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

Summary Report for April 2006 to August 2007

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Provided for:
Plant Variety Rights Office and Seeds Division, Defra

Contents

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Executive Summary

1. This quarterly report is the fifth in an ongoing series that aims to document the number and types of releases of genetically modified (GM) crops worldwide. The report covers the period April 2006 to August 2007 and provides summary information on 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: the European Commission announced it will approve a GM starch potato for cultivation – the first authorisation for the commercial growing of a GM crop in Europe since 1998; in France the area of Bt maize production has increased substantially; and in the USA Monsanto's 'second-generation' GM soybean has been granted commercial release, whilst the marketing of the company's herbicide tolerant alfalfa seed has been put on hold.

3. In terms of **commercial cultivation** of GM crops, the USA continues to dominate this sector with over half of the world's GM area, followed by Argentina, Brazil and Canada. EU countries growing GM maize commercially include Spain, France, Czech Republic, Portugal and Germany.

4. As far as **deliberate release** of GM crops is concerned, maize has seen the greatest number of new trials during this reporting period, with 719 notifications, followed by soybean with 259 notifications and oilseed rape with 223. The number of trials involving trees (various species) has increased dramatically, with 95 new notifications. There have also been 44 notifications for GM potato, 37 for GM tomato and 27 for wheat, as well as numerous smaller releases of minor GM crops.

1.0 Introduction

This is the fifth surveillance report on the worldwide status of genetically modified (GM) crops to be published by the GM Inspectorate for England, and covers the period 1st April 2006 to 31st July 2007. This report is produced 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

EC set to approve starch-rich GM potato
Date: 24/07/2007
The European Commission has announced that it will approve BASF's Amflora genetically modified potato for cultivation in Europe - the first authorisation for the commercial growing of a GM crop in Europe since 1998. The potato is genetically modified to produce large amounts of pure amylopectin for use in industrial applications, most notably paper making. BASF has also applied for approval for food and feed use under EU Directive 1829/2003, to allow the pulp by-product to be used as animal feed. The EC's approval statement followed a stalemate by the Council of Ministers, which handed the decision back to the Commission. BASF has said it envisages commercial cultivation will begin in 2008.
Source: http://www.foodnavigator.com/news/ng.asp?n=78450-basf-gmo-potato-starch

2.2 Additional news

Herbicide tolerant alfalfa grown commercially, then prohibited, in the USA
Date: 2006 and March 2007
Herbicide tolerant alfalfa (lucerne) was planted for the first time in the USA in 2006. Roundup Ready (RR) alfalfa is the first perennial biotech crop to be commercialised and was planted on 80,000 hectares, or around 5% of the 1.3 million hectares of alfalfa seeded in the US in 2006. In March 2007 however, followed a preliminary injunction by a US District Court, APHIS (the U.S. Department of Agriculture's Animal and Plant Health Inspection Service) announced that RR alfalfa is once again a regulated article, signifying that it can no longer be grown commercially. The court ruling concluded that APHIS had not adequately documented potential environmental impacts of the GM plant, and thus ordered an immediate halt to sales of the seed on the grounds that the genetically engineered gene could contaminate organic and conventional alfalfa. A future decision regarding the re-deregulation of RR alfalfa will be issued only after the completion of an appropriately documented environmental analysis. Currently RR alfalfa seed cannot be sold, but growers who had already

purchased RR alfalfa seed can go ahead and plant, harvest and sell their crop, as can growers who had previously planted RR alfalfa.

Source: http://www.isaaa.org/resources/publications/briefs/35/executivesummary/default.html and http://www.aphis.usda.gov/newsroom/content/2007/03/allfalfarr.shtml)

Australia to test drought tolerant wheat

Date: 20 June 2007

Australia is set to conduct its first field trials of transgenic wheat in 2007, with the experimental release of lines containing genes for drought tolerance. Scientists from the Victorian Department of Primary Industries, who are conducting the trials, hope that the GM lines will help alleviate possible future food shortages caused by drought. In the last few years changing weather conditions have threatened Australian agricultural production, with yield reductions of up to 50%, and the situation may get worse if predictions about global warming come true. Up to 30 GM wheat lines will be planted, containing genes derived from maize, thale cress (*Arabidopsis*), moss or yeast.

Source: http://www.foodnavigator.com/news/ng.asp?n=77490&m=1FNE620&c=nkzbeuggsxazvzn

Corn borer epidemic spurs GM growth in France

Date: 30 March 2007

Between 2005 and 2007 the area of GM corn in France increased more than forty fold, as the European corn borer population thrived. The maize growers' organisation Association Generale de Producteurs de Mais (AGPM) stated that in recent years there has been a marked extension in the geographic reach of the principal air-born maize pests across France. Humid conditions in summer 2006 meant that two to three generations of pests thrived and caused considerable damage in the south-west and centre of the country. Figures released by AGPM show that between 2005 and 2006 there was an increase in land devoted to cultivation of MON810 from 500 to 5200 hectares, and this jumped to 20,000 hectares in 2007. The AGPM says that use of the GM variant in conditions where corn borers are present justifies the higher cost of the GM seed resulting in increased profits of around €40 per hectare.

