

# Impossible coexistence

short version



Seven years of GMOs have contaminated organic and conventional maize: an examination of the cases of Catalonia and Aragon.

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## Seven years of GMOs have contaminated organic and conventional maize: an examination of the cases of Catalonia and Aragon

### I. INTRODUCTION

In 1998, Spain approved the commercial cultivation of the first transgenic maize, the Bt 176 from Ciba Geigy (now Syngenta). Since then, Spain has been the only member state of the European Union to allow large-scale cultivation of genetically modified organisms (GMOs) until the year 2005, and has approved a large number of varieties of genetically modified maize Bt 176 and MON 810.

As from March 2004, the new government promised that norms would be established that would allow conventional agriculture and ecological agriculture to survive in the face of continued aggression from the transgenics corporations, promising the consumers' right to choose their food would be respected and the environmental impact of these crops would be minimised as far as possible. Although Spain's position in the European voting improved, the Government has continued to allow the cultivation of genetically modified maize about which doubts exist regarding its safety, and 14 new varieties have been approved.

This document seeks to show to public opinion what the real situation is regarding the cultivation of transgenics in Spain, and is a true testimony to the non-viability of the "coexistence" of genetically modified agriculture and other forms of agriculture. It is the result of thorough research in the field carried out in different districts of Catalonia and Aragon. Dozens of statements<sup>1</sup> have been taken from farmers, livestock owners and managers of cooperatives; samples from maize fields have been analysed, and it has been found that the Administration has no measures in place to ensure separation, segregation and control.



The situation we have encountered is one in which administrative mistakes exist in combination with opacity in the world of research, nil or inadequate monitoring and control of the crops and cases of contamination, illegal varieties, unauthorised experimental fields, absence of records, no respect for minimum distances between fields, false CAP (Common Agriculture Policy) administrative statements made to gain subsidies for growing maize, owners of harvesters who acknowledge that they do not clean the machinery between fields that are genetically modified and those that are not, and managers of cooperatives who admit that they mix everything together "in the same heap".

At the very time that the Catalan and national governments are looking at legislation for the inaptly named "coexistence" of transgenic with conventional and ecological agriculture, it is evident that the conditions do not exist that would allow the cultivation of GMOs in Spain. For this reason, and also because GMOs involve irreversible damage to the environment, the economy and to health, the central government and the administrations of the different areas and autonomous regions must urgently revoke the varieties approved to date and halt the cultivation of genetically modified crops in Spain.

Non-transgenic agriculture is being led into a crisis situation without precedent by the absence of standards to minimise contamination of fields and ensure segregation between crops, the absence of standards to ensure control and transparency, the lack of price differentiation and the lack of technical and human means to manage transgenics and their consequences.

With the means and resources available to the signatory organisations, which are insignificant compared to those of the government bodies, contaminated crops (both conventional and organic) have been found. Each of the cases is duly explained and put in the context of the scandals of previous years.

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<sup>1</sup> The names used in the text have been changed due to the need to conceal the identity of many of the people who have helped to make this report possible.

This demonstrates that "coexistence" is not possible, that contamination of crops is a fact, and that the strategy of the seed industry is to create contamination in order to bring about an irreversible situation that will eliminate any alternative crops and oblige society as a whole to accept increasing thresholds of GMO presence.

## **II. THE ATTITUDE OF GOVERNMENTS SINCE THE CULTIVATION OF TRANSGENICS IN SPAIN**

### **The role of the Popular Party (Partido Popular - PP) government since 1998: encouragement given to GMOs**

Some of the things that the Popular Party government has done since 1998:

- Given the green light for cultivation of 16 varieties of genetically modified maize.
- Delegated the design and execution of the plans for monitoring and controlling these varieties to the companies that sell them, failing to meet their obligation to protect public health and the environment by monitoring the impact of these crops. It has denied society information about these crops.
- It has allowed them to be grown in Spain without any measure to guarantee transparency and public information.
- It transposed a diluted version of the EU directive on voluntary liberation of GMOs into the environment 2001/18/CE<sup>2</sup>
- It has systematically denied the cases of contamination and attempted to charge the costs associated with contamination to the farmers that have suffered the contamination rather than the companies that caused it.
- It has proposed some measures for "coexistence" of genetically modified agriculture and conventional and organic agriculture that are designed to bring about irreversible contamination.
- It has defended the interests of the biotechnology industry in the voting that has taken place in the central bodies of the EU, jeopardising the future of conventional and organic agriculture in Spain and putting at risk the health of consumers and of the environment.
- It has ignored the voices that are critical of GMOs.



### **The government of the Spanish Socialist Workers Party (Partido Socialista Obrero Española - PSOE) since March 2004: more of the same from the Ministry of Agriculture**

With the arrival of the PSOE in government, a certain level of dialogue was established with the Administration. However, in spite of the affirmations contained in the PSOE's electoral programme and the investiture speech given by President Zapatero:

- There are 31 varieties of genetically modified maize that can be cultivated in Spain (due, among other things, to the 14 latest approvals granted by the Spanish government in July 2005).
- The surface area of GM maize has continued to increase up to this year.
- The system for segregation, traceability and labelling does not work.

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<sup>2</sup> Directive 2001/18/EC of the European Parliament and the Council, of 12 March 2001 on the Deliberate Release of Genetically Modified Organisms into the Environment.

- The experimental crops are characterised by an absolute lack of control and by the opacity of the authorisation procedures.
- Imports continue of millions of tons of maize and soya that are the result of the irreversible destruction of the environment and societies in countries such as Argentina, Paraguay or Brazil.

