



**Current Awareness of Experimental and Commercial  
Releases of GM Crops Worldwide:**

**Summary Report for period  
September 2007 to August 2008**

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## Current Awareness of Experimental and Commercial Releases of GM Crops Worldwide

### Executive Summary

1. This is the sixth report in an ongoing series that aims to document the extent and type of releases of genetically modified (GM) crops worldwide. The report covers the period 1<sup>st</sup> September 2007 to 31<sup>st</sup> August 2008 and provides summary information on both the commercial and experimental status of GM crops within the reporting period. It also highlights any significant developments in terms of GM technology and documents any reported unauthorised releases of GM crops.
2. Items in the **news** concerning GM crops include: researchers in Sweden determine that GM oilseed rape seeds can remain viable in the soil for 10 years; China aims to launch a multi-billion dollar GM research programme; the European Food Safety Authority rules that there is no justification for banning MON810 maize; BASF are threatening to launch a lawsuit against the European Commission concerning approval of its genetically modified potato Amflora; Australian farmers are set to grow GM oilseed rape commercially; a French court has rejected a motion to lift the national ban on the cultivation of MON810; and over the summer a number of field trials have been halted by protestors in Germany and other EU countries.
3. The worldwide area used in the **commercial cultivation of GM crops** rose to 114 million hectares in 2007, with production in 23 countries. The USA continues to be the dominant country in this respect, followed by Argentina, Brazil and Canada. EU countries growing GM maize commercially include Spain, France, Portugal, Czech Republic, Portugal and Germany, Slovakia, Romania and Poland. Worldwide, GM soybean varieties now make up 64% of all soybean grown, GM cotton accounts for 43% of all cotton, GM maize accounts for 24% and GM oilseed rape accounts for 20% of all oilseed rape grown.
4. The main **experimental GM crops** continue to be maize, oilseed rape, soybean and potato. Compared to 2007 data there has been a large increase in the number of notifications involving soybean, with traits including herbicide tolerance, insect/pest resistance and altered oil composition. There have been several notifications for GM *Allium* sp. (onion, leek, etc.) in New Zealand. Also of interest is the decline in the number of notifications for GM grasses, from a peak of 36 in 2004 to just 1 so far in 2008.

## 1.0 Introduction

This is the sixth surveillance report on the worldwide status of genetically modified (GM) crops to be published by the GM Inspectorate for England, and covers the period 1<sup>st</sup> September 2007 to 31<sup>st</sup> August 2008. The aim of this report is to enable policy makers, particularly those with responsibility for seed-related issues, and the UK seeds industry, to maintain current awareness of the level of GM crop related activity taking place in different countries. The report covers experimental (deliberate) releases, authorised commercial releases and unauthorised (i.e. accidental) releases. A news section highlights recent developments relating to GM crops that have recently featured in the news media, such as new crops and traits, new regulatory issues and any recent contamination incidents involving GMOs.

The report is produced on behalf of UK Plant Variety Rights Office & Seeds Division of Defra (PVS).

## 2.0 News concerning GM crops

The following GM-related articles have appeared in the news during the current reporting period:

### 2.1 Headline news

#### **GM oilseed rape seeds can 'last for 10 years'** (April 2008)

The seeds of some genetically modified crops appear to remain viable in the soil for at least a decade, according to research by Swedish scientists. Researchers at Sweden's Lund University and the Danish Technical University found transgenic plants growing in a field planted with GM rapeseed more than 10 years ago, despite intensive efforts in the intervening years to remove the seeds, according to their report in *Biology Letters*. Although measures were taken in the years following the GM trial to remove 'volunteers', or plants that grow from shed seed, some appear to have been overlooked, said the authors. Fifteen out of 38 sample seedlings tested positive for the genetically modified trait of herbicide tolerance 10 years after the trial had ended. Such findings are in contrast to previous studies. "In general, studies suggest that the majority of seeds disappear from the seedbank within two years," they write. Tighter measures to contain GM crops may be needed, concludes Dr Tina D'Hertefeldt and her colleagues. "This finding of volunteers, despite labour intensive control for 10 years, supports previous suggestions that volunteer oilseed rape needs to be carefully managed in order for non-GM crops to be planted after GM crops."

Source: <http://news.bbc.co.uk/1/hi/sci/tech/7324654.stm>

<http://www.foodnavigator.com/Science-Nutrition/GM-rape-seeds-last-at-least-10-years-say-researchers>

### 2.2 Additional news

#### **China to launch billion-dollar GM programme** (April 2008)

China is set to launch a five-year, 10 billion yuan (US\$1.4 billion) research programme into GM crops (also quoted as \$2.9 billion over the next 15 years), according to the country's top agricultural biotechnology experts. Whereas the first generation of GM crops focused on insect resistance, this new programme will emphasise yield, quality, nutrition improvement and drought resistance, according to Huang Dafang, former director of the Institute of Biotechnologies of the Chinese Academy of Agricultural Sciences (CAAS). Funding for GM safety and ecology monitoring and surveillance will be included, to reduce risks such as undesired gene flow into conventional crops. The injection of funding could lead to quicker

commercialisation of GM crops in China, say scientists. Currently China is currently the sixth largest producer of biotechnology enhanced plants, growing GM cotton, tomatoes and peppers on an area of 3.8 million hectares in 2007.

Source: <http://www.scidev.net/en/news/china-to-launch-billion-dollar-gm-programme.html>  
<http://www.agbios.com/main.php?action=ShowNewsItem&id=9975>

**EFSA: no justification for MON810 bans (July 2008)**

A safety reassessment by independent scientists on behalf of the European Food Safety Authority (EFSA) has concluded that national bans on maize MON810 by Hungary and Greece are not scientifically substantiated. Both countries have made use of the safeguard clause contained in EU Directive 2001/18/EC on the deliberate release of genetically modified organisms. In September 2007, Greece extended a ban on the cultivation of the insect-resistant GM maize MON810, citing potential impacts on bee colonies and concerns from animal feeding studies. Hungary, which prohibits its use and sale, had expressed concern about negative effects on soil biology and on target and non-target organisms. Bt-maize MON 810 was first authorised in the European Union in 1998, and in 2007 MON810 was grown on a total of approximately 110,000 hectares in Spain, France, Czech Republic, Portugal, Germany and Slovakia. The European Commission is now responsible for the drafting of a proposal to the Member States for the repeal of their safeguard measures.

