BioMelbourne Network
Progressing BioIndustry

Wednesday, 15 August 2007

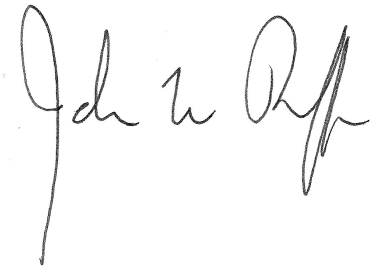
GM Crop Moratorium Review Secretariat
NSW DPI, Locked Bag 21,
Orange, NSW, 2800
Email: gmcrops.review@dpi.nsw.gov.au

Dear Review Panel

RE: SUBMISSION TO THE NEW SOUTH WALES GOVERNMENT'S REVIEW OF THE MORATORIUM ON GM CANOLA

On behalf of the BioMelbourne Network I am delighted to provide the following submission to the New South Wales Government's Review of the Moratorium on GM Canola

Yours sincerely



Dr John Raff
Chairman

Attachments:
1. Organisational details;
2. Submission;

Attachment 1
Organisational details

1. Details of organisation providing the submission:

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2. Background of BioMelbourne Network

BioMelbourne Network represents Victoria's leading research institutes, universities, biotechnology businesses, government agencies and service providers.

Through our members we have created a leadership forum that is a strong voice to advocate for and influence the direction of the industry.

BioMelbourne Network has over 160 members which represent almost 40% of the market capitalisation of the ASX Health Care and Biotechnology Index, leading global pharmaceutical companies, major multibillion-dollar agribusinesses, all the top tier advisory firms and more than 42% of NH&MRC funding for academic organisations.

A full list of the Network's members can be found at www.biomelbourne.org.

Attachment 2

Submission to the New South Wales Government's Review of the Moratorium on GM Canola

The BioMelbourne Network believes that this Review is both timely and necessary. The future economic growth and prosperity of our country – particularly the key canola growing states of South Eastern Australia (Victoria, South Australia and New South Wales) – depends on the development of more innovative, export oriented and technology-based industries.

1 Summary

The global food-production landscape is constantly changing, and growers have long been reliant on new technologies as a means of competitive advantage. GM technology is quite simply a logical extension of the tools available for the domestication and commercial exploitation of crops. The ability to harness innovation is essential for Australia's food production industries, which are looking to new technology to increase profit margins and transform industry outputs from commodity to value-added products.

With a growing world population, markedly higher energy costs and the potential effects of global climate change, the efficient production of food is becoming increasingly important.

With the current review of the GM Moratoria in Victoria, South Australia and New South Wales and the Office of the Gene Technology Regulator's (OGTR) approval of Bayer's Invigor Hybrid Canola and Monsanto's Roundup Ready Canola for commercial planting in Australia, the BioMelbourne Network has established a whole of value-chain working group to capture a share of the voice on this particular issue and the general issue of the application of new technologies to food production.

It is the considered opinion of the BioMelbourne Network's working group that the Moratorium was imposed due to concerns about trade and market access. In the four years since the imposition of the Moratorium much has changed. There is now overwhelming support from farmers through to technology providers, grain handlers, marketers and the general community for removing the Moratorium, and allowing everyone the choice of using GM canola.

Indeed, if left in place, the Moratorium would significantly dampen future investments in the whole food industry and place at risk the potential future agronomic, social, environmental and economic benefits which GM technologies can provide across the whole country.

BioMelbourne Network members, representing various elements of the food production value chain, state cohesively and consistently that the Moratorium on GM canola in New South Wales should be lifted to:

1. provide certainty for future investment in new product development;
2. provide primary producers and food exporters with the ability to develop clear paths to market for their approved GM products;
3. ensure Australia's primary producers and food exporters remain globally competitive across canola and other agricultural sectors;
4. provide opportunities for future development of technologies which are aimed at addressing the impact of climate change, especially in relation to food and water security;
5. provide a consistent national operating environment for food producers and
6. provide food producers, suppliers and consumers with the freedom to choose to develop and/or consume GM foodstuffs.

2 Scope of BioMelbourne Network Submission

The Network's submission addresses the trade, investment and market access considerations of the Review of the GM Moratorium in relation to the *NSW Gene Technology (GM Crop Moratorium) Act 2003* (the Act).