On a number of occasions in 2005, the Head of the Ministry for Agriculture, Fisheries & Food (MAPA) halted the Royal Decree on the "coexistence" of genetically modified and non-genetically modified crops as a result of the society's strongly expressed rejection of this. The said Crown Decree would have guaranteed irreversible genetic contamination intended to eliminate any possibility of developing non-transgenic agriculture. At the date of completing this report, some senior personnel in MAPA and the Ministry of the Environment (MIMAM) state that they are working on a new wording that is more in accordance with society's demands.

With regard to the position of the government in the context of the EU, it has at certain moments demonstrated glimpses of political will, as in the Council of Environment Ministers in June 2005 when the Spanish government voted against the proposal of the European Commission to lift the bans imposed by five European countries on specific GMOs, amongst which are Bt176 and MON 810. This decision - justified by the government by reference to the need for caution and the right of countries to decide - was greeted very positively by the social sectors concerned about this topic.

### **The new tripartite government of Catalonia: following in the wake of central government**

During the last years of the Convergence & Union (CiU) government, the policy pursued in the Autonomous Region of Catalonia was a copy of that of the Popular Party in government. As a result of this, the indiscriminate cultivation of thousands of hectares of genetically modified crops was allowed. With the arrival of the tripartite government, it was hoped there would be a change of course, especially as one of the members, the Iniciativa per Catalunya I Els Verds (ICV) had as a priority plank in its programme of government the declaration "Catalonia Free of Transgenics".

The reality, however, has been quite different. The Department of Agriculture, Livestock and Fisheries (DARP) has continued the policy of unconditional support of the GMO multinationals and has tried - so far without success - to take forward a decree of "coexistence", the draft of which is even more lax than that put forward by MAPA. In addition, the Government of Catalonia has not published the list of trial fields - in spite of multiple requests made by different organisations -, and this has given the GMO multinationals total impunity and freedom of action.

During 2005, as a result of pressure from citizens, the Department of the Environment has put forward the possibility of establishing a participatory discussion process about the question of "coexistence". But to date, DARP has not reacted publicly to this, nor has it defined dates or methodologies for putting it into practice.

### **Aragon, turned into Europe's leading area for the production of GMOs in Europe**

In the Autonomous Community of Aragon, the major political forces have not opposed this type of crop. Both the Popular Party and the Party of Aragon (PAR) have promoted a type of agriculture that is productionist and unsustainable. The attitude of the Socialist Party (PSOE) that is responsible for the Department of Agriculture & Food, can best be described as lukewarm, it tolerates the situation. As regards the Party of Aragon (CHA) and the United Left (IU), although their position is anti-GMO, they have not done any work clearly opposing these.

The districts with the largest production of GMOs are Los Monegros and Cinco Villas, both situated within the geographical area or zone of influence of the Valley of the River Ebro.

### **III. THE NUMBERS GAME IN RELATION TO AREAS OF GMOs**

Since 1998, due to promotion by the previous Popular Party government, the area of GMOs in Spain has been continuously increasing, although 2005 is the first year in which it has not increased in comparison with previous years. However, the Spanish government still does not offer clear figures resulting from a detailed analysis of these dangerous crops, and the figures quoted by the ministries vary considerably depending on where and when they have been presented. There is even still inconsistency in the figures put out for 2004.

If this juggling of numbers happens for a crop that was harvested more than one year ago, one can expect even greater discrepancies to exist in the 2005 figures, although the politicians responsible continue to state that everything is under control, that "coexistence" is possible, and that there is absolute traceability from the field to the plate. In the document from the Ministry of the Environment (MIMAM) dated October 2005<sup>3</sup>, it states that in 2004 "some 60,000 hectares" were grown, and in 2005 "the figure could reach some 50,000 hectares". Leaving aside the lack of precision in the wording, in absolute terms, and given that the total area of maize in 2005 fell significantly due to the lack of water, these figures suggest that the GM maize has remained at about 12% of the total amount of maize. Notwithstanding the above figures, on 22 September of last year, a representative of the Spanish government at the EU stated that in 2005 the amount of GM maize grown in Spain was 57,000 hectares.



Area of genetically modified maize in Spain, in hectares.

<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
22.468	25.072	26.964	11.598	20.992	32.248	58.200 <sup>4</sup> to 60.000	50.000 to 57.000

The figures for 1998 to 2003 are taken from data compiled by Greenpeace from the figures received in February 2004: "Sales of seeds in the years 1998, 1999, 2000, 2001, 2002 and 2003. The Agriculture and Food Secretariat, Spanish Office of Vegetal Varieties, MAPA".

#### **The situation in Aragon**

Aragon is the Spanish autonomous community that has the largest number of hectares of genetically modified maize, as well as the greatest proportion in relation to the total area of maize. It is therefore the European region having the most GMOs. The districts where almost all the GM maize is grown are Los Monegros, Cinco Villas, Bajo Cinca, Bajo Aragón and Zaragoza.

It is extremely difficult to obtain data about areas, and therefore we only have only unofficial estimates. In 2005, taking the province as a whole, the percentages were around 50%, with between 30,000 and 40,000 hectares planted, in the areas with the greatest quantity of maize, the percentages exceeded 80%.

#### **The situation in Catalonia**

Catalonia is the autonomous community that has the second greatest percentage of genetically modified maize. Although in global terms the percentage was 42% in the year 2005, with 17,170 hectares, this

<sup>3</sup> "GMO, the situation in the EU and Spain" provided by the Ministry of the Environment to the Environmental Advisory Council (Consejo Asesor de Medio Ambiente - CAMA) on 20 October 2005.

<sup>4</sup> Verbal communication made by José Ignacio Ortega Molina, responsible for the Spanish Office of Vegetal Varieties, in the debate "Coex between GM and non GM based agricultural supply chains", Montpellier, 15 Nov 2005.

proportion increases considerably – as much as 60% - in the maize-growing areas of Lleida (Segrià, Noguera and Pla d'Urgell).