Source: <http://www.gmo-compass.org/eng/news/376.docu.html> (July 17 2008)

**BASF threaten lawsuit against EU on GMO potato (July 2008)**

The world's biggest chemicals maker, BASF, has filed a case with the European Court in Luxembourg saying the European Commission failed to act on the approval of its genetically modified potato Amflora. The Germany-based company stated that failure to approve Amflora, which is modified to produce only the starch needed in the paper and textile industries, is depriving it of as much as 30 million euros a year in license income. The application to grow Amflora was passed on to the Commission in July 2007 after individual EU governments failed to reach an agreement. According to Hans Kast, head of BASF's plant science division, Commissioner Stavros Dimas did not adhere to the EU's approval procedure, which states the commission should allow cultivation if the application is neither approved nor rejected. If approval were given, it would be the EU's first authorization of a GMO product for cultivation in a decade. At present only one GMO crop may be grown commercially in the EU, MON810 maize developed by U.S. biotech company Monsanto and approved in 1998.

Source: <http://www.bloomberg.com/apps/news?pid=20601100&sid=aCOq79O6jlTk&refer=germany;>  
<http://in.reuters.com/article/environmentNews/idINL1766539520080417>

**More than 100 Victorian farmers set to plant GM canola (April 2008)**

Following the ending of a four-year moratorium on growing GM canola (oilseed rape) more than 100 farmers in the Federal State of Victoria, Australia, plan to plant the crop in the 2008 season. The herbicide tolerant GM canola is marketed by Bayer and Monsanto, and promises higher profits for the farmers. However, a limited supply of seed will restrict the number of farmers who can plant the crop this year. New South Wales has also lifted its ban on GM canola and will allow commercial production under strict conditions. Although, farmers in Victoria are not obliged to declare where GM Canola will be planted, Monsanto must disclose sales in its annual report to the national Gene Technology Regulator. Pioneer, one of the seed companies involved, said farmers are likely to plant a few thousand hectares of GM canola, mostly in the Western district of Victoria.

Source: <http://www.gmo-compass.org/eng/news/354.docu.html>

**GM opponents force research projects to be called off (April/July 2008)**

Opponents of genetic engineering occupied field trials in Germany, causing various GM research projects to be abandoned. In one such incident the GM protesters invaded a field, erected a tower and tents and declared that the field was under occupation. A few days later the research team, studying mycotoxin levels in Bt maize, announced that the trial had been abandoned. In another incident, safety research trials assessing possible effects of a GM barley on beneficial fungi also had to be curtailed. Such incidents are not restricted to Germany. Attacks in France have seen a number of GM trials destroyed, and in the UK officials at the Department for Environment, Food and Rural Affairs (Defra) confirmed they were looking at a range of options to reduce vandalism to GM crop trials. This follows intense lobbying by a group representing biotech companies, which has asked the UK government to implement changes that would make GM trials harder for activists to locate. Under existing UK laws, full details of every GM crop trial must be disclosed, with a six-figure grid reference identifying the precise location of the field.

Source: <http://www.gmo-safety.eu/en/news/628.docu.html>

<http://www.guardian.co.uk/environment/2008/feb/16/gmcrops.greenpolitics>

**French Supreme Court confirms ban on MON810 (March 2008)**

The French Supreme Court has rejected a motion by maize growers and biotech companies to lift the national ban, imposed in autumn 2007, on the cultivation of GM maize. The result is that, in 2008, French farmers will not be allowed to grow the only GM crop approved for cultivation in the European Union, Monsanto's Bt variety MON810. In early February 2008 a French "High Authority" on biotechnological products raised doubts on the safety of the Bt maize variant, citing negative effects on wildlife and the environment, and although the decision is not final, any new decision would come too late for this year's maize planting season. According to the national maize growers association, without the ban around 100,000 hectares of MON810 were likely to have been grown in France this summer, compared to 22,000 hectares in 2007.

Source: [http://www.gmo-compass.org/eng/news/351.french\\_supreme\\_court\\_confirms\\_ban\\_mon810.html](http://www.gmo-compass.org/eng/news/351.french_supreme_court_confirms_ban_mon810.html)

