things. And that is exactly the opposite of what genetically modified organisms do.”

Name

José-Luís Sánchez

Responsibility

Secretary of the Panadería Rincón del Segura and Spokesperson of the Operators Association

Company

Panadería Rincón del Segura

Business Activity

Production and purchase of organically grown grains, flour milling and organic baking

Area

Villares, Elche de la Sierra (Albacete)

Rincón del Segura began as a family-owned company. As it grew, it created jobs, employing rural women in a depressed social environment and created wealth while respecting the environment. It is a good example of a profitable organic agriculture venture; in 2007, its sales totalled €1,183,000.

In early 2007, the company purchased a portion of the maize planted and harvested in 2006 from the Campayo family. On purchase, the maize came with the updated certification of organic produce. However, in March 2007, the annual inspection by Sohiscert at Rincón del Segura detected contamination by GMOs in that portion, which disqualified the bakery from selling any maize derivatives for the whole year.

Damage and consequences of GMOs

As a consequence of these facts, Rincón del Segura:

- Stopped selling all products derived from maize (flour and gofio flour).
- Communicated to customers that it suspended the sale of these products due to the result of the analysis until it could obtain raw ingredients without traces of GMOs.
- Returned all of these products to the farmer, leaving customers without a supply, and causing significant financial damage to the company and to its reputation.

GMO locations kept secret while organic producers pay the price

Summary - Table of Economic Consequences

Sales that did not occur	7,618 kg x 1.55 €/kg x 30 %	3,542 €
Directly Attributable Economic Loss		3,542 €

José-Luís Sánchez on contamination, equity and transparency...

“As farmers and makers of organic products, we feel completely unprotected and we feel that we are treated unjustly and unequally, because we have to comply with strict rules with numerous administrative procedures in order to carry out our work. This is at the same time that GM companies and producers are allowed to contaminate our fields and food without cost, even when the majority of consumers, if they were informed, would choose conventional or organic food before GM food.”

The amount of the economic loss is calculated based on expected sales: 7,618 kg of flour at €1.55 per kg, with a 30% profit margin. NOTE: For Rincón del Segura, maize constitutes only 2% of the total volume of grain they manage; there would be a much higher economic risk if one day a genetically-modified wheat is approved.

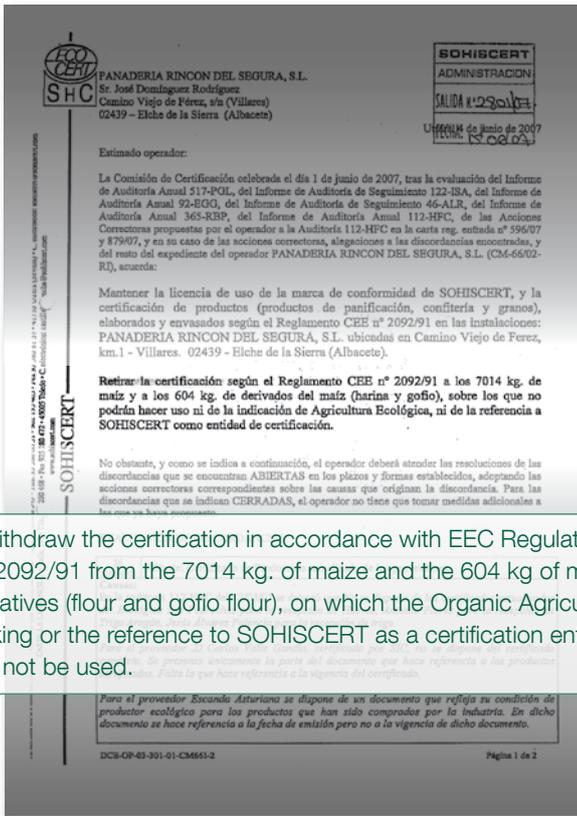
It is impossible to place a value on the damage to reputation, when customers changed suppliers after Rincón del Segura was left without any merchandise.