At the same time, Catalonia has become the main nucleus for experimentation in GMOs. In the past 4 years more than half the experimental crops grown in Spain have been in this autonomous community. This trend has been on the increase up to 2005, when 83% of the experimental fields authorised in Spain were located in Catalonia, thus reflecting the increasing influence of the biotechnology sector in Catalonia.

## **IV. THE HISTORY OF Bt 176 IN SPAIN** **Prohibited and cultivated?**

The commercial cultivation of GMOs reached Spanish agriculture via an Order from the Ministry for Agriculture, Fisheries & Food in March 1998, authorising the two first varieties of genetically modified maize, Bt 176: Compa Cb and Jordi Cb from Ciba Geigy, now Syngenta.

The use of the Bt 176 varieties can:

- affect the insect population in the surrounding area
- affect the use of ampicilin and other related antibiotics, as a result of the use of antibiotic resistant marker genes (this has been roundly condemned by organisations like the UN Food & Agriculture Organisation, the Royal Society and the Pasteur Institute, who are concerned that these genes can create resistances in micro-organisms and create health problems in humans and animals).
- generate resistance in pests such as the European corn borer<sup>i ii</sup> (this was anticipated: The United States Environmental Protection Agency, EPA, withdrew the Bt 176 varieties from the list of registered genetically modified products in October 2001 because they presented a risk of the appearance of insect resistance<sup>iii</sup>)

Neither the decision taken by EPA, nor the proven impacts on the environment of these crops prevented the Spanish government from authorising new Bt 176 varieties almost a year and a half after this evidence appeared.

In April 2004, the European Food Safety Agency (EFSA) had made public a report that recommended prohibition, from January 2005, of the cultivation of specific GMOs, amongst which was Bt 176<sup>iv</sup>. A few days later, the Spanish Food Safety Agency (AESAs) published a press release announcing that from 1 January 2005 the sowing of Bt 176 maize would be prohibited within Spanish territory<sup>v</sup>.

In spite of all this, the government opted to allow the sale of seeds of Bt 176 maize in 2005, and did not even take special measures for its cultivation and subsequent sale. In spite of repeated questions directed in writing to the Ministry of Agriculture, Fisheries & Food (What quantity has been sown? Where? Is the government intending to carry out any special checks on the crops harvested from these fields? Will this maize end up in the food chain?), no reply whatsoever was received.

In July 2005, the Ministry of Agriculture, Fisheries & Food published an Order that determined that the varieties containing the Bt 176 event were excluded from the Spanish Register of Varieties; that is, henceforth, they could not be planted. By taking this decision, MAPA, which had allowed the cultivation of Bt 176 in 2005 and in no instance refers to the process of eliminating the thousands of hectares already sown, implicitly conceded legal cover for the cultivation of these varieties during the months prior to revoking their registration in the Register, paying no heed to the many scientific recommendations and standards.

In Catalonia, as has been acknowledged by a technical specialist from DARP, Xavier Ferrer, in a statement made in October 2005, 928 hectares were sown with Bt 176 varieties in 2005.

The following is an example in the municipality of Els Arcs (Lleida), on the Belvis road. The field can be seen on the right of the photograph, and was analysed firstly using a quick test: the positive (double

stripe) in the leaf and negative (single stripe) in the cob clearly shows that this is a Bt 176 variety, because this type of test reacts to the presence of the protein Cry1Ab produced by the Bt 176 and MON 810 varieties, but only in the case of the Bt176 varieties is this protein found only in the green parts (and not in the cob). This result was later confirmed by a laboratory analysis.



## **V. MON 810 VARIETIES: WALKING A TIGHT ROPE**

In February 2003, the government of the Popular Party approved the first 4 varieties of MON 810 (another type of *Bt* maize, patented by Monsanto, which charges rights for the sale of the varieties containing it) and one year later proceeded to register another seven. In July 2005, when the Socialist Party was in government, MAPA approved a further 14 varieties. Consequently, including the 6 that had been in the European Catalogue since 2005, there are now 31 varieties of this GM maize that can be sown in Spain. Social and environmental organisations have on several occasions asked the government not to authorise new MON 810 varieties and to prohibit those previously approved, justifying their rejection to the MON 810 event and the varieties containing it with the following arguments:



- This event was approved by the EU in 1998 under Directive 90/220/EC, whose obligations in relation to risk assessment and monitoring were very limited compared to the requirements of Directive 2001/18/EC that is currently in force. The risk analysis of MON 810 maize did not include fundamental aspects such as the long-term effects on human and/or animal health or the indirect or deferred impacts on the environment, as required by Directive 2001/18/EC.

- There are worrying similarities between the Cry1Ab protein produced by the MON 810 and the Cry9C protein of StarLink maize, which presents characteristics that are potentially allergenic.

- As regards the monitoring plan, the only one available at a European level is a document that was issued by Monsanto in 1995 when the company applied for the commercialisation permission, and there has been no update since that time, even when the European Commission decided to register the varieties of MON 810 maize approved in Spain in the Common Catalogue of Varieties of Species of Agricultural Plants. This monitoring plan does not cover any of the scientific questions that have been the subject of discussion since this maize was approved in 1998 and which according to Directive 2001/18/EC should be taken into account, including the structure of the genome after the integration of a foreign gene, the risks to non-objective organisms, the changes in the secondary metabolic routes of the plants and the excretion and edaphic accumulation of the toxin Bt.

-Several countries in the European Union, particularly Austria and Hungary, argue that the national protective measure prohibiting the cultivation of varieties of MON 810 maize must be maintained at least until a full risk assessment and exhaustive monitoring plan are available. In the European Council of the Environment, on 24 June 2005, Spain voted against lifting these "moratoria". In line with this position, the Spanish government can and must apply, in its national territory, the same principle of precaution outlined at the time of the said vote and opt politically for the prohibition of all GM varieties across the board, and MON 810 specifically.