## **3.0 Commercial cultivation of GM Crops**

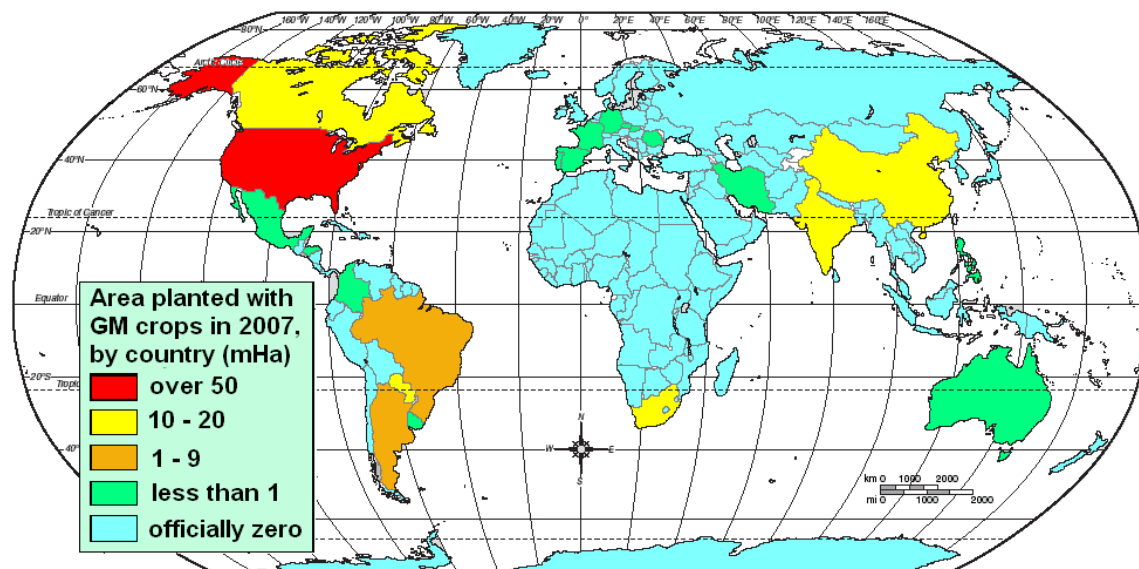
### **3.1 GM Crop Worldview:**

The global cultivation of GM crops rose to 114 million hectares in 2007, representing an increase of 12 million hectares on the previous year<sup>1</sup>. Genetically modified plants are currently commercially produced in 23 countries, namely: USA, Argentina, Brazil, Canada, India, China, Paraguay, South Africa, Uruguay, Philippines, Australia, Spain, Mexico, Colombia, Chile, France, Honduras, Czech Republic, Portugal, Germany, Slovakia, Romania and Poland (see Figure 1, overleaf).

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<sup>1</sup> Figures according to the ISAAA status report, published online, January 2008 – see: <http://www.isaaa.org/resources/publications/briefs/37/executivesummary/default.html>

**Figure 1- Global GM Crop Production 2007**



mHa = million hectares

Table 1 shows the major GM crop-producing countries, including the area grown and the types of crops produced.

**Table 1 - Cultivation areas for GM crops in 2006 (million hectares)**

Country	GM crop area	GM crop type
USA	57.7	Soybeans; Maize; Cotton; Rapeseed; Squash; Papaya; Alfalfa
Argentina	19.1	Soybeans; Maize; Cotton
Brazil	15.0	Soybeans; Cotton
Canada	7.0	Rapeseed; Maize; Soybeans
India	6.2	Cotton
China	3.8	Cotton; Poplar; Papaya; Tomato; Soybean; Sweet pepper
Paraguay	2.6	Soybeans
South Africa	1.8	Maize; Soybeans; Cotton
Uruguay	0.5	Soybeans; Maize
The Philippines	0.3	Maize
Australia	0.1	Cotton
Mexico	0.1	Cotton; Soybeans
Spain	0.1	Maize
Honduras	<0.1	Maize
Chile	<0.1	Maize; Soybeans; Rapeseed
Columbia	0.05	Cotton; Carnation
France	<0.05	Maize
Portugal	<0.05	Maize
The Czech Republic	<0.05	Maize
Germany	<0.05	Maize
Slovakia	<0.05	Maize
Romania	<0.05	Maize
Poland	<0.05	Maize

Source: ISAAA Briefs No 37-2007 (executive summary); GMO Compass (<http://www.gmo-compass.org>); FAO

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In terms of crop type, soybean makes up around 51% of all GM crops grown commercially, followed by maize at 31%, cotton at 13% and oilseed rape (rapeseed/canola) at 5% (see Table 2, column 3). GM soybean varieties now make up 64% of all soybean grown globally, GM cotton accounts for 43% of all cotton, GM maize accounts for 24% of all maize and GM oilseed rape accounts for 20% of all oilseed rape grown (column 5). Other, minor, GM crops that are grown commercially (or are at least authorised for marketing) include squash, papaya, alfalfa, sweet pepper, and carnation.

**Table 2 - Global cultivation areas in millions of hectares**

<sup>1</sup> Crop Type	<sup>2</sup> Area of GM crop (million hectares)	<sup>3</sup> Proportion of GM area sown to different crops	<sup>4</sup> Total area of GM and non-GM crop (million hectares)	<sup>5</sup> Proportion of total crop area that is GM
Soybean	58.6	51%	91	64%
Maize	35.2	31%	148	24%
Cotton	15.0	13%	35	43%
Oilseed rape	5.5	5%	27	20%

Source: ISAAA Briefs No 37-2007 (executive summary); GMO Compass (<http://www.gmo-compass.org>)

In 2007 the greatest increase in the use of GM varieties was seen in maize, with a rise of 10 million hectares, to 35.2 million hectares, compared to 2006 levels. This was predominately as a result of a general increase in the production of maize in the USA, although an increase was also observed in the commercial production of GM maize in Europe. The latest report by the International Service for the Acquisition of Agri-biotech Applications (ISAAA – see <http://www.isaaa.org/>) cites eight EU Member States in which GM maize is grown commercially (Spain, France, Czech Republic, Portugal, Germany, Slovakia, Romania, and Poland). For rapeseed, GM varieties were grown on 5.5 million hectares (compared with 4.8 million hectares in 2006), with cultivation predominantly in Canada and the USA. For soybeans, the global GM area remained effectively unchanged in comparison with 2006, at 58.6 million hectares.

