# MONSANTO
# AND GENETIC MODIFICATION IN SOUTH AFRICA
## FACTS FOR SOUTH AFRICAN CONSUMERS

***"(The) full adoption of GM crops globally would result in income gains of US$210 billion per year within the next decade, with the largest potential gains occurring in developing countries at a rate of 2.1 percent gross national product per year".***[i]

## What is genetic modification?

The genetic instructions followed by a living cell to keep the body alive are contained in the cell's Deoxyribonucleic acid (DNA). Cells will follow foreign instructions if they can read and accept the instructions. Genetic modification or genetic engineering is the science of inserting foreign instructions into a host cell. The process can be likened to successfully inserting a new scene into a sequence of scenes in a film. The result, known as recombinant (newly combined) DNA, brings a new characteristic to the host cell. There are two major commercially recombinant DNA products available for use in agriculture. Their purpose is to enable crops to tolerate herbicide and to resist certain species of insects.

## Who is Monsanto?

The Monsanto Chemical Company was founded in the United States in 1901 and for several decades was associated with the production of chemicals for industry (e.g. PCBs), for the US military (e.g. Agent Orange, used in Vietnam), for food producers (e.g. the artificial sweetener, aspartame), and for agriculture (e.g. DDT). Monsanto's expansion into biotechnology since the 1980s has been accompanied by its acquisition of some of the largest seed companies in the world at a cost of approximately US$10 billion.[1]

## Seed companies taken over by Monsanto

| | |
|---|---|
| 1997 | Monsanto takes over Calgene and Asgrow. At the time Asgrow had the 4th largest share of the US maize seed market and the 2nd largest share of the US soya bean seed market. |
| 1998 | Monsanto takes over Dekalb Genetics. Dekalb had the 2nd largest share of US maize seed and the 3rd largest share of soya. |
| 1998 | Monsanto takes over Cargill. Cargill had seed research production and testing facilities in 24 countries and sales and distribution operations in 51 countries. |
| 1998 | Monsanto acquires various biotech research companies, including Ecogen, Agracetus and the UK-based Plant Breeding Institute |
| 1999 | Monsanto merges with Pharmacia and Upjohn to become Pharmacia. |
| 2002 | Monsanto purchases Sensako and Carnia, two of South Africa's largest seed companies |
| 2004 | Monsanto merges Carnia and Sensako (maize, soybean and sunflower seeds) under the Dekalb brand (Dekalb was the world's first seed company to seed maize hybrids, and is one of the largest maize seed companies in the world) |
| 2005 | Monsanto acquires Seminis, the world's largest seed company, at a cost of $1,400 million.[2] |

Today Monsanto is the leading producer of GM seeds in the world. The biotech giant's seed technology is used in at least 90% of all GM crops worldwide.

## Monsanto also profits from herbicides

Monsanto's Roundup is the world's top selling herbicide. Monsanto's approach has been to genetically engineer seeds in a way that promotes the use of the company's Roundup herbicide so

[1] Barboza, D, 2003. *Monsanto struggles even as it dominates.* New York Times.
[2] ETC Group, 2005. Global Seed Industry Concentration Communique #90.

that the corporation profits twice - from the sale of seeds and the sale of its herbicides. Monsanto's herbicide tolerant trait has been engineered into soybeans, maize, cotton and canola. The multinational's efforts to introduce a herbicide tolerant version of wheat in 2003 were thwarted when wheat farmers in the US and Canada and importers in Europe and Asia resisted.

Monsanto has more than 600 biotechnology patents for a wide variety of genetic engineering techniques and genetically engineered seed varieties. Monsanto's patents give it the sole rights to seeds as well as the methods for genetically modifying the seeds. Thousands of farmers have been investigated and many sued by Monsanto for patent infringement and violations of technology user agreements in Canada and the USA. Monsanto claims to have opened 600 cases of new seed piracy matters in 2003 and in 2004, 500 cases were reported. The final results of lawsuits are generally not made public because a clause in agreements signed by farmers prevents them from disclosing the terms of settlements.

Farmers who sign Monsanto's GM Technology User Agreements commit themselves to -
◊ using the GM seed they purchase for one season only;
◊ paying an additional technology fee for using the GM seed;
◊ purchasing Monsanto's herbicides.

Restrictions on the age-old practice of sharing and saving seeds for replanting are particularly severe for millions of farmers in Africa and elsewhere in the world because these restrictions dislocate the food sovereignty safety net, which has sustained them for generations. The continued use of the GM seeds will in time, replace the traditional seeds planted by these farmers and thereby result in the loss of genetic diversity.