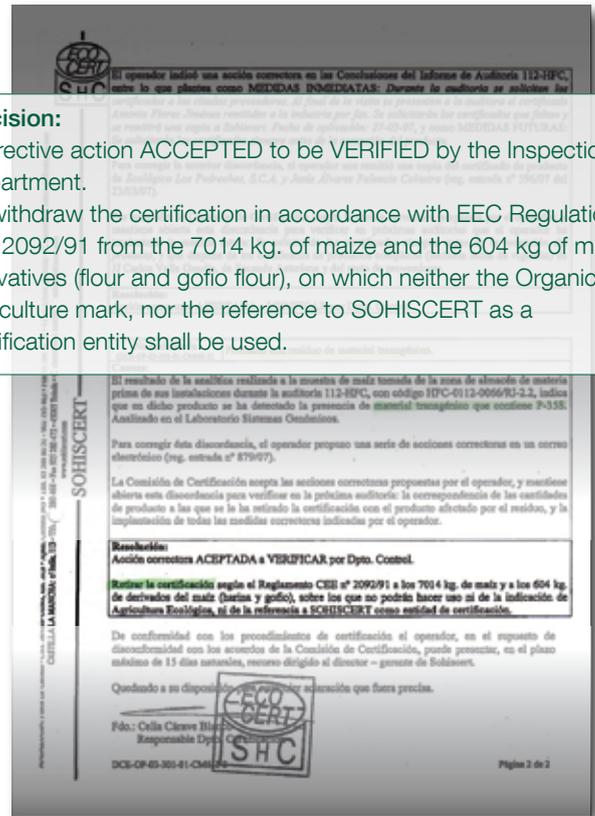
“We are asking public entities and political officials for Agriculture and the Environment to conduct an in-depth study of these cases to determine liability and to apply the polluter pays rule. In addition, they must promote public access to data on distribution and location of GM seeds and must urgently promote a moratorium on licenses and field trials for new GM seeds.”



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To withdraw the certification in accordance with EEC Regulation No. 2092/91 from the 7014 kg. of maize and the 604 kg of maize derivatives (flour and gofio flour), on which the Organic Agriculture marking or the reference to SOHISCERT as a certification entity shall not be used.



Decision:
 Corrective action ACCEPTED to be VERIFIED by the Inspection Department.
 To withdraw the certification in accordance with EEC Regulation No. 2092/91 from the 7014 kg. of maize and the 604 kg of maize derivatives (flour and gofio flour), on which neither the Organic Agriculture mark, nor the reference to SOHISCERT as a certification entity shall be used.

“Organic maize crops are disappearing due to farmers’ fear that their maize crops will be contaminated by GM material, which causes losses to the farmer. While the amount of other organic crops are increasing, a crop such as maize, which is essential for food companies and for organic livestock production, continues to decrease, so that they will have to rely on imports.”

“Co-existence without contamination is impossible, as demonstrated by the cases of contamination that occurred in our country and abroad. This clearly shows the absence of legal mechanisms that protect citizens and the attitude of the European Commission against transparency, democracy, and the precautionary principle, which promotes the interests of the large companies that produce GMOs.”

One farmer attempts “self-protection” against contamination

07



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“I won’t grow maize in 2008 because I’m afraid to be contaminated by GMOs. What makes me so sad, the most important thing I’ve lost, is the power to grow what I want, to make the right rotation. The freedom to grow my crops in peace.”

Name

Felipe Agustín Esteve

Area

Aguas Nuevas, municipality of Albacete of Albacete (Albacete)

Crop

16 ha organic crops, including 2.6 ha of maize in 2007

Felipe has been farming organically for ten years. In the 2007 season, he planted a type of maize that was certified organic, and at the end of the year he took his own sample (6-7 ears) to a supervising organisation he hired himself. He paid the costs for laboratory testing, and in January 2008, he received the response: MON 810 GM maize was present in his sample. SIC, the certifying agency, told him that his organic certification of the harvested crop was being withdrawn.

Felipe had planned to sell his maize to *Quesos Artesanos de Letur S.A.*, who make organic cheeses and milk products. Felipe’s farm usually provides 50% of the maize this company consumes. If they had bought and transported the merchandise before Felipe found out about the contamination, it would have been a commercial disaster.