## 4.0 Experimental release of GM plants/GM Crops

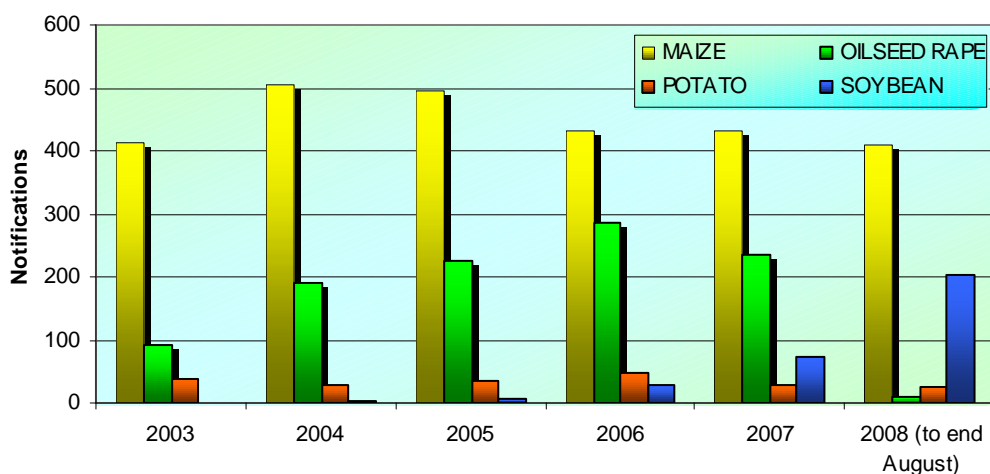
The following section provides information on the number of experimental releases of GM crops worldwide, in the years 2003 to 2008 (based on data available up to the end of September 2008). Data have been sourced from a number of online databases and from general web searches, with the number of experimental releases primarily based on notifications received by the relevant national or federal competent authorities (see Note 1 under Section 5.0 for a definition of the term ‘notification’). Bar charts show the number of notifications for the different plant species, and the accompanying text provides details of the countries where notifications have been submitted, showing the predominant GM traits. For ease of comparison GM crop releases have been grouped on the basis of crop type and number of notifications. It should be noted that some countries (for example Argentina and Canada) only publish trials data on an annual basis, therefore any notifications submitted in these countries during the current reporting period will not appear until the end of this year or start of next year. For this report it has not been possible to obtain specific notification data for several countries known, or considered, to be carrying out experimental GM trials work, including China, S. Africa and Brazil.

Crops included in this section of the report are generally restricted to those species that are grown in the UK, or where there is a possibility that they may be grown in the UK. Some borderline species (e.g. sweet potato) have been included because, although they are not grown widely in the UK, they are currently available to the amateur market. GM crops such as cotton and rice, which are unlikely to be grown in the UK in the foreseeable future, are not included.

### 4.1 GM Agricultural Crops – Category 1

Category 1 GM agricultural crops consist of the most widely-utilized GM crops around the world. Species that fall into this category are maize, oilseed rape, potato and soybean. Chart 1, below, shows the number of notifications for these crops between 2003 and 2008.

**Chart 1 – Total number of experimental release notifications of category 1 GM agricultural crops, 2003 to 2008.**

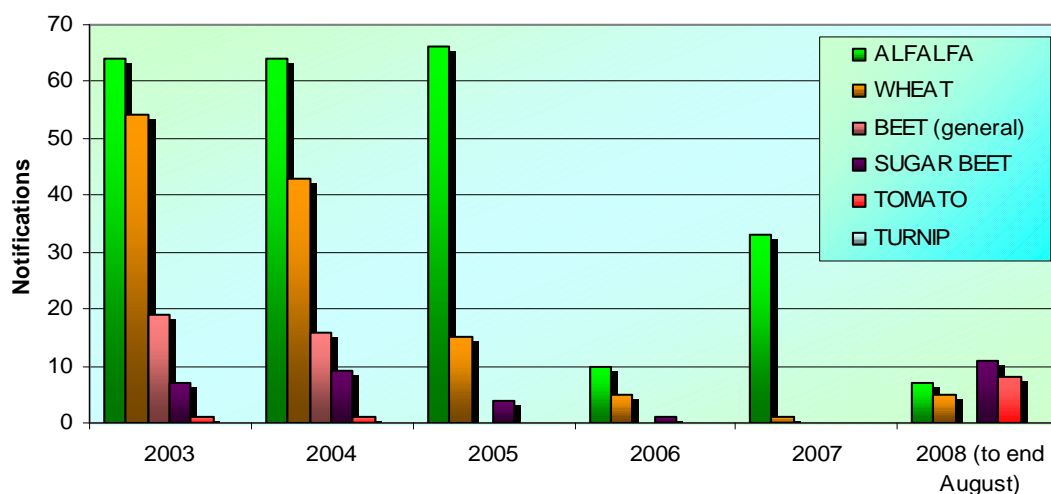


Thus far in 2008, the majority of GM trials have been for maize, with 411 deliberate release notifications. The USA accounted for most of these (354 notifications), followed by the EU (53 notifications, mainly in Spain, Romania, Slovak Republic), with Canada and Japan also registering a small number of releases. The main traits under development were herbicide tolerance, insect resistance, yield increase and drought tolerance. In the case of soybean there were 202 notifications, representing a 3-fold increase on 2007 levels. The majority of notifications were in the USA (199), with traits including herbicide tolerance, insect/pest resistance and altered oil. There were 24 notifications for the release of GM potatoes in 2008 (17 in the USA and seven in the EU) the main traits being insect resistance, disease resistance and altered starch. There were only eight notifications for oilseed rape (OSR) in 2008, with traits including herbicide tolerance and increased yield. The apparently low number of notifications for this crop in 2008 is likely to be due to the fact that Canada and Argentina, which in the past have undertaken a large number of OSR trials, are yet to publish figures for 2008 (expected January 2009).

#### 4.2 GM Agricultural Crops – Category 2

Category 2 GM agricultural crops include field crops such as alfalfa, wheat, turnip, sugar beet and ‘beet’<sup>2</sup>, as well as the glasshouse crop tomato. Chart 2 shows notification data between 2003 and 2008.

