FactSheet

GREENPEACE
www.greenpeace.org.au

GENETIC ENGINEERING

Introduction

In recent years, a handful of multinational chemical companies have engineered new kinds of crops that could never occur in nature. These include corn that produces its own insecticide and canola immune to toxic sprays. Our food is under threat.

Greenpeace activists and banner in a GE canola field trial in Victoria, March 2008. ©Ascui/Greenpeace.

What is GE?

Genetic engineering (GE) is a radical technology that manipulates the genes and DNA of living things. Unlike traditional breeding processes, GE involves taking genes from one living organism and forcing them into another.

Using GE technology, genes from bacteria, viruses, plants and animals are inserted into crops – specifically soybeans, canola, corn and cotton – to grow commercially. These GE crops (also called genetically modified organisms or GMOs) are used in foods and sold in our stores.

Most processed GE foods are unlabelled. Millions of Australians are eating GE food and don't know it.

GE in Australia

Until now most of the food in Australia has remained GE free. However, that is all about to change. In 2008, the New South Wales and Victorian governments lifted their bans on the commercial GE canola crops. Canola is used in a wide range of products, including margarine, bread and many processed foods. Canola meal is also fed to livestock. Under current labelling laws none of these products have to be labelled if they contain GE ingredients.

Unpredictable and risky

Contrary to industry claims, genetic engineering is unstable, unpredictable and risky. New research, published in the leading scientific journal *Nature*, has revealed serious flaws in the science behind genetic engineering[1]. It suggests that rather than act individually, genes operate in a complex network and interact with each other in ways that are still far from understood.

This incomplete understanding of genetics explains why so many unexpected effects have occurred in genetically engineered crops. For example, a peer reviewed study released last year found evidence of liver and kidney toxicity in rats that had been fed a GE maize variety (MON863) approved for human consumption.[2]

Uncontrollable

Genetic engineering threatens our environment. GE crops can multiply, spread and pollute indefinitely. Once released, it is unlikely that they can be recalled, making their effects irreversible and posing long-term risks to the environment. More immediate risks include the contamination of non-GE crops, the creation of herbicide resistant "superweeds" and increased herbicide use.

The promised benefits of GE crops have not materialised. GE crops offer no benefits to farmers or consumers. Rather, GE represents a lucrative business for a handful of multinational chemical companies and a significant risk for the rest of us.

What we are doing

Greenpeace aims to stop the release of genetically engineered organisms into the environment and to promote ecologically sustainable food production and real food security.

Shoppers speak up!

When shoppers speak up, companies listen. All over the world, the voices and choices of shoppers have sparked a revolution at the checkout. In Australia, Greenpeace has produced the *True Food Guide* to rate brands according to their policy on GE. Shoppers use the guide to find out what they are really eating and how to inform food companies that they do not want to eat GE.

Check our constantly updated *True Food Guide* online at **www.truefood.org.au** to see which companies have removed GE from their foods, which are in the process of doing so, and which need to hear from you.

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Health concerns

According to Dr Judy Carman, spokesperson on GE food for the Public Health Association of Australia and director of the Institute for Health and Environmental Research:

"Concerns have been raised internationally over the safety of consuming GE foods. Some of these concerns include the use of antibiotic resistance genes in GE plants, which may lead to antibiotic-resistant bacteria in us.

"Another concern is our potential exposure to unfamiliar or unexpected proteins, toxins and allergens through eating GE food. In addition, GE agriculture may encourage a greater level of pesticides in our food.

"Current safety testing of GE foods is minimal. Tests are done by employees or businesses paid by GE companies. Test results are rarely published for scientific review. In Australia, Food Standards Australia New Zealand (FSANZ) is the sole body to assess these company documents."

An independent review of reports published by FSANZ has concluded that tests are inadequate and that GE foods have never been tested on humans.

The Austrian government recently banned a variety of GE canola after a Monsanto feeding study showed a 15 per cent increase in liver weight in rats fed the GE canola. The same canola has been approved for human consumption in Australia and can now be grown in New South Wales and Victoria.

GE foods not labelled

Ninety two per cent of all Australians want comprehensive labelling of GE foods[3]. But in Australia highly refined GE foods (oils, starches and sugars), freshly prepared foods (from restaurants and takeaways) and foods made from animals fed GE feed (such as meat, milk, eggs and honey) do not have to be labelled.

GE won't help combat world hunger

The multinational chemical companies that create GE crops claim that GE technology will feed the world. However, the world currently produces more than enough food for everyone. Politics and economics create mass starvation, not a lack of food. Furthermore, there is no evidence that GE crops increase yields.

GE crops won't help combat climate change

GE crops are not necessary to combat climate change, either as biofuels or food. There are no drought resistant GE crops commercially available anywhere in the world, and it is much easier to develop drought resistant crops using traditional breeding and modern biotechnology techniques such as marker assisted selection (MAS). Why use a risky technology when other technologies that don't pose the same risks can be used instead? MAS has already been successfully used in Victoria to develop non-GE drought tolerant canola, which should be available to farmers this year.[4]

Avoiding GE

In Australia, GE ingredients in processed food are currently derived from:

> imported canola, corn (maize) and soy;
> local and imported cottonseed products;
> products from animals fed on the above GE crops, such as meat and milk.

In late 2008 domestic GE canola will also make its way into the food chain unlabelled. Contact your food supplier and ensure they go GE-free from paddock to plate!

What you can do

> Join the True Food Network and be part of the growing community of Australians saying no to GE food. Join at: www.truefood.org.au

> Visit the True Food Network website to view the online *True Food Guide* and get active on GE. Voice your concerns to food companies. Connect with people Australia-wide acting to protect true food. Go to: www.truefood.org.au

> Call the 1800 numbers on food packaging and ask companies to go GE-free. Also ask them to guarantee that any animals used in making their products were not fed GE feed.

> Buy food that is certified organic, listed in the green section of the *True Food Guide* or where the producer has removed all GE ingredients from its supply chain, including animal feed. Choose fresh, unprocessed food, ideally grown locally and direct from farmers and farmers' markets.

Support GREENPEACE

If you want to help promote a GE-free future, make your voice heard and become a Greenpeace supporter today.

Telephone our supporter relationships team toll free on

1800 815 151

or use our secure online donation form at
www.greenpeace.org.au/donate

1. National Institutes of Health (NIH), New Findings Challenge Established Views on Human Genome, National Human Genome Research Institute website, 2007, www.genome.gov/25521554

2. Greenpeace, Regulatory systems for GE crops a failure: the case of MON863, Greenpeace Australia Pacific, Sydney, 2007. www.greenpeace.org/australia/resources/fact-sheets/GE/mon863-study

3. Taylor Nelson Sofres, April 2002 poll on genetic engineering

4. The Minister for Innovation and Minister for Agriculture, Media Release: Victorian Scientists Develop Drought Tolerant Canola, August 9, 2006, www.legislation.vic.gov.au/domino/Web_Notes/newmedia.nsf