3 Industry cohesion and certainty

There is a consistent view across primary producers – crop, meat [using feedlot], dairy and food manufacturers – that they should have the freedom to choose to access GM canola and any future approved GM products.

Farmer organisations including the Australian Dairy Industry Council Inc[1] (ADIC), National Farmers Federation (NFF), Victorian Farmers Federation (VFF), United Dairyfarmers of Victoria (UDV), the Federation of Animal Science Societies[2] (FASS), the Grains Council of Australia, the Australian Food and Grocery Council[3] (AFGC) and the Australian grains industry, identified under the Single Vision Grains Australia[4], all support having the capacity to choose to use approved GM crops. The current Moratorium does not allow choice.

Moreover, the Australian Oilseed Federation[9] (AOF) states in its latest strategic plan there is industry concern that Australia will be left behind and frozen out of markets in the next 5 — 10 years if biotechnology as a tool is not available to it.

Significant support exists from the CSIRO[10] and the Agriculture and Food Policy Reference Group[11] for Australian primary producers and food manufacturers to have access to approved technologies which will lead to sustainable competitive advantage.

The Reference Group also states:

> *"State governments should lift their moratoriums on the commercial use of GM crops immediately, and work with the Australian government, industry and researchers to achieve nationally*

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[1] *ADIC GM Plant Policy* p1

The Australian dairy industry must consider its capacity to have the choice of further researching, testing and potentially utilising GM plants into the future

ADIC Policy Review Sheet 3

Feeding of approved GM stockfeed has no effect on production or on livestock products.

[2] *Agrifood Awareness Information Paper 5* p2

The Federation of Animal Science Societies (FASS), a federation comprising over 10,000 dairy, meat and poultry scientists have stated that meat, milk and eggs from livestock and poultry fed GM feed are safe to eat

[3] *AFGC GM food policy*

The AFGC strongly advocates the regulatory regime established through the OGTR and FSANZ. It provides confidence in the regulatory safeguards governing the development, release and labelling or products made using gene technology.

[4] www.afaa.com.au

[9] *Australian Oilseeds Federation Strategic Plan 2010*

[10] *Agrifood Awareness Gene Technology in Australia* p16

CSIRO: There is a window of great opportunity for Australia, its community and industries, in the adoption of biotechnology research, particularly gene technologies. These give Australia scope to improve our health, create a safer and more secure food supply, generate prosperity and attain a more sustainable environment.

[11] *Creating our Future Agriculture and food policy for the next generation* p91

Other farmers around the world are rapidly adopting crop varieties that are genetically modified for traits such as insect resistance and herbicide tolerance.… If Australia falls behind in this rapidly developing area of innovation, it will lose ground to competitors whose investment in, and adoption of, biotechnology is racing ahead.

consistent traceability and tolerance protocols, and to clarify legal liability issues surrounding the use of GM organisms in agriculture and food products."[12]

There is also support from the banking industry as Wayne Carlson, General Manager NAB Agribusiness, for the National Australia Bank Limited states:

"Australian agriculture operates in an environment of declining terms of trade. To offset this long-term trend, farmers must continually seek productivity gains and many farmers, particularly the larger and smarter operators, have lifted productivity. Indeed, compared to other industries in Australia, agriculture has an excellent track record in achieving productivity gains – around 3.5% per annum over the last 35 years.

The cropping industry in particular has a strong track record in adapting to change. It is essential that Australian farming keeps exploring more efficient production practices and technology options to remain globally competitive and viable into the future."

4 Market issues – Impact of Moratorium on agricultural exports

While agriculture's share of Australian GDP has declined (3.6% in 1980s to 2.7% from 2002-05) more than 60% of the Australian land mass is devoted to agriculture.

The relative decline of agriculture's importance to GDP reflects the growth of services, mining and manufacturing sectors, and the effects of the 2002-03 and 2005-06 droughts.

However, Australia's agricultural sector is strongly export-oriented, accounting for around a fifth (A$6.5billion[13]) of Australia's merchandise exports in 2004-05.

Canola is a major contributor to the scale and efficiency of Australian cropping. Canola is the third most important winter crop grown in Australia and is grown in rotation with wheat and pastures. It is important because it is a source of protein and oil and it facilitates yield increases of up to 20%[14] in the following wheat crop, as it is acts to suppress diseases and pathogens of the other crops in the rotation.

