

Review of the NSW

Gene Technology Crop Moratorium Act 2003

August 2007

**NSW Farmers' Association
Level 10, 255 Elizabeth Street
Sydney NSW 2000**

Ph: (02) 8251 1700
Fax: (02) 8251 1750

NSW Farmers' Association Background

NSW Farmers' Association (the Association) is an apolitical voluntary industry body representative of the whole farming community in NSW. Through its commercial, policy and lobbying activities it provides a powerful and positive link between farmers and the public.

Executive summary and background

The NSW Farmers' Association (the 'Association') is the largest state farming organisation in Australia.

In particular the Association strongly supports a collective decision among the NSW, Victorian and South Australian Governments to remove respective Genetically Modified ('GM') moratoriums given the interstate trade and movement of grain. Conversely if the moratoriums are to be retained, it is suggested that it be across all states because isolated decisions which result in different outcomes in each of these states would not be in the interests of the industry or the broader community at large. Regardless, a national market access regime would be the preferred approach to tackle the issue rather than the retention of state moratoria.

The Association's policy with respect to GM is that the NSW moratorium be removed. This policy in full is as follows;

"That the Association;

- a) give priority to achieving removal of the GM crop moratorium via a high profile public stance and proactive participation in the review process in a coordinated campaign with the farmer organisations of other states;*
- b) lobby for further work on GM takeall resistance to be continued in Australia; and*
- c) lobby for further funding for research and development into conferring drought resistance in crops using GM techniques".*

While a proportion of farmers in NSW remain opposed to GM, on each occasion when the issue has been debated at the NSW Farmers Association Annual Conference, a clear majority of delegates have expressed the opportunity to access the technology in a safe and responsible manner. Those remaining opposed to GM believe that introduction of the technology will result in Australia losing markets, that the long term health and environmental impacts are unknown, that there are premiums for Australian non-GM canola, that liability and insurance concerns have not been appropriately addressed, that herbicide resistance will increase, and that suitable trials to determine agronomic performance have not been undertaken.

However, growers increasing support for GM is evidenced by a recent survey undertaken by the Department of Agriculture, Fisheries and Forestry which indicated that 79% of farmers believe that GM canola would have a positive impact on the Australian grains industry¹.

The main reasons behind growers' increasing support for GM (particularly in relation to GM canola) are the;

- a) absence of any human health and environmental impacts of GM canola in Australia or overseas². The Australian Office of Gene Technology Regulator has approved two traits of GM canola as safe for humans, animals and the environment,
- b) lack of any substantive or prolonged market premium for Australian non-GM canola³,
- c) the fact that the largest canola exporter in the world, Canada has maintained its world canola export dominance despite its GM canola status
- d) introduction of adventitious presence levels for canola grain and seed in Australia and our major overseas markets which better reflects the reality of grain trade; and
- e) competitive advantage obtained by our international competitors through the early and rapid adoption of GM technology.

The NSW GM experience in relation to cotton has also been a success with approximately 92% of the 2006-07 cotton crop comprising GM varieties. This is the maximum amount of GM cotton that can be grown given integrated pest management trap crop requirements. Undoubtedly if GM varieties did not offer advantages to growers then they would not grow them. The advantages to