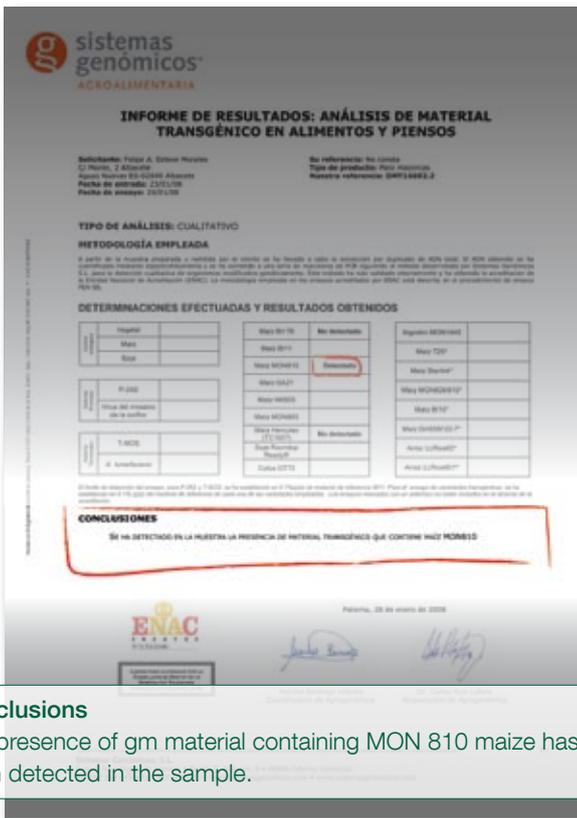
Damage and consequences of GMOs

Felipe carried out a series of actions that he calls a “self-monitoring programme” which are actually measures to minimise the risk of being contaminated. One of the measures is to plant the maize one month later to prevent his flowering from happening at the same time as the flowering of conventional maize. For this, he uses a shorter cycle (500), which reduces yields by at least 2,000 kg/ha. Another of the measures has been to install a physical barrier of pines trees next to the neighbour causing the contamination.

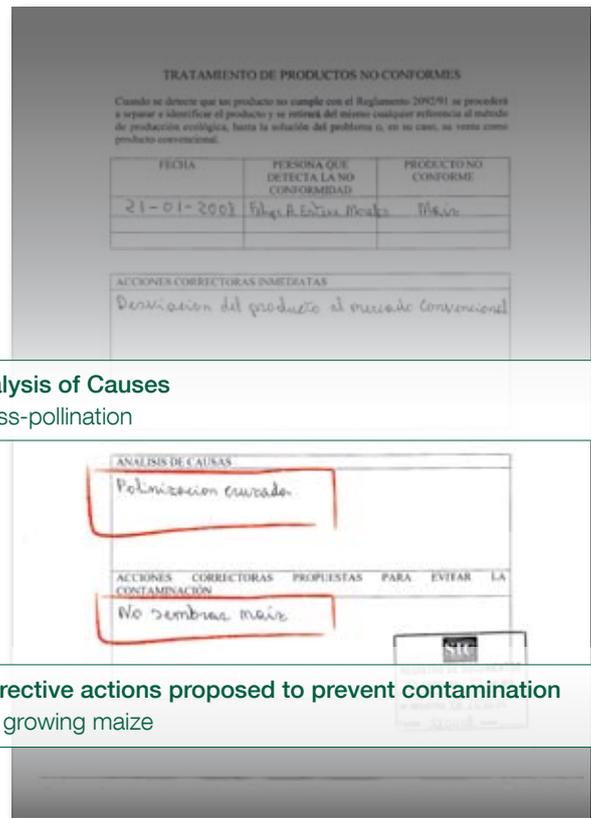
Even so, his crop was contaminated from a field that is 500 metres away. Felipe says that it is “a type of maize that is irrigated by sprinklers twice a week, so the pollen should be in the soil. That’s the proof that, no matter how much we try, the strength of pollen contamination from GMOs knows no limits.”

Another strategy was for Felipe to take samples and perform analysis on his own. In this case, it simply reduced the potential damage to his customer’s business, by catching the contamination in time, but Felipe still suffered financial losses. The disqualification of his harvest for sale on the organic market forced him to sell in the conventional market at 10 cents/kg less, and he lost the organic farming subsidy (CAP) of €300 per hectare.

image Label on a bag of maize seed indicating the organic origin of the seeds used (and therefore GMO free).