**Chart 2 – Total number of experimental release notifications of category 2 GM agricultural crops, 2003 to 2008**



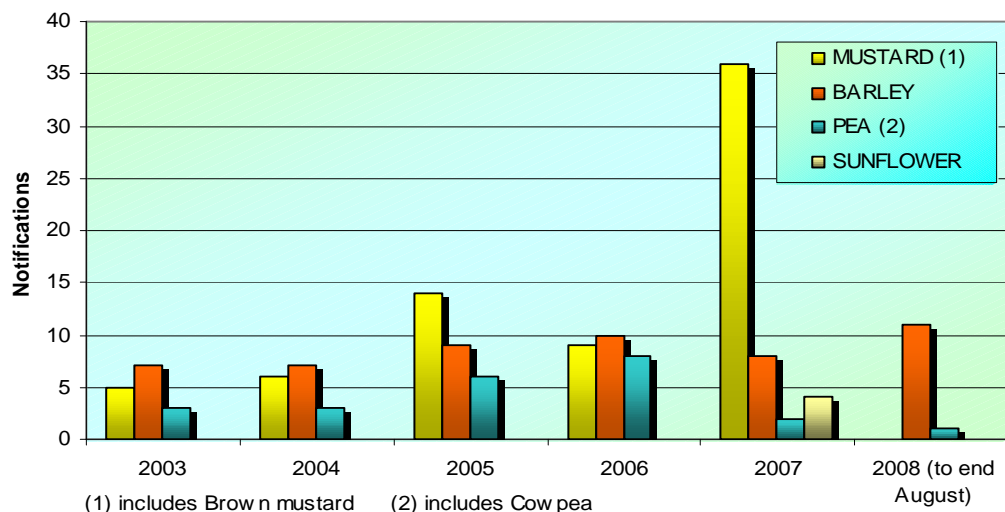
With 11 notifications in 2008, sugar beet has been the subject of most activity in this category, with traits including virus resistance and herbicide tolerance in countries such as the USA, the EU and Japan. Tomato was the subject of eight notifications, all of which were in the USA, including improved flavour and drought resistance. There were seven notifications for alfalfa (lucerne), all in the US for herbicide tolerance and/or yield increase. The decline in the number of alfalfa notifications is likely to be due to the move from the experimental phase to commercial production in the USA. There has been a small number of GM wheat trials in the EU (Germany and Hungary) and Australia in 2008, focusing on disease and drought resistance.

<sup>2</sup> The term ‘beet’ denotes a combination of sugar beet, fodder beet and vegetable beets, and is used by a number of databases that do not differentiate between these crop types.

### 4.3 GM Agricultural Crops – Category 3

Species that are designated ‘GM Agricultural Crops – Category 3’ are mustard, barley, pea and sunflower. Chart 3 shows the number of notifications worldwide since 2003 for these plants.

**Chart 3 – Total number of experimental release notifications of category 3 GM agricultural crops**

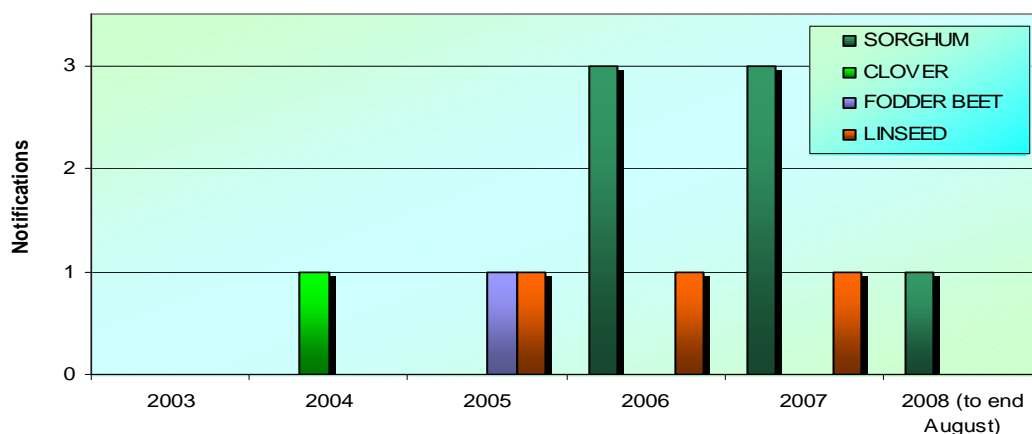


Barley has been the subject of the most activity in this category in 2008, at 11 notifications, with countries including USA, Australia and the Hungary. Traits include disease resistance, drought tolerance and pharmaceutical products production. In addition there has been one notification, in the USA, for GM cowpea, with an insect resistance trait. The apparent decline in the number of mustard notifications since 2007 may simply be due to the fact that most were previously submitted in Canada, for which data are not yet available for 2008.

### 4.4 GM Agricultural Crops – Category 4

‘GM agricultural GM crops – category 4’ includes sorghum, clover, fodder beet, and linseed (see Chart 4).

**Chart 4 – Total number of experimental release notifications of category 4 GM agricultural crops**

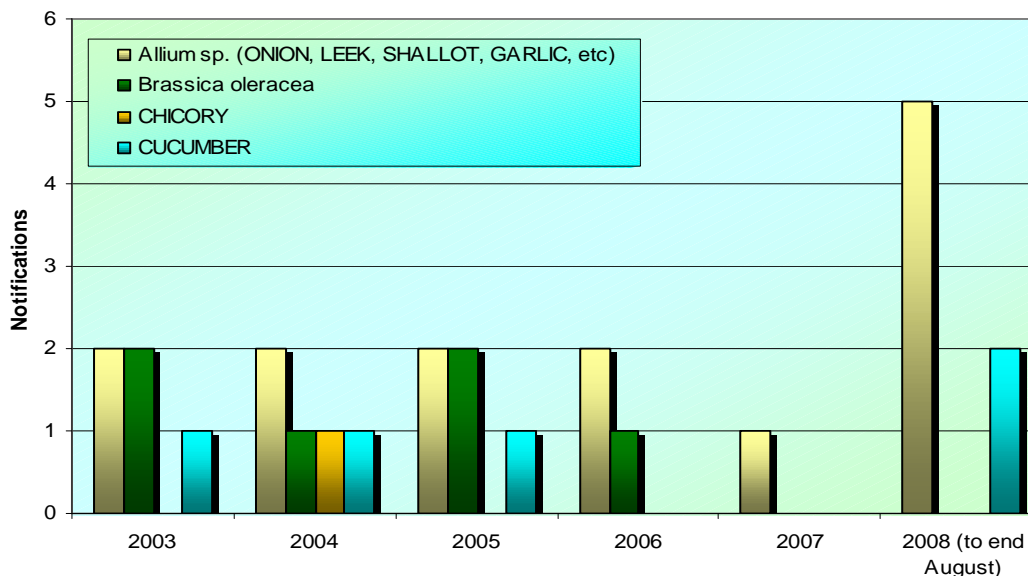


In 2008 there was a single notification for GM sorghum (USA, reduced secondary metabolite synthesis).