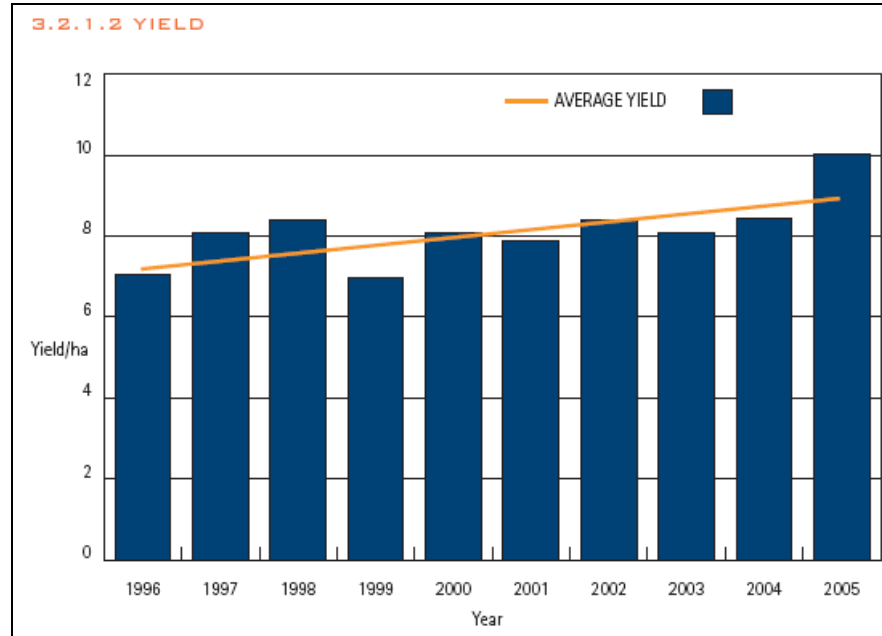
¹ DAFF 'A national market access framework for GM canola and future GM crops' 2007

² FSANZ website fact sheet <http://www.foodstandards.gov.au/foodmatters/gmfoods/index.cfm>

³ ABARE 'Market acceptance of GM canola' 2007

cotton growers are that GM cotton uses less insecticide than conventional varieties while allowing the use of less harmful chemicals such as endosulfan. For instance, Bollgard II® crops require up to 85 per cent less insecticide than conventional cotton⁴. The use of GM has also seen a 90 per cent reduction in the use of endosulfan⁵. As a result of the reduction in weeds, yields have increased since the introduction of GM cotton in 1996 as seen in figure 1.

Figure 1- Cotton yields



Source: CRDC (2006)- Australian Cotton Comparative Analysis, 2005 Crop.

There has also been a change in consumer attitudes to biotechnology. Biotechnology Australia recently reported that the public's increased familiarity with gene technology and a perception that GM crops could be used to counter major environmental concerns has led to 73% supporting the technology, up from 46 per cent in 2005⁶.

Furthermore while it is reported that there remains strong consumer resistance to GM in our major canola export markets, this has not led to market access issues or non-GM premiums. Europe and Japan (the most GM sensitive countries in the world) are not demanding GM free product. Europe is not only importing millions of tonnes of products from GM crops grown in US, Argentina and Brazil, it is also growing thousands of hectares of GM crops. In 2006, the WTO has upheld a claim by the US, Argentina and Canada that the EU has unreasonably delayed approval of GM traits. As a result more GM traits continue to be approved by the EU. Japan imports most of its canola from Canada (where the crop is 80 per cent GM and not segregated), and GM corn and soy from the US. Canada as the world's largest canola exporter (accounting for over 70% of world canola trade) has also not experienced a reduction in market share by growing GM product⁷. Canada's main export markets of GM canola include some of Australia's main canola markets, including Japan, China, Pakistan and Bangladesh. While Japan is often quoted as 'sensitive' to GM, this contrasts with the fact that Japan is Canada's best canola seed customer.⁸

ABARE also reported in 2005 that failure to remove the current moratoriums could by 2015 cost Australia \$3 billion in lost profitability and market share. In effect, Australian canola producers are

⁴ CRDC, 2005

⁵ CRDC, 2005

⁶ Biotechnology Australia, 'Community attitudes to biotechnology', 2007

⁷ ABARE 'Market acceptance of GM canola' 2007

⁸ Canola Council of Canada, "Canola Quick Facts"; available at: www.canola-council.org

prevented from sharing the economic benefits that GM crops are providing many of its competitors⁹. ABARE also indicates that Australia can derive substantial economic benefit from the commercialisation of GM crops. For instance, they suggest that commercialisation of GM canola (without an identity preservation system) would increase production by 17 per cent and exports by 23 per cent. For Australia to achieve the equivalent increases without GM commercialisation, it is estimated that a price premium of 16 per cent would be required on non GM canola, which is seemingly unachievable on the world market.¹⁰

In contrast the Canadian Canola Council concluded in 2004 that the direct positive economic impact to its growers of the adoption of GM canola from 1997 to 2000 is within the range of \$144 and \$249 million¹¹. The advantages of GM canola in Canada (namely more efficient weed control and ease of herbicide management in preventing weed resistance) have led to over 80 per cent of canola being grown from GM varieties.