Conclusions
The presence of gm material containing MON 810 maize has been detected in the sample.



Analysis of Causes
Cross-pollination

Corrective actions proposed to prevent contamination
Not growing maize

Felipe Agustín Esteve on contamination and chemicals in farming...
“GMOs cannot be controlled. In my case, we’re talking about fields that are 500 metres away, when the prevailing wind in theory goes from my field toward the GM field. And the closest maize in the direction from which the wind comes is kilometres away...they still contaminated me that way.”

“When you don’t know the effects that chemical products have, you can apply them. But when you know, you have to be a hypocrite to keep on poisoning people.”

“The Ministry says that a few tens of metres are sufficient... it is absolutely a lie.”

One farmer attempts “self-protection” against contamination

Felipe Agustín Esteve on contamination and chemicals in farming..

“This must end now. It must be stopped for health reasons. The person who invented GM should have stayed quiet. Many terrible things are being done in the name of science.”

“I’m paying the cost and losses of this entire programme. There is no legislation that requires them to respect us, the people who are respecting the environment.”

“Suddenly, we have the grandiose belief that we are changing thousands of years of evolution using an immature, dangerous technology. This is an aberration.”

Summary - Table of Economic Consequences

Forced Planting Date		2,000 kg/ha x 2,6 ha x 31 cents/kg	1,612 €
Disqualification and Sale on Conventional Market	Price that would have been received on the organic market: 31 cents/kg		
	Price on the conventional market: 21 cents/kg (10 cents/kg less)	8,500 kg/ha x 2.6 ha x 10 cents/kg	2,210 €
Sample Taking and Analysis	Average price of each analysis: 250 €	250 €	250 €
Withdrawal of Subsidy	300 €/ha	2,6 ha x 300 €/ha	780 €
Directly Attributable Economic Loss			4,852 €

As in previous cases, this amount does not reflect the worry caused by uncertainty throughout the growing season, damage to reputation with customers, or the fact that GMOs have significant adverse impact on organic maize farming in the region.

Organic cheese maker has to reject local maize for animal feed



“Since 1990, we have made the commitment to produce cleanly, without toxic products or GMOs. Our commitment is to develop the area with added ecological and economic value. If the GMOs are not stopped, we will not be able to use maize, and that can affect our business.”

Name

Pablo Cuervo-Arango Lecina

Position

Manager and Partner

Company

Quesos Artesanos de Letur S.A. (Brand: El Cantero de Letur)

Business Activity

Manufacture of cheeses and milk products from cows, sheep, and goats

Area

Letur (Albacete)

The Quesos Artesanos de Letur S.A has € 2.1 million in sales annually, from a cattle farm and a cheese and yogurt plant. It gets milk from its own animals, and it also buys from four organic sheep and goat farms. The cows' diet is made up of half grain feed and half forage. Maize usually makes up 70% of the feed portion, so it is in total 35% of the cows' food.

In 2007, the company planned to purchase a portion of the maize production from Felipe Esteve (see previous story). However, this did not occur because Felipe's self-protection programme detected the presence of GMOs right before the sale. Pablo says *“If the sale had taken place, it would have been a disaster for our company.”*

Because it has become more difficult to find uncontaminated organic maize in Spain, and the French maize is much more expensive, the company was forced to modify the grain feed mix in the cows' diet (substituting a portion of the maize with barley and other raw materials).

Organic cheese maker has to reject local maize for animal feed

Damage and consequences of GMOs

At the end of 2007, French organic maize prices increased from 30 cents/kg to 50 cents/kg after shipping and unloading in Spain. Since consumption of maize by the company is 160,000 kg annually, this cost increased by €32,000. With an output of 370,000 litres of milk, the cost added on to the final product is 9 cents per litre, which is very high for a 60-cow farm.

In addition to this amount, the company pays for GMO detection analyses on all merchandise that enters its storage facilities. It has spent €800 this time alone.



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Summary - Table of Economic Consequences

Unavailability of Organic Maize of Spanish Origin	Organic maize in the surrounding area at 30 cents/kg		
	French organic maize: 50 cents/kg	160,000 kg x 20 cents/kg	32,000 €
Sample Taking and Analysis			800 €
Directly Attributable Economic Loss			32,800 €

Consumer association struggles to provide peace of mind



“We want to eat healthy food and to protect the environment. But at the same time we’re at the end of the chain and we suffer from the problems caused by GMOs, because there is no supply or because the producers’ prices are higher.”