## Monsanto in South Africa

South Africa has become a base for Monsanto's GM seed exports to other countries and for experimentation with new GM crops not approved elsewhere.

South African companies import Monsanto seeds for use for commercial planting, field trials, and for use as animal feed and human foodstuff. Importers for trials or commercial plantings include Monsanto itself, multinational companies Pioneer, Hi-Bred, and Advantam and local seed companies (Pannar and Afgri[3]). Local millers such as Bokomo, Ruto Mills, Epol and Meadow Feeds import GM seeds for use as animal feed, food and industrial processing. The World Food Programme, Rennies and the Canadian company Brisen have also used South Africa as a base for bringing GM food aid into Africa[4].

South Africa is the first country in Africa to allow the commercial growing and import of GM seeds for human and animal consumption. Despite resistance from countries such as Zimbabwe, Zambia and Angola, South Africa's GM-friendly regulatory framework, its advanced agricultural system, and its political influence in the region, make it an ideal gateway for the spread of genetically modified seeds into Africa. Control over South Africa's seed supply implies control over the commercial seed supply in the southern African region.

Monsanto's agrochemicals have been on the South African market since the late 1960s. They include pesticides, herbicides and fungicides. It is estimated that 895,584 metric tons of agrochemicals were used on South African cropland annually from 1994 to 1996[ii] and in 1997 retail sales of agrochemicals were valued at R1.3 billion.[iii]

In 1997, Monsanto Agriculture (South Africa) came into existence. Although Syngenta and other GM multinationals have entered the South African market, Monsanto remains the dominant player in the GM crop market in the country. Monsanto also takes licensing fees from several South Africa companies. Pannar is licensed for GM maize and soya, Pioneer is licensed for GM maize and

[3] A rapidly expanding company that emerged from the privatisation of the Oos-Transvaalse Ko-op (OTK) in the early 1990s.
[4] National Department of Agriculture (http://www.nda.agric.za/GMO/GMOpermits), various years

Delta & Pine Land (D&PL) South Africa, licensed Monsanto's Bt cotton technology for use in South Africa in 1993.

## The South African government works hand in glove with Monsanto

Since 1997, the South African government has been involved in a public/private partnership involving cotton farmers from the Makhathini Flats in Northern KwaZulu Natal. Farmers in the area have been provided with irrigation, infrastructure, subsidised inputs, and a guaranteed market for their harvest by the local government and Vunisa Cotton (which worked closely with Monsanto South Africa). Vunisa Cotton Company now longer exists and has been driven out of business by the Makhathini cotton company.

Initially the adoption rate of Monsanto's Bt cotton by the Makhathini farmers was as high as 90% but the amount of land planted with Monsanto's GM- seeds shrank from 276 hectares in 2000/2001 to 180 hectares in 2002/2003. The Makhathini experiment is still held up as an example of the benefits of GM technology for small- scale African farmers. However, only four out of 36 farmers interviewed in a study initiated by the NGO, Biowatch South Africa, made a profit, and close to 80% of the farmers defaulted on their loans.[iv]

Inspite of this, the South African government is subidising the further planting of Monsanto's GM cotton seeds in the Makhahthini Flats for 2006/7 planting seasons.

## Monsanto's PR Machinery

Industry lobby groups such as the International Service for the Acquisition of Agri-biotech Applications (ISAAA) play a significant role in promoting and sanctioning the spread of GMOs throughout the world. The ISAAA describes itself as "a not for-profit organisation that delivers the benefits of new agricultural biotechnology to the poor in developing countries",[v] is funded by Monsanto. In South Africa, Africa Bio, a pro-GM "forum for informed dialogue on biotechnological issues in Africa" uses similar strategies to that of the ISAAA to promote GM technology. Unrepresentative farmers are often used in public relations exercises aimed at presenting GM as the solution for poverty.

**Farmers: the new biotech pawns**

"Buthelezi was by Zoellick's side when the Trade Secretary formally announced a US WTO case against EU restrictions on GM imports. A month later, the Administrator of USAID, Andrew Natsios, described Buthelezi before a congressional panel on plant biotechnology in Africa. […] The Council for Biotechnology Information calls him a 'small farmer', and others describe his life as 'hand-to-mouth existence'. Administrator Natsios described him as a 'small farmer struggling just at the subsistence level.' However, independent reporters have revealed that, with two wives and more than 66 acres, he is one of the largest farmers in Makhathini, and chairs the area's farmers' federation encompassing 48 farmers' associations."[vi]

As public funds for research diminish, South African parastatals, research centres and academic institutions are becoming increasingly dependent on sponsorships from biotech corporations and consequently independent scientific opinion is increasingly hard to come by. Monsanto works closely with South Africa's Agricultural Research Council (ARC), a public institution, which receives funding from Monsanto and conducts some of Monsanto's field experiments in South Africa.