## **VI. Where are the registers?**

The European Directive on deliberate release of GMOs into the environment established as early as 2001 that "the member States will create registers in order to record the location of GM crops [...] their purpose, among other things, is to enable the monitoring of potential effects of the said GMOs on the environment...". It also establishes that the said registers should be made available to the public. Consideration must be given to the right of all citizens, not only farmers, to know the location of genetically modified crops in order to be able to watch for (and avoid) potential health problems.

This obligation was taken up by Lawt 9/2003 that transfers the above-mentioned Directive into national legislation, but in Royal Decree 178/2004 that develops the said Law, this obligation is only transferred in part because it establishes that the only information that must be recorded is the distribution of the GM crops by autonomous communities or provinces. The information regarding the area sown with GMOs on such a general scale is of little use to achieve monitoring as required by the legal standards, and furthermore the register has not been made public.

As regards the creation of a more detailed register as introduced in MAPA's projects on "coexistence", predictably, the mechanism to create the said register will be via the Common Agricultural Policy (CAP) declaration for payment of subsidies, which is the only document available to the government in which the plots belonging to each farmer and the type of crop are detailed. It is therefore essential that the government makes field checks to ensure that the variety declared in the CAP matches the variety sown.

Given that there are serious doubts about the technical and human capacity to make such checks, and given the high cost of analyses, it is necessary to guarantee the existence of the following:

- a specific register, the accuracy of which is guaranteed by a system allowing statements to be checked against reality.
- a system of sanctions applicable to those guilty of irregularities.
- the register of GM plots should be public and easily accessible.
- notification of the intention to sow genetically modified crops both to farmers with neighbouring land, and to farmers whose land is near to the plot intended for the GM crop.

During the writing of this report, it has been confirmed in the field that certain plots of maize marked as non-GMO are in reality just that. See below two examples from which the exact location of the plots has been omitted to protect those personally implicated.

Municipality	Location	Variety recorded in the CAP	Actual results of analysis
Peñalba (Huesca)	Area 502.	"Juanita"	Variety MON 810.
Candasnos (Huesca)	Area 814.	"Other varieties not included in the CAP"	Variety Bt 176.

## **VII. SEGREGATION, TRACEABILITY, LABELLING**

### LABELLING AND TRACEABILITY. IMPROVEMENT ON PAPER BUT NOT IN PRACTICE

In April 2004 the deadline was reached for application of the new European legislation on labelling and traceability<sup>5 6</sup>, which was much more demanding than what had existed previously. According to these regulations, it is obligatory to label all foods or animal feeds that are GMOs, or contain GMOs or have been produced from them. This labelling was to be based on a new system of traceability, that is "the capability to follow the trace of the GMO and the products produced from GMOs throughout the length of the production and distribution chain in all phases of its commercialisation".

However, despite these improvements the labelling system still leaves a lot to be desired. Firstly, because derivatives from animals fed with GMOs (meat, milk or eggs) are not labelled, although the majority of GMO crops are at present destined for animal feed.

Secondly, because in general the administrative bodies have not put in place a proper and efficient system that guarantees labelling and traceability, that is, a system that would establish the administrative processes to allow all importers, food and animal feed producers, distribution chains (supermarkets, etc.) to offer guarantees of the traceability of their products.

### BLIND SOWING

In many cases the commercial houses mislead those who buy their products and therefore the farmer often purchases a specific type of seed without knowing whether or not it is genetically modified. In the catalogues and publicity from these companies, the mention of words such as "transgenic" or "genetically modified organisms" are avoided. Phrases like "Bt technology", "maize protected against European corn borer", "*yieldguard* technology" are used, words that are only the best informed farmers will identify with GMOs.

### NON-EXISTENT DISTANCES

As regards the coexistence of transgenic and non-transgenic fields, it is alarming to see the ridiculous distances at which the different types of crop are planted. We cite here just three examples of the many that we have encountered in the course of the campaign.

1. This case involves two plots situated in the municipality of Valcabrera (Huesca). The plot that appears on the left of the river is genetically modified maize MON 810. The plot on the right of the river is a conventional variety. The distance between them is 19 m and the prevailing wind in the area blows in a direction perpendicular to the line that separates them and therefore the contamination of the conventional maize by its neighbour is practically guaranteed.

<sup>5</sup> Regulation (EC) No. 1829/2003 of the European Parliament and the Council of 22 September 2003 on Genetically Modified Food and Feed.

<sup>6</sup> Regulation (EC) No. 1830/2003 of the European Parliament and the Council of 22 September 2003 concerning the Traceability and Labelling of Genetically Modified Organisms and the Traceability of Food and Feed Products produced from these, and amending Directive 2001/18/EC.



2. This case involves two plots separated by a narrow road, the A125, that links Ejea de los Caballeros and Tudela. The photo was taken at the crossroads at Sta. Anastasia. On one side, the variety DKC6041, one of the MON 810



maizes from Dekalb (Monsanto) approved in July 2005 (therefore after this plot had been sown in April) and on the other side of the road (5 to 7 metres away) the conventional variety, "lagarto".

3. This example is situated in the municipality of Vallfogona de Balaguer (Lleida) and is especially revealing: The field on the left is a conventional variety from a known farmer, while the variety on the right (the owner of which is not known) is a genetically modified variety. The distance between both plots is less than 2 m.



### CONTAMINATION DURING HARVEST



The harvest of the maize is usually carried out by companies that the farmers contract specially for the purpose. It is obvious that these companies have an interest in harvesting the largest number of hectares possible in the shortest possible time, and therefore they do not pay serious attention to cleaning the machinery when they move from one plot to another. Therefore it is common to find remains of the harvest from one plot when the machinery goes in to harvest the next plot. This is clearly a source of contamination.