Name

Fernando Llobell

Position

President

Company

Albacete La Tierrallana Association of Organic Consumers and Users

La Tierrallana is an association of consumers of organic products that defends the interests of consumers and users in the organic and environmental sector. It is made up of 410 families who choose to feed themselves without GMOs. Because their sales are pre-determined, it means many farmers in Castilla la Mancha have a portion of their income guaranteed.

The association has received various awards including the Award for the Best Association of Organic Consumers in Spain and the Award for Sustainable Development of Castilla la Mancha. All the farmers and processors cited in this report are direct or indirect suppliers of La Tierrallana. Therefore, the association is also a victim of the presence of GMOs in Castilla la Mancha and of genetic contamination.

“It is dramatic that in a democratic country, the victims of contamination should pay the consequences for a situation caused by a multinational company whose only goal is to eliminate any type of non-GM alternative to food production.”

Consumer association struggles to provide peace of mind

Fernando Liobell on contamination and consumer protection...

“These new cases are added to the long list of contamination cases in recent years, and are especially significant because the Municipality of Albacete has been declared to be a GMO-Free Zone.”

(See attached box)



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GM-Free Zones in Europe

Resistance to GMOs on the European level is growing. Currently, more than 200 European regions or provinces and more than 4,500 local administrations have been declared GMO-Free Zones or have publicised their desire to limit these crops. Nine provinces in Austria and 54 Greek prefectures, for example, have indicated that they want to be free from GMOs or are passing laws to that effect. In Italy, there are more than 2,500 municipalities and 15 out of 20 regions now declared free of GMOs, covering practically the entire country. In France, more than 1,250 municipalities, 15 regions and 6 departments have made a declaration. In Poland, all regions have been declared free of GMOs.

GM-Free Zones in Spain

Autonomous Communities:

Asturias, Basque Country, Balears Islands, Canary Islands

Municipalities:

Andalucía: Almonte (Huelva), Pozoblanco and Montilla (Cordoba)

Asturias: Aller, Cangas de Narcea, Castropol, Penamellera Baja, Carreno, Riosa

Balears: Esporles, Manacor, Perreres

Canaries: El Rosario, Garachico, La Orotava, Arico, Los Silos, Tequeste, Buenavista, Icod de los Vinos y Granadilla de Abona (Tenerife), Galdar and Artenara (Gran Canaria), Puerto del Rosario (Fuerteventura), Yaiza (Lanzarote)

Cataluna: Rubí, Sitges, Vila Franca del Penedes, Mataró (Barcelona), Ripoll (Gerona), Valls, Uldecona (Tarragona), Preixens, Castellserà, Vilanova de Segrià, Balaguer, Ager (Lérida)

Castilla - La Mancha: Albacete, Casas Ibañez, and Villamalea (Albacete)

Castilla and León: Palencia

Galicia: Lalín (Pontevedra)

Murcia: Bullas

Navarra: Valle del Yerri

Basque Country: Arama, Itsasondo, Elgeta, Ikastegieta, Mutriku, Olaberri and Zalbidia (Guipúzcoa), Abanto, Amoroto, Arratzu, Aulesti, Balmaseda, Izurtza, Muskiz, Otxandio and Turtzioz (Vizcaya), Vitoria-Gasteiz, Valdegobia and Amurrio (Álava)

Insular Authorities:

Insular Council of Menorca, Insular Council of Mallorca

Insular Board of Lanzarote



GMOs destroying local 'food sovereignty'

10



"I farm organically because I believe it is what I must do. Until now, I was able to avoid GMO contamination, but in the end, what I had feared for years happened, what we all know happens with GMOs."

Name

July Bergé Armengoll

Area

Bellcaire de Urgell – La Noguera (Lleida)

Crops

50 ha irrigated in organic crops. Wheat, Maize, Alfalfa, Apple Trees, Pear Trees, others, livestock farm with 4,000 organic hens.