Beyond canola producers, moratoriums have also had an impact on the broader Australian oilseed industry and plant breeders, and have resulted in a disincentive to invest in research and development in this area. A continuation of the moratorium, which presents no clear path to market for approved GM products, threatens research investment in this area, innovation and Australia's scientific capacity.

The grains industry is confident that it can adequately handle and manage the segregation of GM canola so that market choice is provided for the needs of all industry participants. This confidence was demonstrated by the signing of the Single Vision Grains Australia report into the issue by the vast majority of key industry stakeholders. Segregation and market choice is achieved via;

- a) Regulatory approval through the Australian Office of Gene Technology Regulator, identification of segregation market requirements, establishment of adventitious presence levels for GM canola, approval of GM canola in key importing countries and establishment of segregation protocols throughout the supply chain.
- b) A combination of industry commercial protocols, processes and codes of practice¹².

ABARE supports this proposition and has indicated that the introduction of GM canola will have a negligible impact upon the organic (non GM) canola, livestock and honey industries¹³. "The experience of North America also demonstrates that GM crops, which now account for the majority (60%) of total soybean, corn and canola grown in North America, can co-exist with conventional and organic crops without significant economic or commercial problems¹⁴. This is achieved by the introduction of adventitious presence levels of 0.9% for grain and 0.5% for seed and research indicating that 5metre buffer zones between GM and non-GM fields will maintain GM levels well within tolerances¹⁵.

For these reasons, the Association policy is in support of the removal of the GM moratorium in NSW.

⁹ ABARE; "Australian Commodities", Vol 12, no 3; September 2005

¹⁰ ABARE 'GM Canola- What are its economics under Australian conditions? 2003

¹¹ Canadian Canola Council *An Agronomic and Economic Assessment of Transgenic Canola* 2004

¹² Single Vision *Delivering market choice with GM canola* 2007

¹³ ABARE *Potential impacts of the introduction of GM canola on organic farming in Australia* 2007

¹⁴ Graham Brookes, 'Co-existence in North American agriculture: can GM crops be grown with conventional and organic crops?' 2004

¹⁵ Rieger, M.A., Lamond, M., Preston, C., Powles, S.B., Roush, R. 'Pollen-Mediated Movement of Herbicide Resistance between Commercial Canola Fields'. 2002

Specific responses to the review terms of reference.

1. Assess the expected impacts on marketing, trade and investment for NSW of:

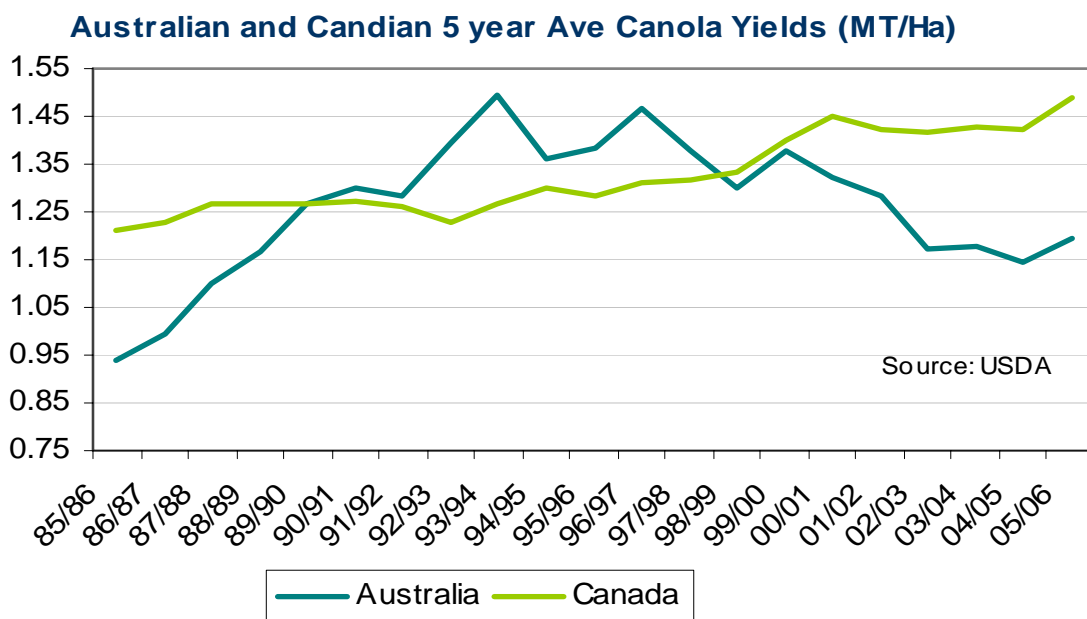
- a) Extending the Act and maintaining the moratorium orders on the cultivation of GM canola;
- b) Amending the Act and removing the moratorium orders on the cultivation of GM canola; or
- c) Allowing the Act to expire.