### LACK OF SEGREGATION: A STRATEGY TO CONFUSE THE MARKET

The majority of cooperatives do not give different treatment to conventional and genetically modified maize when these are transported, delivered, dried, stored or sold (it is generally referred to as "a single heap"). In some cases this is because there is a lack of the technical or human resources to carry out separation. In many other cases it is part of the strategy to confuse the market. The undifferentiated maize is sold to second level cooperatives or to sales entities specifying its use as being for "animal feed". The feed will be sold as genetically modified, and the possibility of purchasing feed that is not genetically modified is disappearing.

Furthermore, as has already been pointed out, the system of labelling does not make it obligatory to label derivatives (meat, milk, eggs) from animals fed on GMOs. The incentive to maintain a market for non-genetically modified maize is disappearing because the same price is paid for conventional maize as for maize that has been genetically modified. In this way the GMOs continue to enter the food chain on a massive scale though the compound feeds used to feed animals.

In Catalonia, for example, the fact that more than 40% of the maize is genetically modified raises the following questions: Can the other 60% be considered as maize that is not genetically modified, or is the majority of the product mixed and therefore contaminated? How can the government bodies guarantee the traceability of harvests that are not genetically modified under these conditions? Is the consumer of the maize being informed that he/she is being denied the right to choose?

Traceability is therefore a theoretical concept that, in Spain, does not match the reality. From the field to the plate, the companies with an interest in GMOs and the government bodies that protect them have created a situation in which contamination has gone from being an exception to being the rule.

Traceability is an impossible myth. None of the conditions necessary to be able to achieve it in such a way as to guarantee correct labelling and true freedom of choice are met.

## VIII. Contamination: more cases every year

The scenario described in this report has resulted in a number of serious cases of contamination by GMOs in Spain. An analysis is given here of the cases found during the 2005 campaign in Catalonia and Aragon, together with a brief summary of the cases of contamination detected in previous years, looking at contamination of seeds by cross-pollination, and contamination during harvest, transportation, processing and during the distribution of the product. It should be borne in mind that contamination of non-genetically modified foods by GMOs can occur throughout the food chain, and this has been demonstrated by relevant scientific studies<sup>vi</sup>.



Seed sacks left next to the crop, on the edge of water channels and irrigation ditches, with some seeds inside. Is this the control maintained over GMOs?

The lack of systematic analysis carried out by the government bodies to determine the scale of the problem together with the absence of transparency when it comes to publishing the results, mean that the true scale of the phenomenon is not known. Although sources in the Ministry of Agriculture, Fisheries and Food and the Departments of Agriculture of Aragon and Catalonia have stated the contrary on a number of occasions, it is the case that since 1998 thousands of hectares of Bt maize have been grown in Spain without the government having taken any measure whatsoever to assess, and much less to avoid, the pollination of conventional or organic maize by these genetically modified varieties.

The economic costs associated with contamination continue to be borne by the victims of such contamination and by society as a whole. No one makes the owners of the technology and the patents answerable, when it is they who are absolutely responsible for the damage. This situation is closing the market against an agricultural model that is growing and whose environmental, economic and social effects are more than proven: organic agriculture.



**INFORME DE RESULTADOS: ANÁLISIS DE MATERIAL TRANSGÉNICO EN ALIMENTOS Y PIENSOS**

Resumen del informe: Resumen del informe

Fecha de emisión: Fecha de emisión

Nombre del cliente: Nombre del cliente

Nombre del laboratorio: Nombre del laboratorio

IMPORTE ANALIZADO: IMPORTE ANALIZADO

MÉTODOS EMPLEADOS: MÉTODOS EMPLEADOS

INFORMACIONES ESPECIALES Y RESULTADOS OBTENIDOS:

Material	Resultado	Observaciones
Maíz	...	...
...	...	...

CONCLUSIONES:

vi. Véase el informe de resultados de análisis, desarrollado en el apartado 2º del Anexo 1º.

These photos illustrate some of the steps taken during the research: taking samples (cobs, leaves, styles), sample preparation, the ELISA test, PCR analysis.

## **Cases of contamination in the 2005 campaign**

The high cost involved in carrying out detailed analyses and genetic modification detection work means that if the government wanted to carry out an exhaustive check of the technical measures that a “coexistence” decree would involve (safe distances, refuge zones..) the cost would be unacceptable. If we add that this research has been carried out with the active collaboration of farmers who have provided all the details of their farms and crops, it is obvious that it would be extremely difficult to try to verify the correct application of the “coexistence” measures if such collaboration were lacking. Therefore, it seems clear that, both in the fields and in the rest of the custody and final food production chain, “coexistence” is technically and economically unviable.

### **A. CASES DETECTED DURING THE FIELD RESEARCH CARRIED OUT IN 2005 IN CATALONIA AND ARAGON:**

An analysis campaign was carried out in conventional and organic maize fields in Catalonia and Aragon during the months from July to December 2005, involving close to 40 farmers. Plots were found that were contaminated by MON 810 and Bt 176 events, with percentages between 0.07% and 12.6%. In three of the cases this involved local varieties of maize, which means that, after years of selection, these cannot be sown again. Contamination of local varieties constitutes an attack on biodiversity because it causes the disappearance of the few varieties that are still in the hands of the farmers, or makes it impossible to use them.