In 2004-05 Australia produced 1.5 million tonnes of canola worth A$503 million and exported 60% of this production. Australia's canola (seeds and processed oil) exports accounted for 19% of world canola trade. Almost half of Australia's exported unprocessed canola is sent to Japan[15].

For Australia to continue to build its international market presence in canola, it must compete against other canola producing nations especially Canada. Canada dominates the world export market with a 71%[16] market share in the three years to 2005-06. 79% of Canada's canola production is GM, however, virtually all is considered GM as there is no segregation. Its exports reached record levels in 2006.

The ability of Australian canola producers to effectively compete against Canadian exports is hampered by their inability to access new canola varieties. Moratoria against the commercial release of Bayer's Invigor Hybrid Canola and Monsanto's Roundup Ready Canola exist in the main canola growing states in Australia. These Moratoria impose a substantial cost on Australian farmers and the economy as a whole. Research by Australian Bureau of Agricultural and Resource Economics (ABARE) estimated a cost to Australia of

[12] *Creating our Future Agriculture and food policy for the next generation* p102
[13] *ABARE Agriculture in Australia: Past, Present, Future* p4, 6
[14] *Conservation Farming Systems and Canola 2003,* Dr Rob Norton of The University of Melbourne
[15] *Issues Paper: Review of the Moratorium on Genetically Modified Canola* p15-16 Victorian Department of Primary Industries
[16] *Agrifood Awareness Information Paper 12*

between A$1.5 billion and A$5.8 billion in gross national product forgone over the next ten years, should the current moratoria continue[17].

The Australian Oilseed Federation (AOF)[18] states the application of GM technology is giving yield and cost advantage to North and South American producers to the detriment of Australian canola producers.

The view that Australia could be placed at a competitive disadvantage if it does not manage the adoption of GM crops appropriately is reiterated by ABARE[19], as some of Australia's major competitors, such as US, Canada, Argentina and Brazil, already make substantial use of GM crops.

Australia could also lose its current advantage as other countries use GM technology to develop competitor varieties, possibly with additional "Australian-like" attributes. In North America, research is underway to develop GM wheat to emulate the attributes of Australia's prime hard wheat, possibly threatening Australia's strong position in the Asian markets[20].

5 Market issues – Potential Australian productivity improvements

Australian growers do not have the benefit of agricultural subsidies, unlike many of their competitors. Australian growers have always relied upon technological advancement as a means of competitive advantage. The Moratorium denies them this advantage.

GM canola offers Australian producers a number of opportunities for productivity improvements. According to Dr Rob Norton[21] of The University of Melbourne, the benefits of GM canola range from

- sowing earlier due to better weed management options;
- decreased herbicide use [640 tonnes less triazine herbicide per annum];
- increased yield of 295,000 tonnes per annum [from 1.27 tonnes to 1.38 tonnes per hectare]; and
- 20% increase in yield for wheat crops following rotation with canola as it is a highly regarded break crop[22].

These benefits would generate an additional A$135 million to the wheat and canola industries annually.

[17] *Creating our Future Agriculture and food policy for the next generation* p96
[18] *Australian Oilseeds Federation Strategic Plan 2010*
[19] *ABARE Agriculture in Australia: Past, Present, Future* p20
[20] *Creating our Future Agriculture and food policy for the next generation* p101
[21] *Conservation Farming Systems and Canola 2003*
[22] *Market Acceptance of GM canola* ABARE Report 07.5 March 07, p17

6 Market issues – GM crops – Global impact

The whole of Australia is currently missing out on access to the economic and environmental benefits of GM canola. Australia's major export competitors are readily accessing the productivity improvements that GM crops provide.

PG Economics, in its 2006 report[23] notes that there have already been significant positive environmental and economic impacts from the adoption of GM crops in key GM producing countries including:

- substantial net economic benefits at the farm level amounting to US$5 billion in 2005 and US$27 billion for the decade to 2005;
- reduction in pesticide spraying by 224 million kg (equivalent to about 40% of the annual volume of pesticide active ingredient applied to arable crops in the European Union) and as a result, decreased the environmental impact associated with pesticide use by more than 15%; and
- a significant reduction in the release of greenhouse gas emissions from agriculture, which, in 2005, was equivalent to removing four million cars from the roads.

  This would effectively remove the environmental impact of all registered cars in Victoria.