1a) Assess the expected impacts on marketing, trade and investment for NSW of extending the Act and maintaining the moratorium orders on the cultivation of GM canola

Association members who are in support of the removal of the NSW moratorium believe that maintaining the moratorium on the cultivation of GM canola will;

- Continue to deny farmers from accessing a tool which may provide much needed financial and management benefits. Accordingly, Australian canola growers will continue to be placed at a competitive disadvantage to our counterparts such as Canada on export markets.
- Continue to ignore the realities that there is no market access or premium advantages associated with maintaining our non-GM canola status.
- Continue to hamper investment in GM research and development.

Australia is the second largest exporter of canola behind Canada (accounting for between 12-26% of export trade)¹⁶. Accordingly, it is vital that Australian canola growers have costs of production which are comparable and competitive with Canada and other major canola exporters. However the current NSW moratorium is denying our growers access to a tool which may provide economic benefits thereby arguably placing them at a competitive disadvantage. The following graph demonstrates that Canadian GM canola yields are currently well above Australian canola yields and are on an upward plane. In contrast Australian canola yields are declining. Notably, while Australia has experienced droughts since 2002, Canada has also had two major droughts since 2000.



¹⁶ ACIL Tasman 'GM Canola: An information package' July 2007

While Australian trial data for GM versus non GM canola is limited, a 2001 study commissioned by the Canola Council of Canada concluded that GM canola provided increased profitability (a 31% gross margin improvement) and greater management flexibility¹⁷. The study found that Canadian growers reported an average 10% yield increase from GM canola above conventional varieties. The factors that contributed to the yield improvement were higher yielding varieties, earlier seeding and better weed control. The study also showed growers used less fuel with GM canola varieties compared to conventional canola as they increased direct seeding and reduced summer fallow practices. GM canola varieties allowed growers to use significantly less herbicide than conventional canola. The Canola Council of Canada study found that GM varieties allowed growers to lower their herbicide costs by 40% compared to conventional canola varieties. Canadian growers participating in the study reported an average increase of \$5.80 per acre in the net return for GM canola compared to conventional canola in 2000. Economic modeling used in the study calculated a \$10.62 per acre benefit over conventional canola. The Canadian Canola Council concluded in 2004 that the direct positive economic impact to its growers of the adoption of GM canola from 1997 to 2000 is within the range of \$144 and \$249 million¹⁸.

It is for these reasons that 80% of the canola in Canada is from GM varieties.

In contrast, ABARE believes that failure to remove the current moratoriums across Australia could by 2015 cost Australia \$3 billion in lost profitability and market share. The report also stated;

“There is no apparent economic justification for Australia to delay the commercialization of transgenic canola. Australian canola seed producers compete with transgenic canola seed in their main export markets. Those markets willingly accept transgenic canola. In the absence of a defined market and a price premium for non-transgenic canola, the moratoriums are generating an economic loss for Australia. Australian canola producers are prevented from sharing the economic benefits of transgenic canola that are being enjoyed by the other major supplier of Australia’s canola export markets, Canada.”