1. Municipality of Linyola (Lleida). Area 15, Plot 43  
Variety PR34N43 grown conventionally.  
Contamination detected. Presence of MON 810: 2.6%
  
2. Municipality of Almenar (Lleida). Area 13, Plot 56  
Local variety (certified as organic) grown organically.  
The samples consisted of a series of cobs taken in two opposite areas of the field, and which were sent separately to the laboratory:
  - a) Contamination detected. Presence of Bt 176: 0.15%
  - b) Contamination detected. Presence of MON 810: 0.33%
  
3. Municipality of Arbeca (Lleida). Area 18, Plot 14  
Maize grown conventionally.  
Contamination detected. Presence of MON 810: 3.8%
  
4. Municipality of Bellcaire d'Urgell (Lleida). Area 14, Plot 98  
Maize grown organically.  
Contamination detected. Presence of MON 810: 0.9%
  
5. Municipality of Bellcaire d'Urgell (Lleida).  
Variety Eleonora grown conventionally.  
Contamination detected. Presence of MON 810: 0.07%
  
6. Municipality of Albons (Girona). Area 4, Plot 48, Area 1.  
Variety PR34N43 (conventional) grown organically.  
Contamination detected: 12.6%

*“My crop was intended for an organic chicken farm in the district of Solsona. Despite the serious financial loss that this means for me, I do not want to sell the maize as conventional because I do not want to contribute to disseminating this contaminated material”.*

(Personal statement made by the farmer affected, 04-02-06)

7. Municipality of Gurrea de Gállego (Huesca)  
Local variety grown conventionally.

- a) Contamination detected. Presence of Bt 176: 2%
- b) Contamination detected. Presence of Bt 176: 0.2%

## B. CASES REPORTED BY THE ARAGONESE ORGANIC AGRICULTURE COMMITTEE (CAAE)

The CAAE itself, concerned by GMO contamination in the largest GMO producing region in the whole of the EU, has carried out its own analyses of the organic maize producers, both in the field and in store. The data is alarming, showing 50% of the samples analysed to be contaminated, with percentages varying from 0.03% to 1.9%. This has forced the CAAE to prevent these crops being sold as organic.

8. Municipality of Boquiñeni (Zaragoza). (The owner of the plots affected in this does not want the cadastral data of the farm to appear in this report)  
Contamination detected. Presence of MON 810:  
Sample taken in the plot: 1.9%  
Sample taken in the store: 0.41%

9. Municipality of Quinto de Ebro (Zaragoza). Area 524, plot 4.  
Contamination detected: Sample taken in the plot: 0.23%

10. Municipality of Huerto (Huesca). Areao 101, plot 6  
Contamination detected: Sample taken in the plot 0.03%

*"It is evident that plantations of GM seeds should not exist. They do not respect either the environment or agriculture". "I can give those who ask for it my information relating to loss of profitability due to contamination of my crop; the price at which I will sell this year is a lot lower than the price at which I would have sold my crop if it had not been disqualified."*  
Rosabel Ballarín Matute, Vice President of the CAAE. Affected by contamination.

## **Cases of contamination in previous years**

### **Contamination due to cross pollination**

#### -Aragon, 2004

In December 2004, the CAAE took samples of the organic maize crops to detect possible presence of genetic contamination. The result speaks for itself: 100% of the samples of organic maize taken appeared to be contaminated.

1. Municipality of Sariñena (Huesca). Area 115, Plot 46a.  
Organic crop. Local variety "rojo vinoso".  
Contamination detected.  
Presence of Bt 176: 34%  
Presence of traces of MON 810.

*"My name is Félix Ballarín, I am an organic farmer and it seems as though I am an "anecdote" because of the contamination that has affected the maize I have been growing. An "anecdote" that does not look important taking into account the advantages this genetically modified maize holds for farmers. Advantages they defend to the hilt with half truths which are all debatable, except for the advantages of the economic profit that goes to those who sell it and who monopolise these seeds (...). The coexistence of genetically modified crops and the rest is*

*nullified when it has been demonstrated that contamination is a REALITY. And I am a reality not an anecdote (...).  
Taken from an open letter written by a farmer affected in 2004.*



2. Municipality of Rivas, Ejea de los Caballeros (Zaragoza)  
Organic crop. Certified conventional seed.  
Contamination detected. Presence of MON 810: 0.2%

3. Municipality of Binefar (Huesca)  
Organic crop. Certified conventional seed.  
Contamination detected. Presence of MON 810: 0.5%

#### -Navarre, 2001: Fields of organic maize contaminated

At the end of 2001, the Navarre Organic Production Council (CPAEN) detected the presence of GMOs in the crops from two organic maize plantations. A more detailed analysis (on one of the maizes) revealed that the contaminant agent was the Bt 176 event present in the genetically modified variety Compa CB. As a result of the contamination both productions were disqualified. This case caused almost all the organic farmers of Navarre to stop growing organic maize.

#### **Contamination of seeds**

##### Navarre and Aragon, 2001: contamination of soya seeds for organic cultivation

Towards the end of 2001, the CPAEN discovered contamination by genetically modified material in a batch of soya used as feed in an organic poultry rearing farm. In this case too, it was necessary to disqualify the farm's production although the soya had been brought from a Navarrese organic farmer. The origin of the contamination was probably the seed bought by the farmer from the company Monsanto. At that time there were no soya crops in that area and there had been none in the past 15 years; however, the sacks of seeds contained seeds that were genetically modified or contaminated although there was no mention of this on the label.

#### **Contamination of feed**

##### Catalonia: presence of genetically modified soya in feed for organic livestock

In a campaign to analyse the impact of genetic contamination on organic agriculture in Catalonia, carried out in 2003 by the Catalan Council for Organic Agricultural Production (Consell Català de Producció Agrària Ecològica - CCPAE), at least one case was found of contamination of feed intended for organic livestock. This information is known because the farmer who was affected decided to publicise it in order to report her inability to defend herself legally. This person has produced veal in an extensive organic farm for the past 15 years. The cows and calves are fed on the pasture from her own fields but she uses a flour supplement (maize, rye, wheat, vitamins and minerals) for the calves in the fattening stage. The analyses of the feed that she uses revealed that it contained 0.7% of the genetically modified soya, RoundUp Ready, when it had been assumed that it should not contain any soya whatsoever.