Source: http://www.foodnavigator.com/news/ng.asp?n=75383&m=1FNE330&c=kzldommuocyjajp http://www.gmo-compass.org/eng/agri_biotechnology/gmo_planting/191.eu_growing_area.html

USDA identifies rice in latest GM contamination

Date: 23 March 2007

The US Department of Agriculture (USDA) launched an investigation after low levels of adventitious GM presence were found in Clearfield 131 (CL131) rice seed, a long grain GM rice developed by BASF. APHIS also issued 'emergency action notifications' to inform distributors of the seed, which had been scheduled for planting in the spring, that it must be held until the agency concludes its investigation. Tests conducted at USDA laboratories revealed that the rice had been contaminated by LLRICE 604, a variety developed by Bayer Cropscience which had not yet been approved for commercialisation. In 2006 another GM contamination involving the GMO LL Rice 601 variety, caused major disruption to the US rice industry and resulted in a flood of lawsuits against Bayer by US farmers. LL Rice 601 has since been approved by USDA; LLRICE 604 remains a regulated article.

Source: http://www.foodnavigator-usa.com/news/ng.asp?n=75220&m=1FNU323&c=nkzbeuggsxazvzn

Human genes in rice spark new GM debate

Date: 06 March 2007

Genetically modified rice containing human genes has received preliminary approval in the US, leading GM opponents to question the potential risk of contamination of the food chain. California-based Ventria Bioscience has received approval from the US Department of Agriculture to cultivate over 3,000 acres of the rice in Kansas. The new

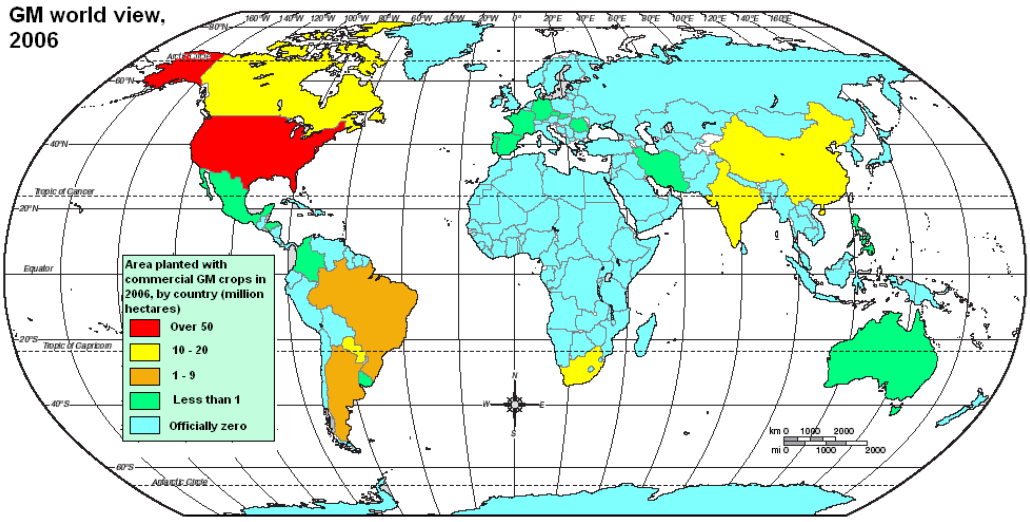
rice is genetically engineered to produce lactiva and lysomin, two proteins found naturally in breast milk, and reported to have significant potential against diarrhoea in children.
Source: http://www.foodnavigator-usa.com/news/ng.asp?id=74725-ventria-bioscience-gm-human-genes

USDA grants new soybean deregulation
Date: 8 June 2007
Following a review of the scientific data the USDA has deregulated Monsanto's GM soybean Roundup RReady2yield (MON 89788), which is genetically engineered to confer tolerance to the herbicide glyphosate. The trait, which is billed as a 'next-generation' soybean technology, is claimed to deliver a yield advantage of 7 to 11 percent over its first-generation Roundup Ready counterpart. Tests conducted under conditions of reproductive and physical confinement or isolation concluded the gene sequences from plant pathogens do not present a risk of plant pest introduction or dissemination. In July the Canadian government also granted approval for the planting of the soybean trait in Canada.
http://nutraingredients-usa.com/news/ng.asp?n=78806-usda-monsanta-soybean-gm?fromrss=1

3.0 Commercial cultivation of GM Crops

3.1 GM Crop Worldview:

In 2006 worldwide cultivation of GM crops increased to a new high of just over 100 million hectares, according to the latest ISAAA status report[1]. The report states that 10.3 million farmers in 22 countries grew GM soya, maize, rape and cotton, and in addition GM papaya, alfalfa, squash and rice were cultivated on smaller areas. The countries with the largest areas of GM crops are the USA, Argentina, Brazil, Canada, India and China (see GM world view map, below), with the commercial use of GM crops still basically limited to soybeans, maize, cotton and rapeseed.