July Bergé has been farming organically since 1989. His farm was slowly transformed into an organic farm, becoming completely organic in 1996. At the end of the 1990s, there were between 30 to 35 hectares in rotation with other crops. Beginning in 2000, he started to become seriously worried about the increasing amount of GM maize in the area. Purchasers began to require GMO analyses, so he took on the costs of adapting to this threat by, for example, postponing planting dates by more than a month and a half.

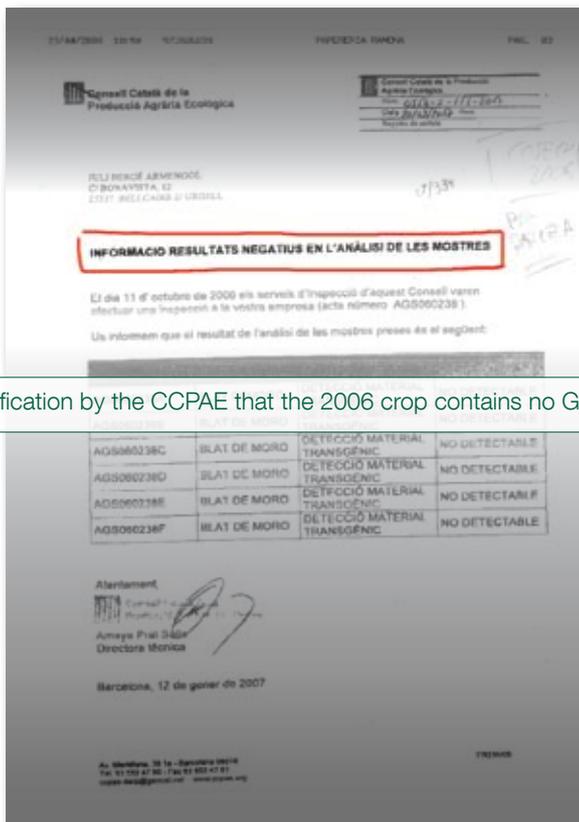
The loss of production due to this delay started to make a dent in his finances. One of the problems is that the insect called the "corn borer," which supposedly dies in contact with Bt GM crops, is now concentrated in the fields that do not produce this toxin, such as the organic fields. If organic or conventional maize is planted on the correct date and the crop is raised in rotation with other crops, these insects barely cause a problem. But when organic farmers postpone their planting date they become victims of the corn borer, which causes the most damage in early summer to newly sprouted and excessively fragile maize plants.

Consequently, he was forced to continue reducing the amount of maize planted. The following table shows, based on this farmer's example, the terrible disappearance of a crop that contributes great social and environmental value if raised correctly (in rotation with other crops and connected to sustainable livestock production).

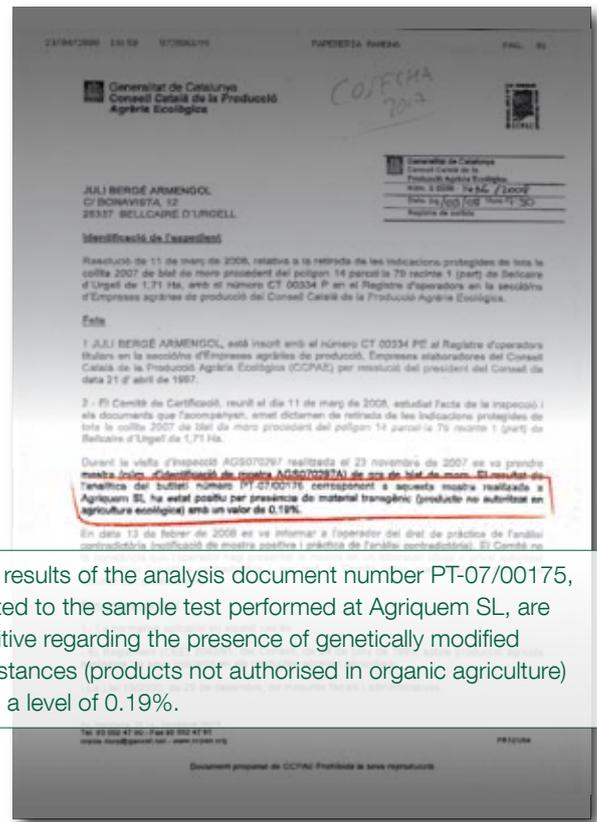
Decrease in organic maize cultivation by Bergé

year	hectares
Before 2000	>31
2001	30
2002	23
2003	20
2004	12
2005	10
2006	6
2007	1,7
2008	His intention is not to plant any hectares of maize. The cultivation of organic maize in his province will have disappeared.