#### 4.5 GM Vegetable Crops – Category 1

Species included under ‘GM Vegetable Crops – category 1’ are *Allium* sp. (including onion, leek, shallot, etc.), *Brassica oleracea*, chicory and cucumber.

**Chart 5 – Total number of experimental release notifications of category 1 GM vegetable crops**

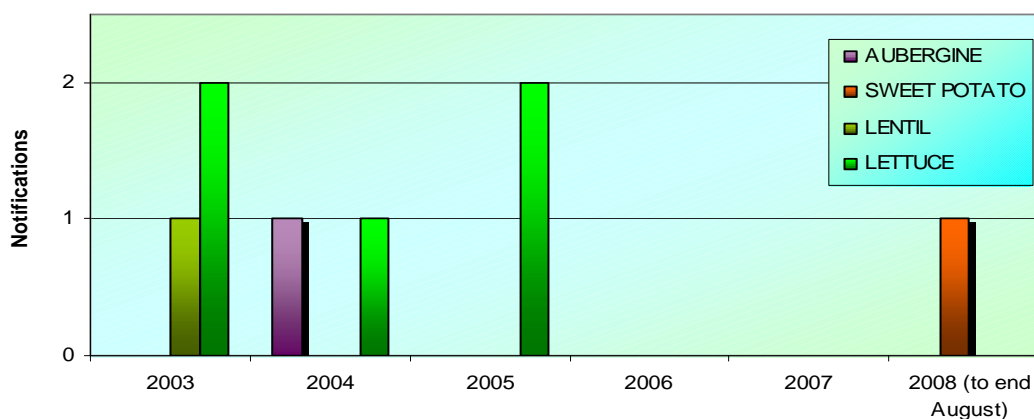


In 2008 New Zealand received five notifications for a range of *Allium* species with modified agronomic and quality traits (details not specified) including onion, garlic, shallot and leek. The USA received one notification for onion with herbicide tolerance properties. In addition Poland declared two notifications for cucumber with enhanced sweetness.

#### 4.6 GM Vegetable Crops – Category 2

‘GM Vegetable Crops – category 2’ encompasses the aubergine, sweet potato, lentil and lettuce (Chart 6).

**Chart 6 – Total number of experimental release notifications of category 2 GM vegetable crops**

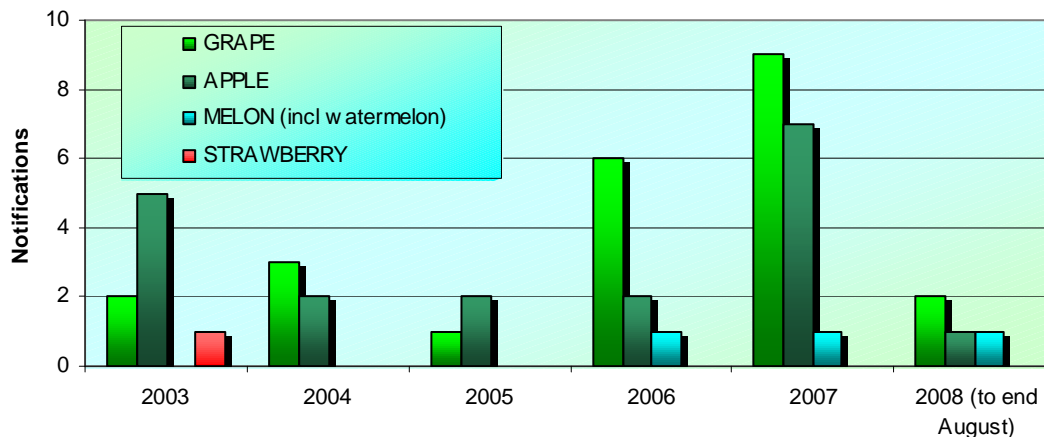


During the reporting period there has been only one GM experimental release notification in this category, for herbicide resistant sweet potato, submitted in the USA.

#### 4.7 GM Fruit Crops - Category 1

Category 1 GM fruit crops includes grape, apple melon, and strawberry (Chart 7).

**Chart 7 – Total number of experimental release notifications of category 1 GM fruit crops**

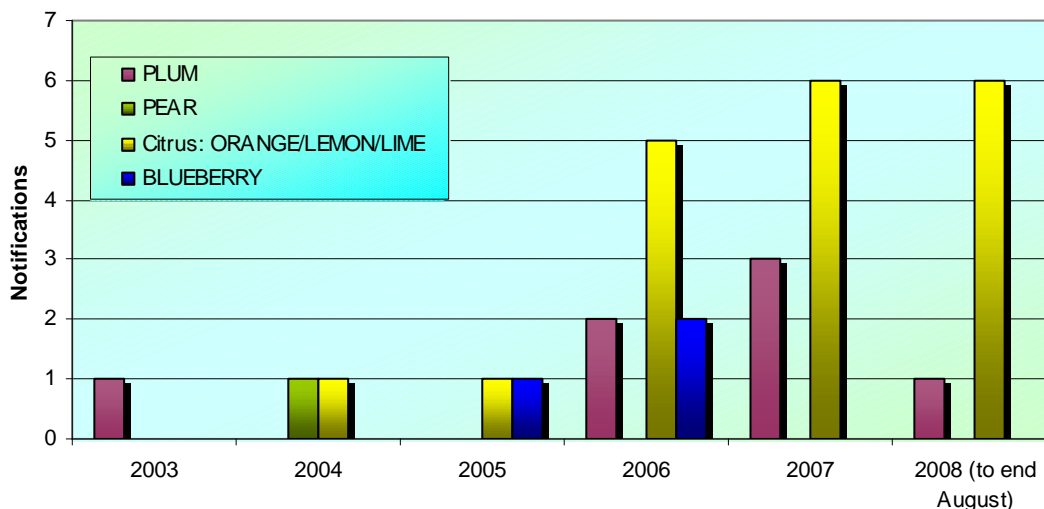


2008 has seen two notifications for grape (both in the USA, for disease resistance), one notification for apple (decreased sorbitol synthesis, USA) and one notification for melon (modified sex expression, USA).

