



# Gene technology: support or oppose?

As with all major public issues, the critics and supporters of gene technology appear to hold widely varying points-of-view and within these two very broad groups of people there are still more variations on the issues. One way to illustrate the spread of opinion is to sample the ideas behind supporting and opposing the technology.

## THE TECHNOLOGY

SUPPORT	OPPOSE
Gene technology can speed up conventional breeding and/or produce products with improved characteristics – such as crops tailored for climatic conditions, healthier foods, and crops for industrial and pharmaceutical uses.	Genetic modification is tampering with nature. It is different from traditional selective breeding because it involves mixing genes from species that could never interbreed naturally.

## HUMAN HEALTH AND SAFETY

SUPPORT	OPPOSE
Research using gene technology is underway to produce tastier, healthier and nutritionally-improved foods, for example healthier oils and modified starches targeting diseases such as obesity and diabetes.	For all its so called promises, gene technology has failed to deliver any product with a direct consumer benefit.
All GM food commercially available has been rigorously assessed. Genetically modified foods have been consumed for over a decade with no evidence of adverse effects.	There is no conclusive proof that GM foods are safe.
Australia has a world leading regulatory system in place that protects human health and safety and the environment and ensures the responsible use of gene technology.	Regulation in Australia is not sufficient and should extend beyond human health and the environment.

## GM CROPS AND THE ENVIRONMENT

SUPPORT	OPPOSE
Using gene technology, plants can be modified to grow in difficult climatic conditions. Drought and salt tolerant, water-efficient and frost hardy plants are all in the research pipeline.	Agriculture and the environment will be irreversibly altered. GM crops could have a competitive advantage and drive out natural plants and animals.
GM crops have delivered positive environmental benefits and many studies have been conducted globally to measure their environmental impact.	Genetic pollution could happen. Over time, all kinds of plant and animal genes may spread uncontrollably throughout the environment with unwanted consequences.
GM insect resistant crops result in reduced insecticide use which benefits the environment and local communities. In Australia pesticide applications have decreased by 85 per cent in the cotton industry as a result of GM varieties.	There has not been enough research into the long-term impacts of these GM crops on the soil, beneficial insects and birds.
Herbicide tolerant (HT) GM crops are a more environmentally friendly crop, as they allow more benign weed killers to be used. Canola growers in Canada reported less herbicide use and easier weed control as a result of GM HT varieties.	If herbicide tolerant plants breed with related weeds, the resulting plants may become resistant to the weed-killers possibly requiring stronger chemicals to destroy them.

## CONSUMER AND PRODUCER CHOICE

SUPPORT	OPPOSE
Foods derived from GM crops must be labelled in Australia. This facilitates consumer choice.	The current GM food labelling system does not provide sufficient information about which foods are GM.
Tolerance levels or adventitious presence (AP) thresholds exist in agriculture to manage production and ensure that end products meet market specifications. GM crops will fit into this system.	Consumers do not want GM crops.
Coexistence and traceability systems are being used successfully in agriculture to manage crops and deliver choice in the marketplace.	Coexistence is not possible and mingling of GM and non-GM crops is inevitable.

## GM CROPS IN THE MARKETPLACE

SUPPORT	OPPOSE
GM crop bans in place within some states and territories should be lifted to enable producers to access the benefits of these crops which are already used by more than 12 million farmers globally.	If Australia commercialises further GM crops products have the potential to be locked out of key export markets.
Countries growing GM crops are finding ready markets for their produce.	More time is needed to consider the market risks associated with the production of GM crops

## GENE TECHNOLOGY, ETHICS AND PATENTS

SUPPORT	OPPOSE
Foods containing ethically sensitive genes will be fully labelled. Australia's regulatory framework has seen the establishment of an Ethics Committee to address these issues.	Genes have been introduced into plants from bacteria, viruses, other plants and even animals in research laboratories. This raises serious concerns for many people, in particular vegetarians and those with certain religious beliefs.
Patents are necessary to support innovation in gene technology. The technology is very expensive and organisations need to get a return on their investment. Patents only apply to specific genetic modifications. Breeders and farmers can continue to use their breeding stock and traditional crops.	The extent of patent protection, such as patenting of whole species, is a real concern.
Patents do not necessarily result in the technology being monopolised – patents and technical rights from 32 companies and research institutions were given freely to the 'Golden Rice' humanitarian project.	At present, it is mainly multinational corporations who hold patents on gene technology products. Plant varieties from developing countries may be modified and patented, and not be affordable by the country of origin.