[1] Published online, January 2007 – see:
http://www.isaaa.org/resources/publications/briefs/35/executivesummary/default.html

3.2 Country-specific information[2]:

USA: The USA is the leading producer of GM crops, with an area covering 54.6 million hectares, making up half of all worldwide GM cultivation. The primary commercial GM crops are soybeans, maize, cotton and oilseed rape, but there is also some production of GM squash and GM papaya. In 2006 GM alfalfa was grown in the USA for the first time, on 80,000 hectares.

Argentina: Since the introduction of glyphosate-tolerant soybeans in 1996 Argentina has become the world's second biggest producer of GM crops. Today, around 18 million hectares are planted, representing over 90% of Argentina's soybean area, almost 70% the maize area and around 60% of the cotton area.

Brazil: Monsanto's 'Roundup Ready' soybean and Bollgard cotton were approved in Brazil in 2004 and 2005 respectively and in 2006 the country cultivated GM crops on an area of 11.5 million hectares. In early 2007 LibertyLink corn, produced by German company Bayer CropScience, was approved for commercial cultivation.

Canada: Canada is the fourth largest producer of GM crops, with 6.1 million hectares sown in 2006. The crops grown are rapeseed, maize and soya.

India: The first application for commercialisation of a GM crop in India was accepted in 1996, but it was not until 2002 that the first crop, insect resistant Bt cotton, was introduced. Since then more applications for GM cotton have been cleared, but no other GM crops have been approved. In 2006 3.8 m ha of GM cotton were grown, making India the fifth largest producer of GM crops. Research is currently being carried out on GM chickpea, rice, cotton, tobacco, aubergine and mustard.

China: The Chinese government approved commercialisation of GM cotton, tomatoes, pimientos (Spanish pepper) and a species of Morning Glory (*Ipomoea cairica*) in the late 1990s. Commercial planting of Bt (insect resistant) cotton commenced in 1997 and at present more than 66 percent of China's cotton fields are growing GM varieties. However, so far, none of the major crops, such as rice, wheat and maize, have been commercialised in China. In early 2005 Chinese authorities approved several varieties of GM rice for human consumption but they were never fully cleared for licensing to farmers, although they have been used in farm-level pre-production trials, the last step before commercialisation. China is ranked sixth in the world in terms of GM crop production.

Paraguay: The seventh largest producer of GM crops in the world, with an area of approximately 2 million hectares dedicated to the cultivation of GM soya in 2006.

South Africa: In 2006 1.4 million hectares of GM crops were grown in South Africa, consisting of maize, soya and cotton, making it the world's eighth largest GM producer. Of this area, GM maize accounts for around 600,000 ha, with industry figures indicating that 29 percent of the country's yellow maize and 10 percent of white maize is derived from GM crops resistant to both insects and herbicides.

Uruguay: The ninth largest producer of GM crops in the world, with an area of around 0.4 million hectares in 2006, consisting of soya and maize.

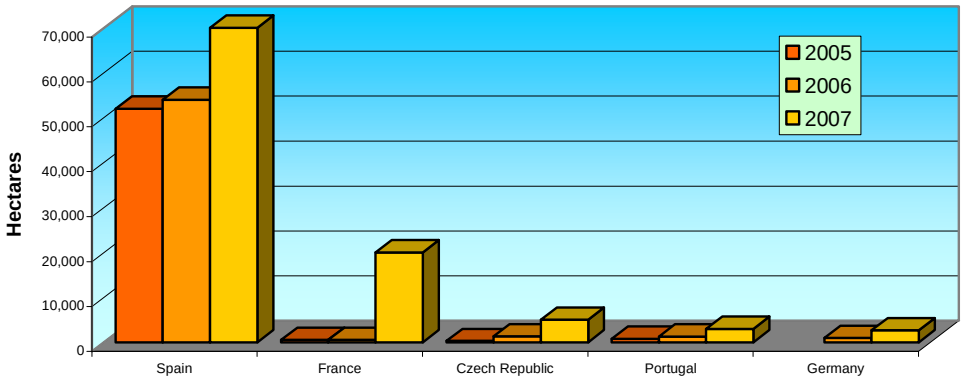
Philippines: at 0.2 m ha the tenth largest producer of GM crops, mainly producing GM maize.