## Who stands to benefit from GM crops?

In January 2006, several groups, including the African Centre for Biosafety, collaborated with Friends of the Earth International to produce a report entitled, *Who Benefits From GM Crops? Monsanto and the Corporate-Driven Genetically Modified Revolution.* The report cites the negative impact of GM technology in Latin America, India, and Indonesia. Increased weed resistance, greater pesticide use, deforestation, destruction of agricultural biodiversity, lower yields, and the displacement of small farmers are some of the ramifications of GM crops. In addition, more and more cases are being documented showing that GM foods impact negatively on human and animal health.

In 2004 Monsanto accounted for 91% of GM soybean plantings worldwide, 97% of GM maize, 63.5% of GM cotton and 59% of GM canola. With its acqusition of Seminis in 2005, Monsanto entered a "high value, high growth segment in agriculture",[vii] the vegetable seed market, and is well on its way to realising its goal of replacing conventional seeds throughout the world with it's patented GM varieties.

## What can South Africans do?

As long as you as a South African consumer are unaware of what is at stake and fail to challenge the GM status quo, you leave the control of your food supply in the hands of global biotechnology companies like Monsanto. In Europe, recent polls show that 70% of the public do not want to eat GM food and approximately 95% demand labelling of GM foods so that they can make an informed choice. It is time for South African consumers to take action and demand enforcement of their rights.

## Act Now! Write to the Ministers of Health, Agriculture, Trade and Industry and Environment and Tourism and demand an end to GMOs in South Africa.

| | |
|---|---|
| Minister of Health:<br>Minister Mantombazana Tshabalala-Msimang<br>National Government<br>Private Bag X399 Pretoria, 0001<br>Telephone: 012-312-0546<br>Fax: 012-325-5526<br>Email: babaf@health.gov.za | Minister of Agriculture:<br>Minister Thoko Didiza<br>Private Bag X250 Pretoria, 0001<br>Telephone: 012-319-7236/7155<br>Fax: 012-321-8558<br>Email: secminister@nda.agric.za |
| Minster of Trade and Industry:<br>Minister Mandisi Mpahlwa<br>Private Bag X274<br>Pretoria<br>0001<br>Telephone: 012-394-1480/1568<br>Fax: 012-394-0337<br>Email: Tmagooa@thedti.gov.za | Minister of Environment and Tourism:<br>Minister Marthinus van Schalkwyk<br>Private Bag X447<br>Pretoria, 0001<br>Telephone: 021-465-7240<br>Fax: 021-465-3216<br>Email: mwillemse@deat.gov.za |

www.biosafetyafrica.net
Suite 3, 12 Clamart Road, Richmond 2092,
Johannesburg, South Africa
Tel +27 (0) 11 482-8948
Fax +27 (0) 11 482 8915

**Compiled by Melody Emmett for ACB with financial support from the Evangelischer Entwicklungsdienst e.V. (EED)**

The primary sources of information for this fact sheet are an African Centre for Biosafety briefing paper, **A Profile of Monsanto in South Africa** and Friends of the Earth, 2005. ***Who Benefits From GM Crops? Monsanto and the Corporate-Driven Genetically Modified Revolution***

[i] Monsanto, 2005. *World at a Glance. Conversations about Plant Biotechnology.* http://www.monsanto.com/biotech-gmo/biotechgmo.world.pdf
[ii] Earth Trends, 2003. *South African Country Profile*. http://earthtrends.wrl.org
[iii] Kirsty, J. and Gouse, M., 2002. *The Adoption and Impact of Agricultural Biotechnology Innovations in South Africa.* Working paper 2002-09. Dept of Agricultural Economics, Extension & Rural Development, University of Pretoria, p.4.
[iv] Pschorn-Strauss, E., April 2005. *Bt Cotton in South Africa: The Case of the Makhatini Farmers,* Biowatch South Africa.
[v] See http://www.isaaa.org
[vi] De Grassi, 2003. *Genetically Modified Crops and Sustainable Poverty Alleviation in Sub-Saharan Africa: An Assessment of Current Evidence.* Third World Network Africa.
[vii] Monsanto, January 2005. *Seminis Acquisition Investor Conference Call* in ETC Group, 2005. *Global Seed Industry Concentration.* Communique #90.