#### 4.8 GM Fruit Crops – Category 2

Category 2 GM fruit crops includes plum, pear, citrus plants (orange, lemon, lime, etc.) and blueberry (Chart 8).

**Chart 8 – Total number of experimental release notifications of category 2 GM fruit crops**

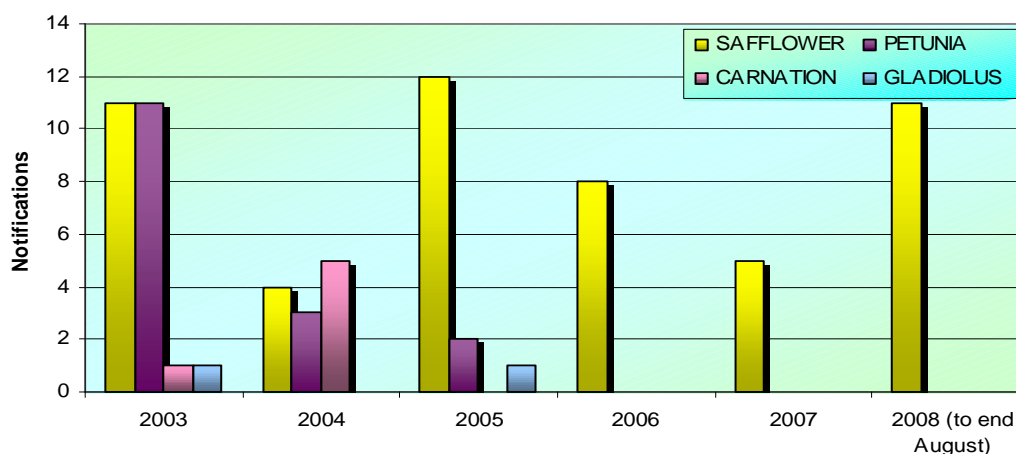


In 2008 there were six notifications for citrus crops (three in Spain for orange with modified aroma, flowering time or fungal resistance, two in Spain for *Carrizo citrange* with modified growth and development, and grapefruit modified for aphid and virus resistance). In addition there has been one notification for plum (USA, altered flowering time).

#### 4.9 GM Flower/Ornamental Plants – Category 1

In recent years a number of ornamental plant species have been genetically modified. These have been split into Category 1 and Category 2 based on the number of notifications. Category 1 includes safflower, petunia, carnation and gladiolus (see Chart 9).

**Chart 9 – Total number of experimental releases of category 1 GM flower/ornamental crops**

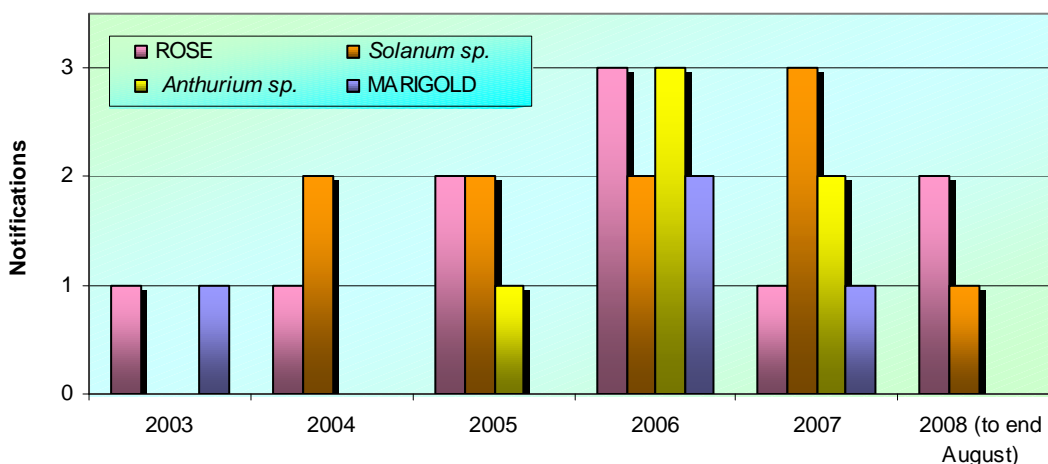


There have been 11 notifications for GM safflower in 2008, all in the USA, mainly for altered oil profile, but also for pharmaceutical product production.

#### 4.10 GM Flower/Ornamental Plants – Category 2

Category 2 GM Flower/Ornamental Crops includes rose, *Solanum* sp., *Anthurium* sp. and marigold (see Chart 10).

**Chart 10 – Total number of experimental releases of category 2 GM flower/ornamental crops**

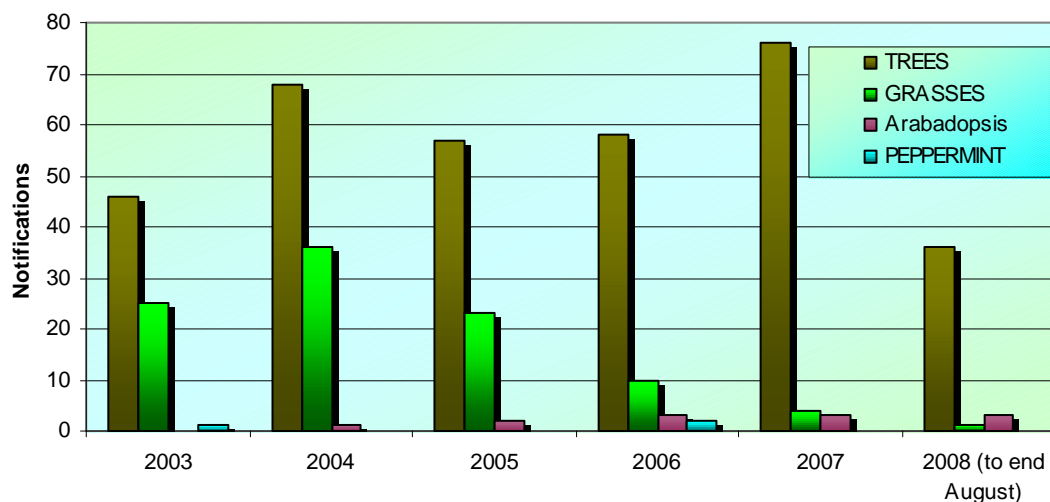


During the 2008 reporting period there have been two deliberate release notifications for rose, both of them in Japan for modified flavonoid biosynthesis, and one notification for *Solanum nigrum* (black nightshade) in Germany, modified in respect of ‘defensive genes’.