EU: The cultivation of genetically modified plants in the EU continues to increase. In 2006 insect resistant maize cultivation comprised 62,000 hectares, or approximately

[2] Based on figures published by ISAAA, January 2007 – see: http://www.isaaa.org/resources/publications/briefs/35/executivesummary/default.html

1 percent of all maize cultivation. In 2007 this had increased to nearly 100,000 hectares, with plantings in Spain, France, the Czech Republic, Portugal and Germany (see figure 1). As of July 2007 there were 54 varieties of MON810 (engineered to resist European Corn Borer) listed in the EC Common Catalogue of Varieties. At present Bt maize is the only GMO under commercial cultivation in the EU.

Figure 1 – Area of GM maize cultivation in EU countries, 2005 to 2007



- **Spain** - a substantial amount of the maize production in Spain is of GM varieties – it is estimated that 15 percent of the current production falls under this category. Bt maize was first grown in Spain in 1998; by 2004 production had risen to 60,000 hectares, and in 2007 it was cultivated on 70,000 hectares;
- **France** - according to official counts, Bt maize production reached 500 hectares in 2005, predominantly in south-western regions, although some sources suggest that the actual total may have been twice the registered area, since farmers are known to have brought Bt maize seed from Spain. In 2006 5000 hectares were planted with Bt maize, and from 2007 all GM cultivations must be declared in a register, according to which approximately 20,000 hectares of Bt maize were sown.
- **Czech Republic** - in 2005 Bt maize was grown on 270 hectares. In 2007, this area increased to 5,000 hectares.
- **Portugal** - Bt maize was first grown here in 2005, with total commercial production covering approximately 780 hectares. In the 2007 season, 3,000 hectares were planted.
- **Germany** - since the 2006 growing season an number of Bt maize cultivars have had full approval in Germany and are available for commercial cultivation. In 2006 approximately 950 hectares were cultivated in Germany and in 2007 2,680 hectares were registered.
- **Slovakia** – according to the International Service for the Acquisition of Agri-biotech Applications (ISAAA), Slovakia grew a quantity of GM maize in 2006 (somewhat less than 0.1 million hectares), although exact figures are not provided.
- **Romania** - in the recent past Romania has cultivated Roundup Ready (herbicide tolerant) soybeans (115,000 hectares grown in 2006). Now that the country has joined the EU the cultivation of GM soya has been prohibited, however some observers think that removal of GM soya from the country's seed supplies may take many years, and could become a test case as to whether such 'decontamination' of seed stocks is possible.

4.0 Experimental release of GM plants/GM Crops

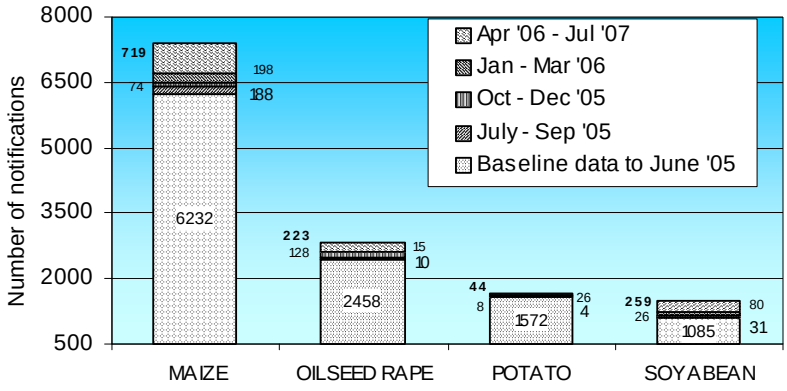
The following section provides information on the number of experimental releases of GM crops worldwide. Data has been sourced from various online databases and from general web searches, with the number of experimental releases primarily based on notifications issued by the relevant national or federal competent authorities (see Note 1 under Section 5.0 for a definition of the term 'notification'). Stacked bar charts show the number of releases for different plant species, and accompanying text summarise the information on a country-by-country basis and indicate 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 experimental releases conducted in these countries during the current reporting period will not appear until the end of the year.

Crops included in this section of the report are limited 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 (Group I)

'GM agricultural crops (Group I)' are those species having over 1000 GM deliberate release notifications worldwide since GM crop trials first commenced in the mid-1980s. Species that fall under this heading are maize, oilseed rape, potato and soybean (see figure 2, below).

Figure 2 – Total number of experimental release notifications of GM agricultural crops (Group I)



Notes to be used in conjunction with graphs:
Numbers within bars indicate releases prior to April 2005 ('baseline' data) for each crop species; numbers adjacent to bars show the number of releases at each subsequent reporting period. Releases for the current quarter are shown in **bold**.

Maize: 719 notifications, with the majority of releases taking place in the USA (545 trials), followed by Argentina (75), Spain (26), Japan (16), France (13), Romania (12) and Hungary (9), with a small number of releases in other countries. The main traits under development are insect resistance, herbicide tolerance and drought tolerance. Less common traits include increased yield, disease resistance, altered composition and altered oil quality.

Oilseed rape (Canola): 223 notifications, including trials in Canada (188), the USA (29), Japan (3) and Sweden (2). Traits include enhanced yield, herbicide tolerance, insect resistance and increased yield.