A 2000 report[24] commissioned by the Canadian Canola Council to qualify and quantify the agronomic and economic impacts of GM canola found that the direct economic impact to growers of the adoption of GM canola from 1997 to 2000 is within the range of C$144-C$249 million.

Obviously buoyed by their success in producing seven million tonnes of canola a year since 2003, The Canola Council of Canada is now aiming to more than double this output figure by 2015. While highlighting many of Canada's strengths in seeking to produce 15 million tonnes of canola over the next few years, the study also highlights what it sees as Australia's market deficiencies.

> *"Australia has been plagued by production problems in recent years due to drought. Additionally, the continuing moratorium on GM canola is believed to be damaging Australia's long-term production competitiveness. However, it can be expected that Australia will attempt to respond to demand signals and will eventually approve production of GM varieties. With higher levels, Australia would impact Canadian exports to Japan, Pakistan and the EU."*[25]

[23] *Global Impact of Biotech Crops: Socio-Economic and Environmental Effects in the First Ten Years of Commercial Use* http://www.agbioforum.org/v9n3/v9n3a02-brookes.htm

[24] http://www.canola-council.org/manual/GMO/gmo_main.htm

[25] http://www.canola-council.org/PDF/supplyresearchnews.pdf

7 Market issues – Supply chain management and segregation

The Australian grain handling system is technically and commercially capable of meeting a range of GM tolerance demands if GM canola were made commercially available to Australian farmers[26].

An ABARE report on identity preservation[27] concludes that while there will be costs involved in managing GM grains through the grain supply chain such costs appear "modest and manageable."

In fact, the Australian grains industry, identified under the Single Vision Grains Australia banner, released earlier this month a comprehensive plan outlining the entire supply chain's ability to meet canola market needs. The *Delivering Market Choice with GM Canola*[28] report clearly states that the Australian grains industry has the capacity to deliver and manage the commercial introduction of GM canola.

Since the Moratorium was put in place, the Australian grains industry has reviewed the market requirements for GM canola, and is now ready to incorporate approved GM varieties into the supply chain. The industry considers that the commercialisation of approved GM canola should proceed without further delay.

The document clearly identifies the many protocols, processes and practices in place along the entire grains supply chain in Australia which deliver market choice for such crops as special malting barley, noodle wheat, canola, sunflower and maize varieties.

> *"Major Australian grains industry stakeholders have agreed that Australia is now ready to adopt GM canola, and are committed as demonstrated by their endorsement of this document to deliver market choice."*[29]

Canadian experience to date suggests limited consumer demand for segregated non-GM canola. Japan is a key example as it is often cited as a market which is fearful of GM crops. However, most of its canola imports come from Canada which does not segregate GM from non-GM. Moreover, Japan blends its Canadian and Australian canola upon receipt.

In Australia, we already have systems to segregate our grains for quality traits. Segregating for GM will not place a substantial burden on the supply chain so long as we accept reasonable tolerance levels. Internationally, tolerance levels of around 1% are generally accepted.

[26] *Genetically Modified Canola Market issues, industry preparedness and capacity for segregation in Victoria* ACIL Tasman and Farm Horizons p xiii, xiv, xviii

[27] *GM Grains in Australia: Identity Preservation* ABARE report 06.25 Dec 06

[28] http://www.afaa.com.au/pdf/Delivering_Market_Choice_with_GM_canola.pdf

[29] http://www.afaa.com.au/pdf/Principles_for_PM_Australian_supply_chain.pdf

8 Market issues – Export prices – GM vs. non-GM canola

A number of recent studies have investigated the pricing of GM and non-GM canola to determine if GM crops have difficulty in finding markets. The consensus is that GM canola crops are readily accepted and the great bulk of GM canola is sold at very similar prices to conventional canola in most major canola markets throughout the world.

The ABARE study[30] states that at the world level, the canola market has become differentiated into GM, conventional, certified GM-free and organic segments. While there is some limited evidence of price premiums for organic and certified GM-free canola, markets for these canola types are still very much small niches and mainly located in developed countries with high incomes per person. A conclusion of this analysis is that, in the main traditional import markets for canola — Bangladesh, China, Japan, Mexico and Pakistan — GM canola is generally accepted as readily as conventional canola and is priced at very similar levels.