## **IX. Experimental fields out of control**

Spain, as well as being the European country with the most hectares of genetically modified maize on a commercial scale, has led in recent years in the number of trial fields. From 1993 to 2005, more than 300

trials have been notified<sup>7</sup>. As has been mentioned in this chapter, the conditions under which the trials in the experimental fields take place show a complete absence of control:

- They are carried out without any type of isolation from their surroundings, the human populations or the nearby planted plots, even though in most cases these involve maizes that are not approved for commercial growing.
- The recommended distances are not respected.
- It is not clear who is authorising the trials.
- There are experimental fields that do not have authorisation.
- It has been confirmed that in a number of cases varieties that are authorised for commercial use and those that are not are mixed together in the same experimental field.
- In some cases they are disguised by the use of a description such as “demonstration field”.
- They are not properly signed.
- In most cases it is impossible to obtain information about them.

All the information about the experimental fields should be accessible to the public, both in relation to their location and the documentation explaining the safety measures applied to them. However, many of them do not appear on the European Commission (CE) website, on which all the trials should be shown, and they are not mentioned in the Spanish Official State Bulletin (BOE). This attitude of opacity on the part of the government is in contrast to the statements made by the relevant politicians, who repeat that transparency is one of the priorities as regards GMOs. This demonstrates once again that the multinational biotechnology companies are doing what they please in Spanish territory with their policy of “faits accomplis”, while no government body has the courage to put the brake on their activities.

During the last three years, the company PIONEER SEEDS has been sowing experimental fields without following any of the authorisation procedures as defined either by the European directives or their transposition into Spanish legislation. The company defines their fields as “demonstration fields”, and they consist of small plots on which lines of unauthorised genetically modified varieties of maize are sown next to other conventional varieties, or authorised GM varieties. The demonstration fields with the non-genetically modified authorised varieties have been grown in the Catalan countryside for decades and have become a massive propaganda spot for new products or treatments that the multinationals want to bring onto the market.



This procedure is not illegal provided the varieties that are sown are authorised for commercial cultivation. However, when one of the varieties is a genetically modified variety that is not recorded in the

Register of Vegetal Varieties, then the demonstration field belongs in another category: it is classifiable as an experimental field of voluntary release of GMOs into the environment and must abide by the authorisation and control protocol referred to above.

The descriptions below refer to three examples that have been selected from those appearing in the full report.

### **Algerri (LLeida)- October 2003**

In October 2003, the company PIONEER invited farmers from LLeida to attend a public meeting in a field belonging to the Municipality of Algerri (LLeida), in order to confirm the yields from the company's different varieties of maize. Two of these were MON 810: the variety PR33P67 (P67) and the variety PR33N44 (N44). The second could only be used for experimental purposes.

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<sup>7</sup> It is important to note that one notification can cover experiments with a single event in different locations and therefore the number of plots where these trials have been carried can be much greater.



The companies PROSAPIA, S.A. (owner of the farm) and PIONEER SEEDS, and DARP were all reported because of their responsibility for sowing these two varieties. The variety PR34N44 at the time it was sown was not registered in the Register of Varieties. The court in Balaguer transferred the report and documentation to the Public Prosecutors Office (Ministerio Fiscal), which asked DARP for a report. Because the questions put to DARP by the Prosecutors Office were very basic, the APC decided to expand its denunciation with a number of requests and clarifications to which DARP should respond.



A representative from the ICV party in the Catalan Parliament put a number of questions to DARP. In reply, DARP acknowledged that the variety PR34N44 is not registered in the Register of Commercial Varieties and therefore it cannot be sown within Spanish territory. DARP also stated that this field had all the relevant authorisations, but refers to the Spanish Office of Vegetal Varieties (Oficina Española de Variedades Vegetales) as the body responsible for approving authorisation.

Under Spanish legislation, however, it is the relevant Department of the Autonomous Community that is designated as the body responsible for issuing the authorisation for experimental fields. (In any case, if the field that was the subject of the denunciation had varieties sown in it that were not registered in the Register of Vegetal Varieties, the field should have been classified as experimental and the authorisation procedure described above should have been followed and the technical conditions relating to isolation as defined in the legislation adhered to).

It was confirmed that on the European Commission website, where all the information about the experimental fields should be shown, there was no report about a trial in this municipality of Lleida. The Official State Bulletin and the DOGC were also consulted but there was no form of public information that referred to it.



With regard to the technical conditions of isolation of the trial, the accompanying photograph shows how the two varieties are mixed with other conventional varieties, and how, in addition, there is no type of barrier to prevent access by persons or animals, which leads us to believe that once again an unauthorised variety has been sown with no type of safety protocol and that the government knows of this and allows it.

**The present situation:** In January 2006, the Assembla Pagesa de Catalunya (APC) received a report from DARP answering the questions raised by the Inspector. This report states that PIONEER requested authorisation from MAPA to carry out the trials and that it also asked for these varieties to be registered in the Register of Varieties. It also states that MAPA did not reply to the application and that therefore Pioneer assumed that the answer was a positive one and went ahead with the sowing at the farm. The APC legal teams are analysing this response in order to determine how it could have happened that MAPA did not answer, and, in the event that authorisation had been granted, how it is possible that no government body checks the technical isolation conditions.