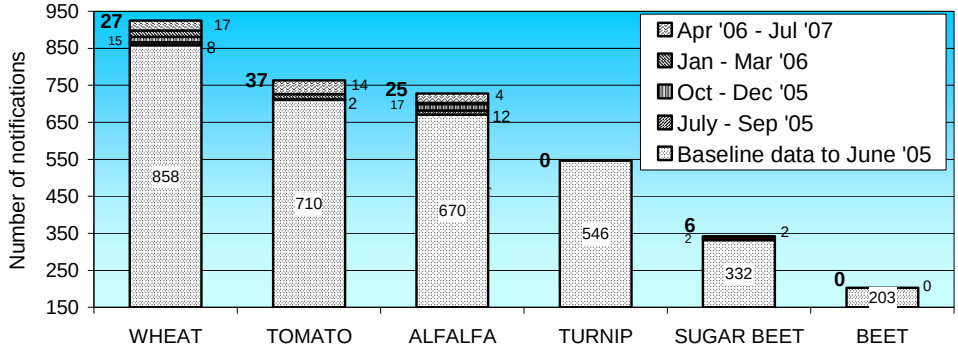
Potato: 44 notifications, with trials in the USA (27), Canada (7), Germany (3), Czech Republic (2), Spain (2), UK (1), France (1) and Poland (1). Traits include blight resistance, insect resistance, altered starch and cold resistance.

Soybean: 259 notifications, with trials in USA (206), Argentina (25), Canada (22), Japan (5) and Romania (1). Traits include herbicide tolerance, insect/pest resistance, altered oil, altered composition, yield increase and disease resistance.

4.2 GM Agricultural Crops (Group II)

'GM agricultural crops (Group II)' encompasses those species for which there have been 200 to 1000 GM deliberate release notifications worldwide. Most species that come under this heading are field crops (wheat, alfalfa, turnip, sugar beet and beet[3]), but tomato is also included in this category because of the high number of releases (see figure 3).

Figure 3 – Total number of experimental release notifications of GM agricultural crops (Group II)



Wheat: 27 notifications, with trials in the USA (21), Australia (2), Canada (3) and Germany 1. Traits undergoing evaluation include disease resistance, yield increase, drought resistance, salt tolerance and herbicide tolerance.

Tomato: 37 notifications, with all the trials taking place in the USA. A range of traits are being evaluated, including improved flavour, disease resistance, insect resistance, drought/heat tolerance and altered colour.

[3] The term 'beet' is used when the database does not specify which species is involved, hence this category is likely to include a combination of sugar beet, fodder beet and vegetable beets.

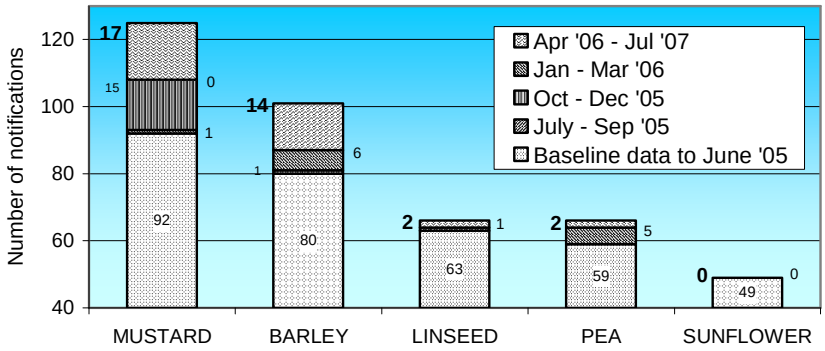
Alfalfa (lucerne): 25 notifications, with releases in the USA (17), Canada (4), Japan (3) and Argentina (1). Traits include herbicide tolerance and altered lignin.

Sugar Beet: 6 notifications, with trials in the USA (3) and Canada (2) and Japan (1). Traits include disease resistance and herbicide tolerance.

4.3 GM Agricultural Crops (Group III)

'GM crops (Group III)' encompasses species where there have been between 40 and 150 GM deliberate release notifications worldwide. Species that fall under this category are mustard, barley, linseed, pea and sunflower (see figure 4).

Figure 4 – Total number of experimental release notifications of GM agricultural crops (Group III)



Mustard: 17 notifications, consisting of Canada (15), Australia (1) and USA (1). Traits include herbicide tolerance, altered fertility and insect resistance.

Barley: 14 notifications, all issued for the USA, with traits including disease resistance, altered protein and softer endosperm.