While GM canola should not be seen as the panacea for growers, the impacts of drought and declining terms of trade have meant that it is vital that farmers (if they so choose) have the opportunity to access all possible tools that may provide financial benefits. In the end, the determinant of the commercial success of GM canola will not be whether it is GM or non GM but whether it will provide financial benefits to growers.

The example of Canada as the worlds largest exporter of GM canola, has demonstrated that Australia’s initial concerns that we may lose markets and price premiums by introducing GM canola were unfounded. While Canada initially lost market share in the European Union when it introduced GM canola in 1996, it subsequently found ready markets for its increased canola supplies elsewhere, particularly in Mexico, the United States, Pakistan and China¹⁹. Importantly the EU is a relatively small importer of canola seed (10% of total seed imports in 2005-06) as compared to Japan (34%)²⁰. Regardless, the EU’s stance on GM canola is changing. In March 2007 the EU lifted its moratorium on the approval of GM seed for animal feed and industrial purposes, allowing Canada to once again compete in this market after an absence of 10 years. This outcome followed a successful WTO action by the US and Argentina that the EU was unreasonably delaying GM licensing approvals²¹.

The continued world export market share dominance of Canadian GM canola is demonstrated in the following table. Notably Australia’s export market share has not changed markedly despite our non-GM canola status.

¹⁷ ACIL Tasman ‘GM Canola: An information package’ July 2007

¹⁸ Canadian Canola Council *An Agronomic and Economic Assessment of Transgenic Canola* 2004

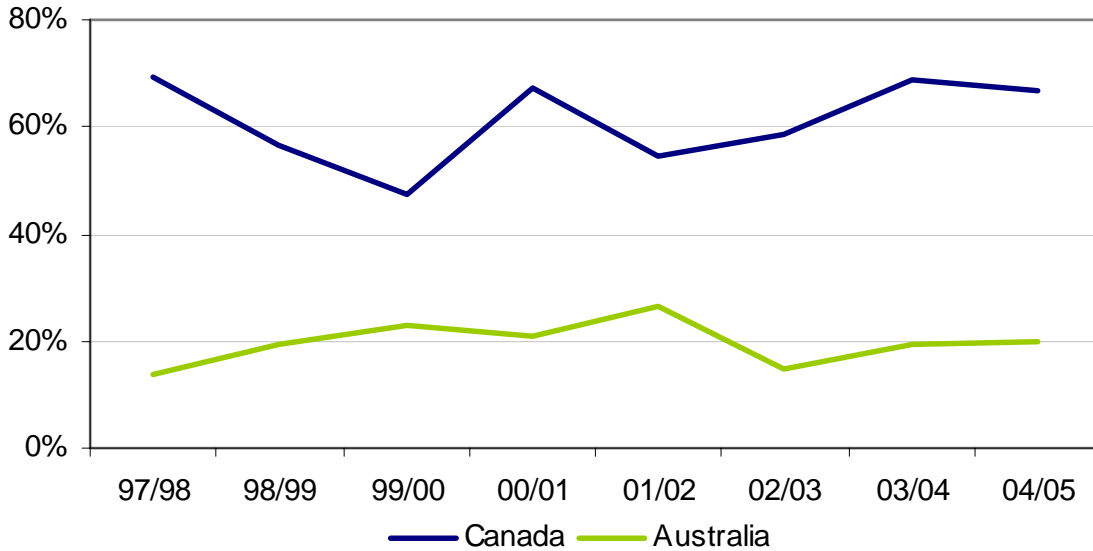
¹⁹ ABARE ‘Market acceptance of GM canola’ 2007

