



# GMOs

## Why consumers should take action

### CAMPAIGN GOALS

- Join Consumers International's campaign "*Consumers say NO to GMOs*"
- Stop the spread of GMOs to new countries, crops and foods.

The majority of genetically modified (GM) crops are grown in five countries and mainly controlled by three companies. Most countries still remain free of GM crops. Despite government subsidies and sustained efforts by the biotech industry, the area cultivated with GM crops is increasing only slowly.

The varieties of GM crops are still few in number, with industrial production in four main crops: soybean, maize, cotton and canola (rapeseed).

#### What is genetic engineering?

Genetic engineering (GE) is a relatively new technology involving the manipulation of genes by a process that transfers genes from one species to another, unrelated, species. For example, a gene can be transferred from an animal to a plant. This newly created genetically modified organism (GMO) will pass the genetic changes on to its offspring.

Genetic engineering is a technology developed and sold by corporate interests. Currently it is applied mainly to industrial agriculture, with crops generally bred to be herbicide-resistant or insect-resistant. Food produced by this technology is commonly referred to as genetically modified or GM food.

In 2004, approximately 8.25 million farmers in 17 countries grew GM crops, up from 7 million farmers in 18 countries the previous year, according to the International Service for the Acquisition of Agri-biotech Applications (ISAAA), an industry-funded body.

The ISAAA claims that, in 2004, some 81 million hectares were planted in GM crops. This is a 20% increase from 2003, but it remains concentrated in the five major GM-growing countries. These countries—**United States, Canada, Argentina, Brazil and China** – together account for 96.5% of global GM cultivation. Other countries growing GM crops are Paraguay, India, South Africa, Uruguay, Australia, Romania, Mexico, Thailand, India and the Philippines.

#### GM varieties

GM technology is concentrated in four major agricultural commodities – soybean, maize, cotton and canola (rapeseed).

Soybean accounts for 60% of the area planted in GM, and maize accounts for 23%.

With the exception of cotton, GM crops are grown mostly for animal feed, but they are also used to manufacture ingredients, like starches, oils and additives, present in many processed foods.

GM varieties of a handful of specialty crops, such as papaya, are being cultivated.

Research on GM varieties of rice and wheat, staple foods for much of the world's population, continues despite widespread resistance from consumers to commercial cultivation.

#### Questionable crop figures

Figures from the International Service for the Acquisition of Agri-biotech Applications should be treated with caution. ISAAA is partly funded by GM companies and does not reveal its research sources.

According to the Network of Concerned Farmers, "there are serious question marks over the accuracy of ISAAA claims. Many claims are made purely on the basis of producer estimates and some have been shown to be contrary to the findings of properly-controlled scientific studies."

#### GM crops, 2004

|           | % of world |       | Crop(s) grown                  |
|-----------|------------|-------|--------------------------------|
|           | Area*      | total |                                |
| US        | 47.6       | 59%   | Soybean, maize, cotton, canola |
| Argentina | 16.2       | 20%   | Soybean, maize, cotton         |
| Canada    | 5.4        | 6.7%  | Canola, maize, soybean         |
| Brazil    | 5.0        | 6.2%  | Soybean                        |
| China     | 3.7        | 4.6%  | Cotton                         |

\*millions of hectares

Source: derived from ISAAA.



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## The role of subsidies

Subsidies from governments and GM multinationals have led to increases in the area under GM crops.

Government subsidies totalling US\$1.6 billion were paid in 2004 to US soybean growers, a figure that is expected to increase in 2005 to US\$2.5 billion.

The International Cotton Advisory Committee reported in 2000 that both Chinese and US cotton farmers relied on government subsidies for up to half their income, as a buffer against falling cotton prices.

## Corporate ownership

Ownership of GM crop technology is concentrated in three multinational corporations: Monsanto, Bayer CropScience and Syngenta.

**Monsanto** is the market leader, providing GM seeds to farmers in the US, Canada, Argentina, India and South Africa. Monsanto is working to expand its markets and develop new crops, including two varieties of GM sugar beet developed with Syngenta.

In January 2005, Monsanto was fined US\$1.5 million for bribing Indonesian government officials to skip mandatory environmental assessment of its GM cotton. The company reportedly admitted paying over US\$700,000 in bribes in Indonesia between 1997 and 2002.

**Bayer CropScience** ranks number two in global agrochemical sales, with GM seed sales in the US, Canada, Argentina and Australia. The company is pushing hard for commercial cultivation of GM crops in Europe and India.

**Syngenta**, which was formed from the GM units of AstraZeneca and Novartis, sells GM seeds in the US, Canada and Spain.

## Patents

Patents give companies an exclusive right to exploit inventions (i.e. plant varieties "improved" through human intervention) for up to 20 years. Critics of the patent system see it as a form of theft of knowledge and resources from developing countries. Most patents on agricultural biotechnology have been registered in the United States by GM corporations.

Patent rights and royalties are a fundamental concern to farmers. In the case of soya, for example, Monsanto owns all patented GM soya seeds planted worldwide and collects royalties from the farmers who plant them. Under the terms of the contract with Monsanto, farmers are prohibited from saving GM soya seeds from their harvests to use for the next planting.

Publicly-owned agricultural institutes in China, India and Brazil have expressed interest in patenting their own varieties of GM crops.

## Seeds

Some of the world's largest seed companies are owned by GM corporations, and acquisitions in this sector continue. In January 2005, Monsanto paid US\$1.4 billion for the Seminis fruit and vegetable seed company, with the intention of incorporating genetic modification into its production.

On 17 February 2005, Monsanto announced plans to purchase Emergent Genetics Inc., the third largest cotton seed company in the United States. The purchase, for US\$300 million, is subject to regulatory approval.

## Unsubstantiated claims

**Economic returns to farmers from GM crops have been largely disappointing. In India, GM cotton (known as Bt cotton) has failed to live up to expectations for three years running. In South Africa, cotton farmers growing Bt varieties have been plunged into debt.**

**Nor have reductions in pesticide applications – as claimed by industry – taken place. On the contrary, pesticide use has risen by 4.1% on areas planted in GM crops.**

## Labelling of GM foods

The European Union's new Regulation on GM Food and Feed Labelling entered into force in October 2003. It requires that all products containing, consisting of or derived from GM ingredients be labelled, irrespective of whether or not they can be detected in the final product. The precedent-setting regulation could serve as a model for other countries. (See *Fact sheet 2*.)

## Public attitudes to GMOs

**High levels of public concern about GM crops exist both in countries where they are grown and in countries where they have yet to be introduced.**

**A January 2005 poll indicates that 92% of Canadian consumers have "some level of concern" about the long-term risks of GM products on human health. In Britain, public attitudes to GM foods are hardening. Some 61% of those polled in September 2004 by the UK consumer association *Which?* expressed concern about GMOs in food production – up from 56% in 2002.**

**Surveys in Canada, Australia and elsewhere indicate that up to 90% of consumers say they want labels on GM foods.**

**A February 2005 EU Markets report by Greenpeace states that 49 of 60 top retailers have a no-GM policy for their house brands.**

## Sources

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