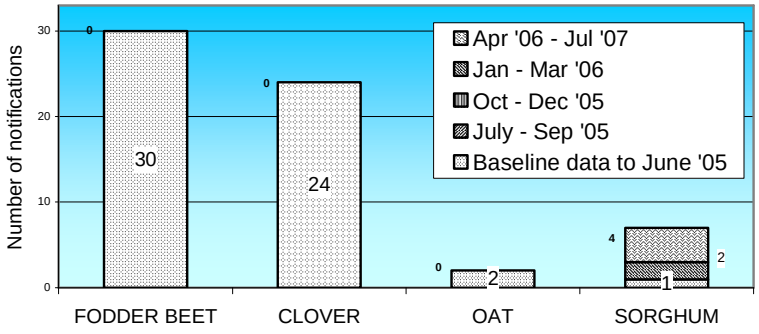
Linseed (flax): 1 notification, issued by the Czech Republic, containing modifications for use in breeding.

Pea: 2 notifications, 1 in the USA (trait unknown) and 1 in Germany (antibody production).

4.4 GM Agricultural Crops (Group IV)

'GM agricultural GM crops (Group IV)' includes those species for which there has been between 1 and 40 GM deliberate release notifications worldwide. Species that come under this heading are fodder beet, clover, oats and sorghum (figure 5).

Figure 5 – Total number of experimental release notifications of GM agricultural crops (Group IV)

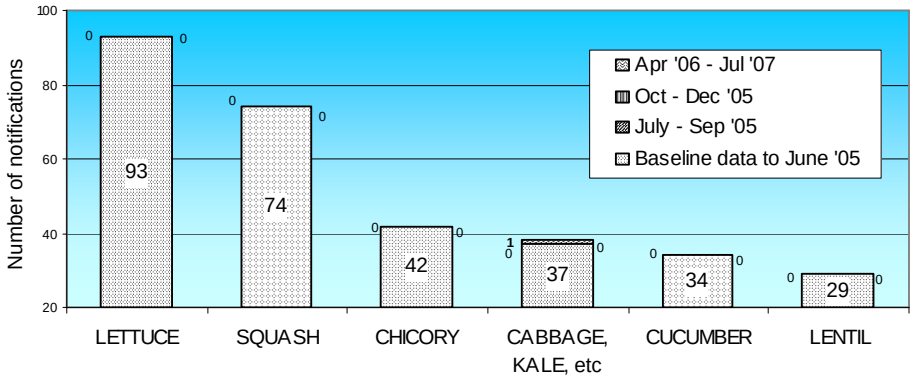


Sorghum: 4 notifications issued in the USA, with traits including altered food/feed properties and herbicide tolerance.

4.5 GM Vegetable Crops (Group I)

This category covers those species of vegetable crop for which there have been over 25 experimental releases. There has been just 1 experimental release of a GM vegetable species (*Brassica oleracea*) in this category during this reporting period (see figure 6).

Figure 6 – Total number of experimental release notifications of GM vegetable crops (Group I)

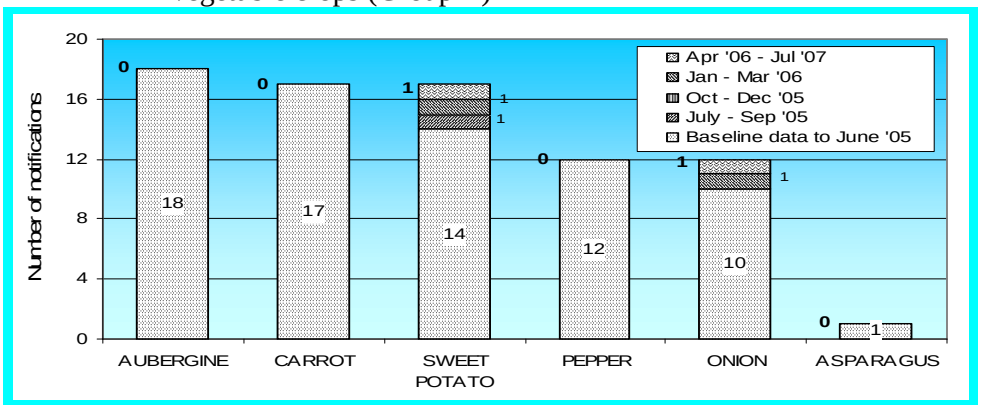


Cabbage, kale, etc. (*Brassica oleracea*): 1 notification issued by New Zealand, allowing the release of GM cabbage, cauliflower, broccoli and forage kale modified for resistance to caterpillar pests (taking place over a 10 year period).

4.6 GM Vegetable Crops (Group II)

'GM vegetable crops (Group II)' encompasses vegetable species for which there have been between 1 and 25 GM deliberate release notifications worldwide. During the reporting period the two GM experimental release notifications were issued (figure 7).