GMOs destroying local 'food sovereignty'



Certification by the CCPAE that the 2006 crop contains no GMOs.



The results of the analysis document number PT-07/00175, related to the sample test performed at Agriquem SL, are positive regarding the presence of genetically modified substances (products not authorised in organic agriculture) with a level of 0.19%.

July Bergé Armengol on contamination and organic farming...
“With the problems GMOs cause, I would spend more money farming conventional crops and selling my produce on a market for contaminated raw ingredients. But, I know I’m not making a mistake by farming organically.”

In 2007, July Bergé received a visit from an inspector from the Catalán Organic Agricultural Produce Committee (CCPAE). This committee took an analysis of a sample and the result showed a percentage of GMOs in his harvest, so the CCPAE had to disqualify it as organic produce. July Bergé had to sell it on the conventional market.

The crop in question was a Catalonian variety of maize that had given good results in recent years. The planting in 2007 came from a

proportion of the 2006 seed, as is common practice with native varieties. This kind of seed saving is supposed to reduce farmers' dependence on seed companies. The 2006 crop had been certified by the CCPAE, as containing no GMOs. This indicates that the neighbouring crops managed to contaminate the maize during the growing season.

Damage and consequences of GMOs

By postponing the planting date until June, production dropped from 8,000 to less than 5,000 kg per hectare. July Bergé says “For maize, June is very late, any good farmer knows that. But I don't have any choice.” Planting this late in the season also assumes the risk of losing the maize subsidy. In 2007, yields were particularly poor, only 3,000 kg/ha instead of 5,000 kg/ha at harvest. Bergé calculates that overall the delayed planting date is responsible for a 4,000 kg/ha reduction.

The disqualification of his harvest for sale on the organic market forced him to sell on the conventional market at 9 cents/kg less. In addition to all of this, July Bergé had to buy 200,000 kg of French organic feed for his hens, half of which is maize. Each kilogram of



feed cost him 54 cents, while he could have made it himself for about 12 cents/kg less than that. In July Berge's own words *"It really hurts that I have to pay such prices when I could have made my hens' feed with my own maize."*

A few years ago, July Bergé rented his land so that seed-selling companies such as Pioneer could study the yields of conventional varieties. The company requested a distance of 800 metres between the fields and other varieties of maize in order to guarantee the purity of the variety. This raises serious doubts about the GM companies' claims for safe distances; in July Bergé's words *"How is it that now the same companies are saying that 25 metres is sufficient to prevent GM contamination? They should ask the GMOs to be placed at the same distance as they ask for to produce their seeds."*

Food Sovereignty is a concept proposed in 1996 by Via Campesina (The International Peasant Movement) as an alternative to 'food security', which is championed by large multinational companies. It defines food sovereignty as the right of peoples, countries, and state unions to define their own agricultural and food policy without the "dumping" of agricultural commodities into foreign countries. It refers to organising food production and consumption according to the needs of local communities, giving priority to production for local consumption. The Via Campesina movement says that landless people, peasants, and small farmers must get access to land, water, and seed as well as productive resources and adequate public services. It places food sovereignty and sustainability at a higher priority than trade policies.

Summary - Table of the Economic Consequences

Forced Planting Date		4,000 kg/ha x 1.7 ha x 30 cents/kg	2,040 €
Disqualification and Sale on Conventional Market	Price that would have been received on the organic market: 30 cents/kg		
	Price on the conventional market: 21 cents/kg (9 cents/kg less)	3,000 kg/ha x 1.7 ha x 9 cents/kg	459 €
Purchase of Hen Feed		200,000 kg x 12 cents/kg	24,000 €
Directly Attributable Economic Loss			26,499 €

Table of Economic Consequences. Scenario: year with normal production and the area of maize that had always been cultivated