There is strong evidence that GM products are finding ready markets throughout the world. The 2005 ACIL Tasman/Farm Horizons report[31] to the Victorian Government found

> *"… little to no evidence of any general price discrimination or market access problems that should be of concern".*

Indeed, as new generation GM crops with additional health benefits are developed, we are likely to see premiums for GM crops with desirable quality attributes, such as those we are already seeing in high oleic acid soy[32].

Also global demand for GM crops is increasing, as the global area planted with GM crops has increased more than 60-fold over the first 11 years of commercialisation, reputedly making GM crops the fastest adopted crop technology in recent history[33].

[30] *Market Acceptance of GM canola* ABARE Report 07.5 March 07

[31] *Genetically Modified Canola Market issues, industry preparedness and capacity for segregation in Victoria* ACIL Tasman and Farm Horizons

[32] *GM Grains in Australia: Identity Preservation* ABARE report 06.25 Dec 06 p4

[33] *Global Status of commercialised Biotech/GM crops: 2006* James, C. (2006) ISAAA Brief No. 35-2006 International Service for the Acquisition of Agribiotech Applications

9 Australian Public attitudes and sentiment

Public attitudes in Australia to GM foodstuffs have shifted to being significantly more supportive. Biotechnology Australia's Eureka Report[34] found:

> *"… an increase in overall support for the use of gene technology in food and agriculture applications since 2005. This is indicated by the significant increase in the mean rating [up from 4.9 in 2005 to 5.5 in 2007]. The significant increase in support for biotechnology in food and agriculture [as compared to 2005] appears to be largely related to greater familiarity with the notion of GM crops and food".*

The report found:

> *"…a marked significant increase in perceived acceptability of… modifying the genes of plants to produce food [up from 48% to 73%]".*

It also found

> *"…a significant decline in perceptions of risk. The most notable movement occurred for modifying the genes of plants to produce food with a shift from 71% to 54%".*

In May 2007 the Australian Dairy Industry Council (ADIC)[35] found:

> *"…concern over GM foods relative to other public issues is relatively low. On a scale of 15 issues, GM foods were 11th. Issues such as the cost of living, drugs, unemployment and poverty were of far greater concern".*

The concerns over GM do not rank highly among everyday consumer concerns.

Additional Eureka Report findings included 50% acceptance amongst respondents for growing GM crops in their state, with that support growing to 80% when the respondents knew that the crops passed stringent regulations (from the OGTR and/or Food Standards Australia New Zealand [FSANZ]).

[34] *Community attitudes to biotechnology report on food and agriculture applications* Prepared for Biotechnology Australia Eureka Project 4001 July 07

[35] *Dairy GM Policy Review – Information Sheet 2* May 2007 ADIC

10 Investment Environment

Australian farmers operate in an environment of declining return on their output. As the Australian domestic market is comparatively small, future growth in agriculture is anticipated to come from exports to international markets. A key driver for improvements in farm productivity is the provision and uptake of new technologies. Therefore Australian agricultural producers need ready access to innovative new technologies to drive their export activities.

The February 2006 report to the Federal Minister for Agriculture, Fisheries and Forestry by the Agriculture and Food Policy Reference Group[36] states that:

> *"… some companies have withdrawn investment from research and development in agricultural biotechnology in Australia, particularly for GM crops, because the actions of the States have removed the path to commercialisation".*

The Moratorium is dampening investment in innovation in Australia as it creates uncertainty about the ability of agribusinesses to develop a clear path to market for their development pipeline of 1st, 2nd and 3rd generation crops. Commercial organisations and public organisations such As CSIRO and the Victorian Government's Department of Primary Industry (DPI) have invested millions of dollars in developing consumer oriented traits in their 2nd and 3rd generation crops. If there is no clear path to commercialisation, the significant expenditure on research will have to be considered as sunk costs for these private firms as well as for Australian taxpayers.

There are long lead times involved in developing locally adapted varieties. The local industry needs certainty and freedom to operate. The public and private sectors will continue to invest in research, to develop more consumer oriented traits, if they are able to develop realistic commercialisation paths. At the moment that certainty does not exist.

The Grains Research and Development Corporation (GRDC)[37] has stated:

> *"…less investment in gene technology research could also impact negatively on scientific capacity in Australia through job losses and research activities shifting offshore".*

Ultimately agricultural producers want the freedom to operate and the freedom to choose commercially applicable paths. Farmers should be permitted to employ whatever production systems they consider most appropriate for their business. They should not be denied access to a technology that is approved by the regulators and is shown to have no negative health, environment or economic consequences. Presently, their international competitors are allowed this choice.