#### 4.11 Miscellaneous GM Species

‘Miscellaneous GM species’ encompasses those species that do not easily fit into the above categories. During the reporting period GM experimental release notifications were issued for various tree species, *Arabidopsis thaliana* (Thale cress) and various grasses (see Chart 11):

**Chart 11 – Total number of experimental releases of miscellaneous GM species.**



There were 36 notifications for the experimental release of GM trees in 2008. These included 31 in the USA (blight resistant chestnut, cold tolerant eucalyptus, poplar modified for phytoremediation or altered development, and pine with altered growth rate), as well as notifications in Belgium (insect-resistant poplar) and Sweden (poplar with altered wood composition for bio-ethanol production). There was one notification for GM grass in Australia (covering perennial ryegrass, tall fescue and *Lolium arundinaceum*, all for altered lignin and fructan metabolism). This represents a decline in the number of grass notifications, from a peak of 36 in 2004. There were three notifications for *Arabidopsis*, two in the USA (modified for herbicide tolerance or stress resistance) and one in Sweden (for altered development).

## 5.0 Additional Information/Notes

### NOTES to be used in conjunction with charts and tables

#### NOTE 1 – notifications:

In the majority of countries worldwide, any company, institution or body that wishes to undertake an experimental GM trial must submit a deliberate release notification to the relevant responsible body of that country. This notification is then assessed and, if it meets the necessary criteria, a declaration of consent is issued allowing the applicant to proceed with the release (subject to any conditions imposed). This report refers only to notifications that have been approved; any notifications that have been withdrawn or denied are not included. It should be noted that ‘approved’ refers to the fact that the regulatory authorities have given the go-ahead for the release(s) to take place, but does not indicate that the trials have actually gone ahead (although in the vast majority of cases it is expected they will have taken place).

#### NOTE 2 - number of deliberate releases:

Approval notifications often give authorization for several separate releases of the same GM line at different geographic locations. In addition, approved notifications often allow experimental releases over a number of years. The actual number of release trials, therefore, will be greater than the number of notifications shown in the graphs/tables. This approach, of issuing one notification for several trials, conducted over several years, seems to apply to most GM regulatory systems.

### ANNEX 1 – Sources of information/disclaimer

The information contained in this report is considered correct at the time of publication. The GM Inspectorate relies on a wide range of data sources to ensure that information presented is up to date and correct, and whilst every care is taken to verify this information the nature of the data sources means that authentication is not always possible. In a number of countries the experimental release of GM crops is not recorded in publicly available databases and the GM Inspectorate therefore cannot account for these.

#### General databases consulted in this study:

<http://www.agbios.com/main.php>  
<http://biosafety.ihe.be/>  
<http://www.fao.org/biotech/>

#### International Field Test Sources: databases consulted in this study:

Argentina: [http://www.sagpya.mecon.gov.ar/0-0/index/programas/conabia/index\\_conabia.htm](http://www.sagpya.mecon.gov.ar/0-0/index/programas/conabia/index_conabia.htm)  
Australia: <http://www.health.gov.au/ogtr/index.htm>  
Bolivia: <http://webdomino1.oecd.org/ehs/biotrack.nsf>  
Brazil: <http://www.ctnbio.gov.br/ctnbio/Sistema/LIBERACOE/Sogm.asp>  
Bulgaria: <http://webdomino1.oecd.org/ehs/biotrack.nsf>  
Canada: <http://www.cfia-acia.agr.ca/english/plaveg/pbo/pbobbve.shtml>  
China: <http://www.biosafety.gov.cn/>  
Czech Republic: <http://webdomino1.oecd.org/ehs/biotrack.nsf>  
Egypt: <http://binas.unido.org/binas/trials.php3>  
EU: <http://biotech.jrc.it/deliberate/gmo.asp>; <http://www.gmo-compass.org/eng/gmo/db/>  
Hungary: [http://biosafety.abc.hu/biosafe\\_eng.html](http://biosafety.abc.hu/biosafe_eng.html)  
India: <http://webdomino1.oecd.org/ehs/biotrack.nsf>  
Japan: <http://www.s.affrc.go.jp/docs/sentan/eguide/edevelop.htm>;  
[http://www.bch.biodic.go.jp/english/e\\_index.html](http://www.bch.biodic.go.jp/english/e_index.html)  
Mexico: <http://www.senasica.sagarpa.gob.mx/pagconasag/svtransgen.htm#ensayo>  
New Zealand: <http://www.ermanz.govt.nz/no/index.asp>  
Russian Federation: <http://webdomino1.oecd.org/ehs/biotrack.nsf>  
South Africa: <http://www.nda.agric.za/docs/GeneticResources/Geneticcontrol.htm>  
South Korea: [http://www.niab.go.kr/bio/english/database/database\\_search.jsp](http://www.niab.go.kr/bio/english/database/database_search.jsp)  
Switzerland: <http://webdomino1.oecd.org/ehs/biotrack.nsf>  
Thailand: [http://biodiversity.biotech.or.th/biosafety/doa/m\\_imp\\_gmo.asp](http://biodiversity.biotech.or.th/biosafety/doa/m_imp_gmo.asp)  
United States: <http://www.isb.vt.edu/cfdocs/fieldtests1.cfm>

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