Figure 7 – Total number of experimental release notifications of GM vegetable crops (Group II)



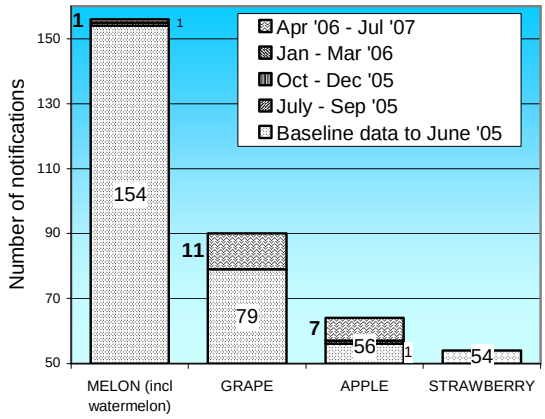
Sweet potato: 1 notification issued for the USA for herbicide resistance.

Onion: 1 notification issued for the USA for herbicide tolerance.

4.7 GM Fruit Crops (Group I)

'GM fruit crops (Group I)' encompasses crop species for which there have been over 50 GM deliberate release notifications worldwide. During the reporting period notifications were issued for melon, grape and apple (figure 8):

Figure 8 – Total number of experimental release notifications of GM fruit crops (Group I)



Melon: 1 notification for melon, issued for the USA for delayed fruit ripening.

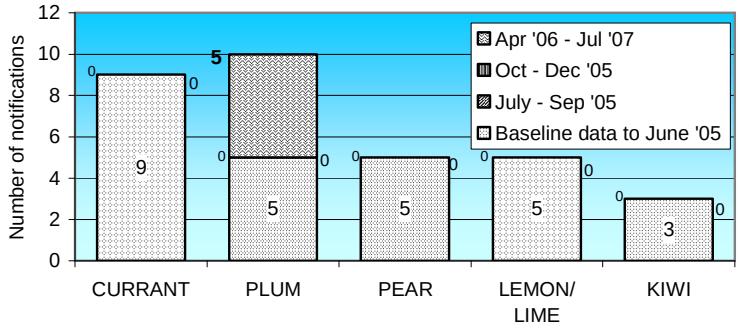
Grape: 11 notifications, all issued by the USA for disease resistance.

Apple: 7 notifications, all issued by the USA for disease resistance and non-browning.

4.8 GM Fruit Crops (Group II)

'GM fruit crops (Group II)' encompasses crop species for which there have been between 1 and 50 GM deliberate release notifications worldwide. During the reporting period the following GM experimental release notification were issued (figure 9):

Figure 9 – Total number of experimental release notifications of GM fruit crops (Group II)

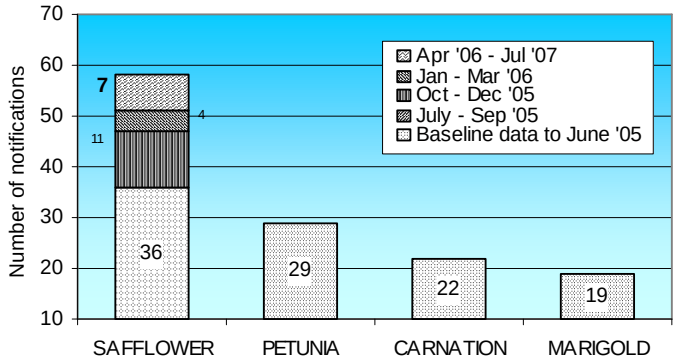


Plum: 5 notifications, including USA (3), Romania (1), Czech Republic (1), with traits including virus resistance, disease resistance and root rot/nematode resistance.

4.9 GM Flower/Ornamental Crops (Group I)

'GM Flower/Ornamental Crops (Group I)' encompasses species for which there have been over 10 GM deliberate release notifications worldwide. During the reporting period 7 GM experimental release notifications were issued for safflower (figure 10).

Figure 10 – Total number of experimental releases of GM flower/ornamental crops (Group I)

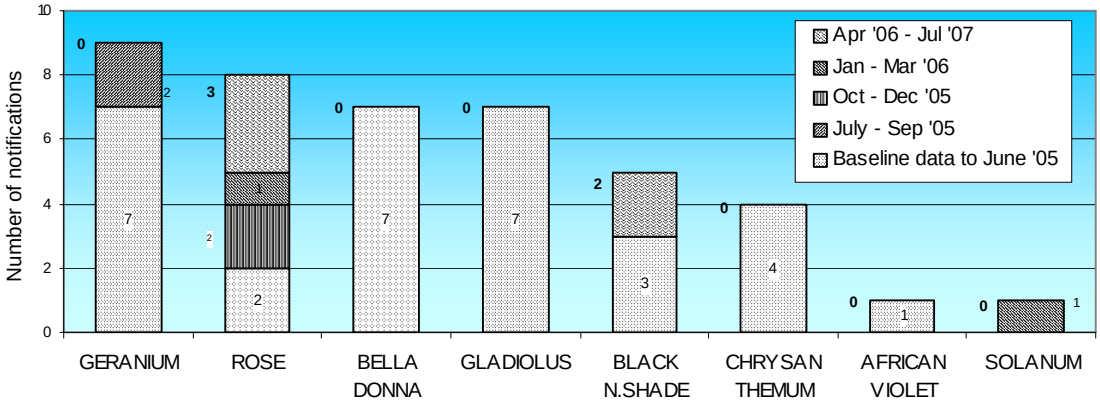


Safflower: 7 notifications issued, 2 for Canada and 5 for the USA, including herbicide tolerance and altered oil profile traits.