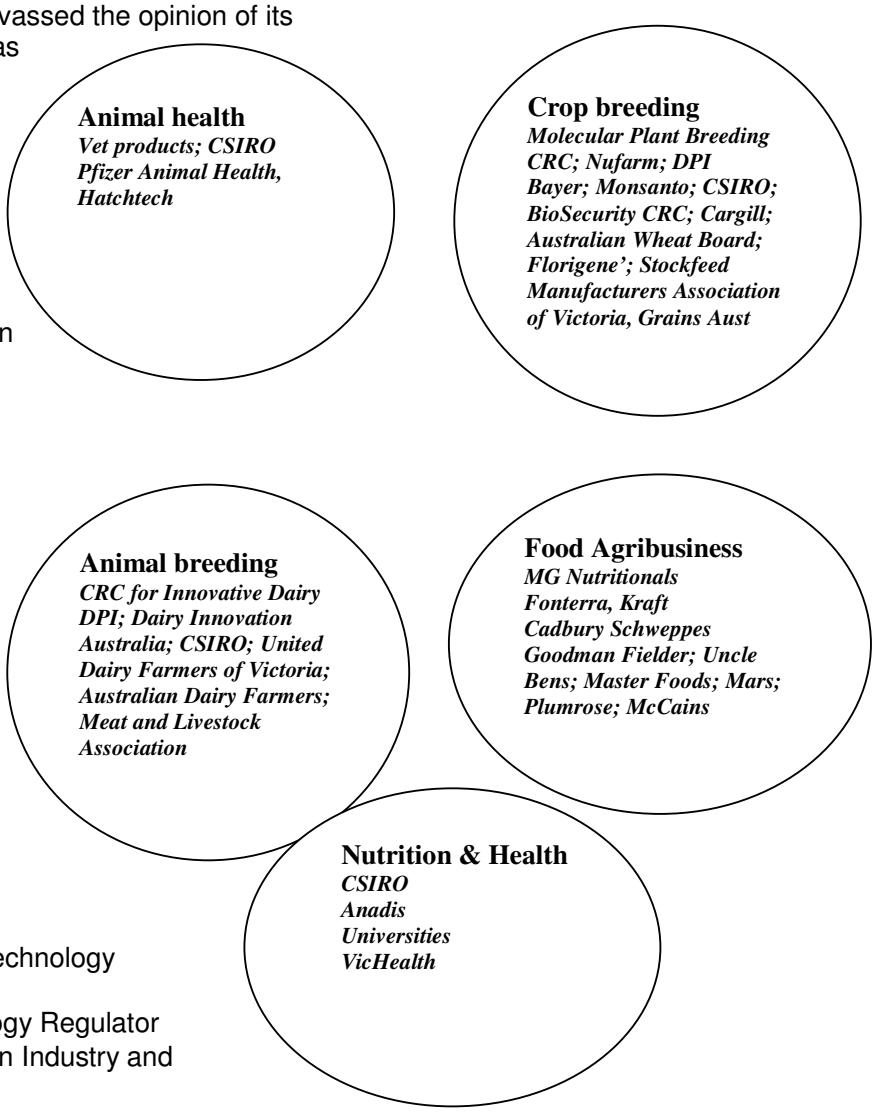
The current Moratorium does not provide that choice to Australians.

[36] *Creating our Future Agriculture and food policy for the next generation* p101
[37] *Creating our Future Agriculture and food policy for the next generation* p101

11 Stakeholders

BioMelbourne Network has canvassed the opinion of its agribusiness members as well as other industry stakeholders including:

- CRC for Innovative Dairy Products
- Molecular Plant Breeding CRC
- Victorian Department of Primary Industries
- Department of Innovation Industry and Regional Development
- CSIRO
- Nufarm
- Bayer Crop Science
- University of Melbourne
- Monash University
- Deakin University
- RMIT University
- LaTrobe University



Other industry stakeholders

- Monsanto
- Food Science Australia
- Kraft Foods
- Cadbury Schweppes
- National Australia Bank

Government agencies and biotechnology industry associations

- Office of Gene Technology Regulator
- Department of Innovation Industry and Regional Development
- Biotechnology Australia
- AusBiotech