## **CONCLUSION: COEXISTENCE IS NOT POSSIBLE**

All the information gathered in this report leads to an unequivocal conclusion that the “coexistence” of GM and non-GM crops is not possible, and it confirms what not only the APC, Greenpeace and the Transgenics Out! Campaign, but the vast majority of environmental and agrarian organisations have been stating for many years:

- The control and monitoring of GMOs from the laboratory to the plate is ineffective, and in many cases non-existent. The system for segregation, traceability and labelling does not work.
- There are no independent systems of detection and investigation of the cases of contamination, illegal crops (commercial or experimental), administrative irregularities or any negative effects of the GMOs. The vast majority of contamination cases are never detected.
- The economic costs of contamination and the other problems caused by the GMOs are high and are borne by those affected by them. The social, environmental and health effects are potentially enormous. All of this is the result both of the direct damage caused by these technologies, and of the loss of real and sustainable agricultural and food solutions, which has been brought about by the financial black hole associated with the biotechnology option.
- The tremendous cost involved in an exhaustive analysis and real rigorous control by the authorities means that this type of technology is socially, environmentally and economically unviable.
- The lack of transparency prevents most of the failings of the GMOs and the scandals associated with them being brought to public notice. At the same time society is constantly subjected to propaganda by an industry that only mentions the supposed benefits of these crops without offering objective and contrasting information, and with the sole aim of increasing its control over the agricultural and agro-foods sectors.
- The GM industry is capable of political influence at many levels, ensuring that its interest prevail over those of the environment and society.
- Governments are not capable of avoiding illegal sale and cultivation or of preventing non-compliance with legislation in the cultivation of genetically modified crops.
- Any system of control has its failings and there will always be human or technical carelessness and errors, and therefore in practice it is impossible to prevent other crops being contaminated.

**In view of the above, the Rural Assembly of Catalonia (*Assemblea Pagesa de Catalunya*), Greenpeace and the Transgenics Out! Campaign (*Plataforma Transgènics Fora!*) demand that:**

- x All authorisation of cultivation of GMOs in Spain be immediately suspended because we believe that the technical and legal framework does not exist to enable their cultivation under safe and controlled conditions.**

**Consequently, the authorisations granted by the different governments to date must be revoked and experimental plantings prohibited.**

- x Any attempt to approve decrees or Royal decrees on “coexistence” be suspended.**
- x The authorities must reconsider agricultural policy in Spain in order to guarantee the existence of production completely free from GMOs, thus ensuring freedom of choice**

for consumers and farmers above the interests of the GM industry and the multinational companies that own these technologies.

- x A commission be created to study the environmental, social and health damage caused by GMOs in a rigorous and independent way and to carry out a transparent analysis of this, and to require that sanctions be applied to those who have caused such damage.

The companies that produce the GMOs or own the patents must be considered liable of contamination and other damage, except when it can be demonstrated that the error or negligence arose from another party.

## **APPENDIX: GENERAL METHODOLOGY**

The report summarised in these pages arises out of the need to analyse what is happening in the field after seven years of growing genetically modified maize. In carrying out this study, the authors have identified three objectives:

- To evaluate the real situation in the maize sector in relation to GMOs.
- To collect statements from farmers, agricultural technicians, sales persons and cooperative managers in areas where the genetically modified crops have been introduced on a massive scale.
- To analyse the applicability of the technical measures proposed in draft legislation on "coexistence" that different government bodies are seeking to approve.

The methodology used can be divided into two phases that have been developed in parallel throughout the study:

The first phase has consisted of a bibliographic review and analysis of all the available information.

The second phase has been that of research. Firstly, data has been collected from the persons, entities and government administrations that are involved with the GMOs or who suffer their effects. Secondly, fieldwork has been carried out (interviews, surveys, collection of data, analysis of commercial documentation, photographic documentation, etc.) in the provinces of Lleida (Catalonia), and Zaragoza and Huesca (Aragon), between July 2005 and February 2006.

During the second phase, farmers, technical specialists and those in charge of agricultural cooperatives were interviewed and dozens of fields were visited and samples for analysis taken.

All the analytical results presented in this report have been confirmed by technical analysis in an accredited laboratory.



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Assemblea Pagesa de Catalunya  
Greenpeace  
Plataforma Transgènics Fora!

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## GLOSSARY

AEVV (Oficina Española de Variedades Vegetales)	Spanish Office of Vegetal Varieties
Assemblea Pagesa de Catalunya (APC)	Rural Assembly of Catalonia
CAAE (Comité Aragonés de Agricultura Ecológica)	Aragonese Organic Agriculture Committee
CAMA (Consejo Asesor de Medio Ambiente)	Environmental Advisory Council
CATA (Coordinadora Antitransgenica de Aragón)	Aragonese Anti-transgenic Coordinator
CCPAE (Consell Català de Producció Agrària Ecològica)	Catalan Council for Organic Agricultural Production
CHA (Chunta Aragonesista)	Aragonese nationalist socialist party
CiU (Convergència i Unió)	Catalan Convergence & Union party
CPAEN (Consejo de la Producción Agraria Ecológica de Navarra)	Navarre Organic Production Council
DARP (Departamento de Agricultura, Ganadería y Pesca)	Department of Agriculture, Livestock and Fisheries
EFSA	European Food Safety Agency
EPA,	United States Environmental Protection Agency
ICV (Iniciativa per Catalunya I Els Verds)	Initiative for Catalonia and The Greens party
IU (Izquierda Unida)	United Left party
MAPA (Ministerio de Agricultura, Pesca y Alimentación)	Ministry of Agriculture, Fisheries & Food
MIMAM (Ministerio de Medio Ambiente)	Ministry of the Environment
PAR (Party of Aragon)	Party of Aragon
Plataforma Transgènics Fora!	Transgenics Out! Campaign
UAGA (Unión de Agricultores y Ganaderos de Aragón)	Aragon Farmers & Breeders Union

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