Forced Planting Date		3,000 kg/ha x 30 ha x 30 cents/kg	27,000 €
Disqualification and Sale on Conventional Market	Price that would have been received on the organic market: 30 cents/kg		
	Price on the conventional market: 21 cents/kg (9 cents/kg less)	5,000 kg/ha x 30 ha x 9 cents/kg	13,500 €
Purchase of Hen Feed		200,000 kg x 12 cents/kg	24,000 €
Directly Attributable Economic Loss			64,500 €

As in the other stories, this purely financial valuation of the damage does not reflect the worry caused by uncertainty throughout the growing season, damage to reputation with customers, or the

possibility that organic maize farming may not be viable in the future due to the presence of GMOs in the region.

Conclusions

The stories told here lead again to the unequivocal conclusion that “co-existence” between GM and non-GM crops is impossible. This collection of testimonials confirms that:

- The economic costs of contamination and other problems caused by GMOs are borne by those affected and by civil society. Because there are no liability laws, the polluted has to pay, rather than the polluter.
- The social, environmental, and health impacts are potentially enormous. This is both by direct damage caused by GM technologies as well as the loss of real and sustainable solutions for agriculture and food, and the financial losses that GM contamination incurs.
- The culprits - the technology owners - are implementing a contamination strategy, while government agencies remain, in general, impassive. For example, the Ministry of Agriculture states that it has no record of contamination cases.
- Controls and monitoring of GMOs from the laboratory to the plate is ineffective, and in many cases, non-existent.
- There are no independent systems for detection and investigation of contamination cases or of the negative effects of GMOs. The great majority of contamination cases are never detected.
- Instead of defending the sectors most affected, such as the organic agriculture sector, or carrying out a serious, detailed analysis of the situation out in the fields, political officials are protecting the interests of the companies that sell GM seeds.
- In reality an exhaustive analysis and a real, rigorous oversight by the authorities would be a huge cost to the State, so GM technology is in fact non-viable from an economic point of view as well as for social and environmental reasons.

As these stories tell, the economic costs associated with contamination and the presence of GMOs in the region are paid by the victims.

- A lack of transparency is hiding the majority of the failures of GM crops and the scandals related to GMOs. However the industry itself only provides ‘spin’ - disclosing the alleged benefits of these crops without offering any objective and contrasted information. The single purpose of GM company communications is increasing its control over the agricultural and agrofood sectors.
- The GM industry is capable of influencing political authorities on many levels, so that its interests prevail over the environmental and society.
- States cannot prevent the violation of GM cultivation standards. In practice, it is impossible to prevent contamination of other crops. The seed industry’s strategy is to contaminate - creating an irreversible situation that eliminates any alternative crop and forces everyone to accept certain thresholds for the presence of GMOs.

While there is a worldwide trend to increase forms of agriculture that respect the environment, the amount of organic maize in Spain is being reduced at an alarming rate. The only reason farmers are abandoning their crops is the fear that they will be contaminated. The majority of the producers consulted say that they will not repeat it next year. This is a serious attack on the only real alternative to the dominant agricultural model, a potentially permanent social and environmental damage caused by GM.

In a world of rising global temperatures due to human-induced climate change, changes in rainfall patterns, and likely water shortages, the world needs sustainable agricultural approaches. Now is the time for governments and specialists to focus on developing technologies and policies compatible with environmental protection, safe and quality production, and fair distribution among all human beings.

Co-existence of genetically modified crops and natural varieties is still impossible.

Greenpeace would like to acknowledge the hard work and determination of many farmers, both men and women. We want to help improve the situation of people affected by multinationals who are spreading unwanted genes in rural areas. We are claiming the right for communities and producers to choose their crops and food freely.

image A GM maize field next to a non-GM field. As is often the case, they are separated by only a narrow gap.





GREENPEACE

Greenpeace is an independent global campaigning organisation that acts to change attitudes and behaviour, to protect and conserve the environment and to promote peace.

For more information contact
enquiries@int.greenpeace.org

JN 191

Originally published in Spanish, May 2008.
English Edition, April 2009
by Greenpeace International
Otto Heldringstraat 5
1066 AZ Amsterdam
The Netherlands
Tel: +31 20 7182000
Fax: +31 20 7182002