4.10 GM Flower/Ornamental Crops (Group II)

'GM Flower/Ornamental Crops (Group II)' encompasses species for which there have been between 1 to 10 GM deliberate release notifications worldwide. During the reporting period GM experimental release notifications were issued for the following crops (figure 11):

Figure 11 – Total number of experimental releases of GM flower/ornamental crops (Group II)



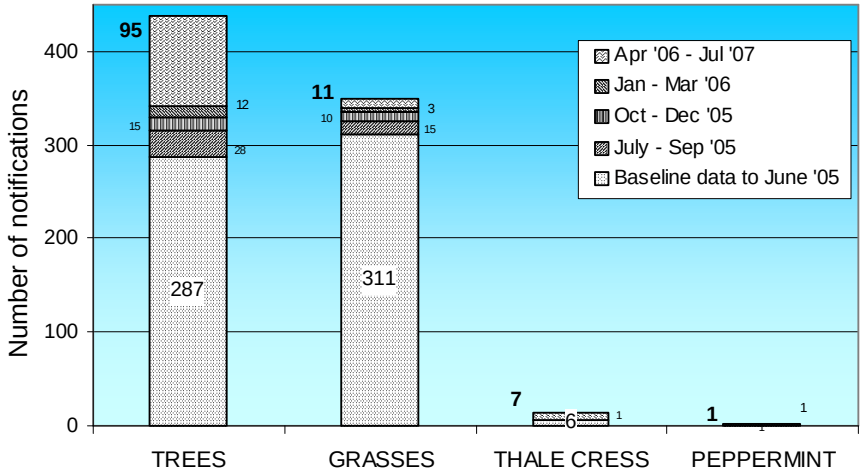
Rose: 1 notification issued by the USA for altered flower colour, 2 notifications in Japan for modified flavonoid.

Black nightshade: 2 notifications, both issued by Germany for 'defensive genes'.

4.11 Miscellaneous GM Species

'Miscellaneous GM species' encompasses those species that do not easily fit in any of the above categories. During the reporting period GM experimental release notifications were issued for trees, grasses, thale cress and peppermint (figure 12):

Figure 12 – Total number of experimental releases of miscellaneous GM species.



Trees: 95 notifications, including trials in the USA (91), Canada (3) and France (1). Traits include cold tolerance, altered lignin synthesis, altered growth rate, reduced stature, altered wood quality, bigger leaves, altered leaf morphology and disease resistance. Species include eucalyptus, pine, poplar, spruce and walnut.

Grasses: 11 notifications, including trials in the USA (10) and Denmark (1). Traits include cold tolerance, drought tolerance, herbicide tolerant and increased fructose. Species include Bahiagrass, Bermudagrass, Creeping bentgrass, *Festuca* and ryegrass.

Note: Monsanto's application for the deregulation of glyphosate tolerant creeping bentgrass (designated as event ASR 368) in the USA is still officially 'pending', prior to the preparation of an Environmental Impact Statement by APHIS.

Thale cress (Arabidopsis): 6 notifications, including USA (5), Denmark (2). Traits include disease resistance, altered flowering and the localisation of explosive components in soil.

Peppermint: 1 notification in the USA for herbicide tolerance.

5.0 Additional Information/Notes

NOTES to be used in conjunction with charts and tables

NOTE 1 – notifications: the number of experimental release trials shown is based on the number of deliberate release 'notifications' that have been approved worldwide for each GM species. A notification is a declaration of consent issued by the relevant responsible body allowing the applicant to proceed with the release (subject to any conditions imposed). 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, it 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 1 notification for several trials, conducted over several years, seems to apply to most GM regulatory systems, including the EU system.

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 are 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
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/LIBERACOESogm.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
India:	http://webdomino1.oecd.org/ehs/biotrack.nsf
Japan:	http://www.s.affrc.go.jp/docs/sentan/eguide/edevelp.htm; 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
Switzerland:	http://webdomino1.oecd.org/ehs/biotrack.nsf
Thailand:	http://biodiversity.biotec.or.th/biosafety/doa/m_impgmo.asp
United States:	http://www.isb.vt.edu/cfdocs/fieldtests1.cfm

GM News sites consulted in this study:

http://www.agbios.com/news.php
http://www.foodnavigator.com & http://www.foodnavigator-usa.com
http://www.greenpeace.org/raw/content/international/press/reports/gm-contamination-report.pdf
http://www.scidev.net/News
http://www.isaaa.org/
http://www.aphis.usda.gov/newsroom/
http://nutraingredients-usa.com/