²⁰ ACIL Tasman ‘GM Canola: An information package’ July 2007

²¹ ACIL Tasman ‘GM Canola: An information package’ July 2007

Shares in World Canola Exports

Source: USDA

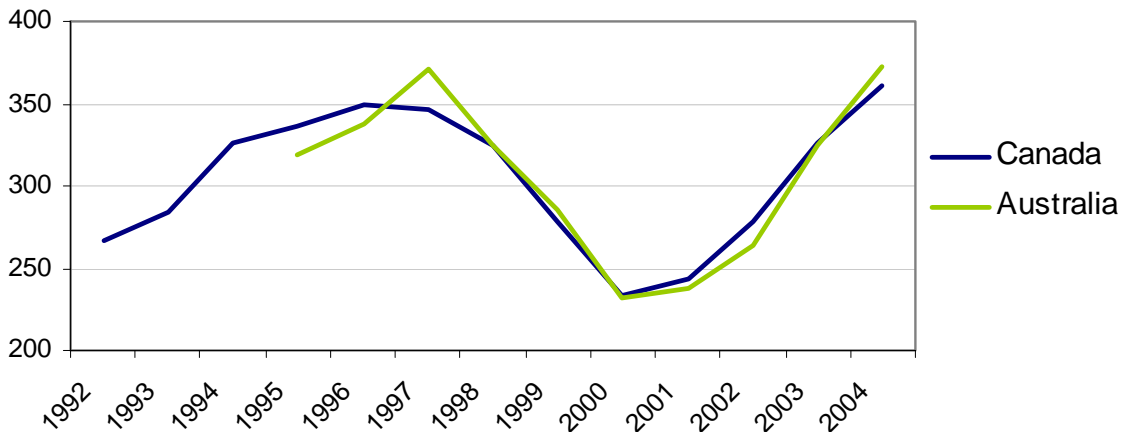


With respect to price premiums ABARE also concludes that;

'while there is some very 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. Based on world import data, the conclusion of the analysis reported here is that the great bulk of GM canola is sold at very similar prices to conventional canola in most major canola markets throughout the world'.

This is evidenced in the following graph.

Delivered Japan Canola Price Comparisons (US\$/t)



Source: US Ag Attache, Japanese Minst. of Finance

With respect to the use of GM crops for livestock consumption, ABARE concludes that;

'the preference for products from livestock not fed on GM materials seems to be very much a niche market and is largely confined to dairy products. With meat products, for example, Canada's export trade has grown strongly since the introduction of GM grains and oilseeds in the United States and Canada in 1996, despite a dependence on the use of GM feedstuffs, particularly GM canola meal. Even in the European Union, a major exporter of meat and dairy products, livestock production is heavily dependent on the use of GM feedstuffs, particularly soybean meal and corn gluten feed'.

Biotechnology companies at present have not invested heavily in trials of GM product because they believe that the moratoriums throughout Australia are not science based, fail to exhibit transparency, predictability and a clear path to the market required of a regulatory system²². This not only has meant that farmers have not been able to assess the relative merits of GM canola before moratoria may potentially be lifted but that research investment, innovation and Australia's scientific capacity has been jeopardized.

1b) Assess the expected impacts on marketing, trade and investment for NSW of amending the Act and removing the moratorium orders on the cultivation of GM canola

The Association's policy supports the removal of the moratorium legislation in total rather than amendments to the Act which allow the cultivation of specific GM crops such as canola.

1c) Assess the expected impacts on marketing, trade and investment for NSW of allowing the Act to expire.

Allowing the moratorium to expire will provide canola growers the opportunity to access OGTR approved GM varieties. Importantly, it is arguable that the moratorium should not remain because trials demonstrating the benefits of GM canola have not been undertaken. This precautionary principle approach ignores commercial reality which dictates that if GM canola does provide advantages to farmers then they would naturally support it. The reverse also applies.

While some concerns remain with the introduction of the technology, deliberations among industry stakeholders will assist in the establishment of the most appropriate means to tackle the remaining uncertainties.

The regulatory framework provided under the Commonwealth *Gene Technology Act 2000* is considered by many to be sufficient to provide the necessary legislative approval, oversight and public information in relation to new GM traits. For instance, the Act provides for approved GM crops or livestock to only be released under specific licensing conditions and adhere to a risk management plan. That includes having a risk management plan specially tailored for each GM product and farmers' circumstances. Farmers must also adhere to all the conditions in their plans or risk losing their license to grow the GM crop or animal. Among the conditions, they are required to provide buffer zones and be open to inspection and monitoring by OGTR representatives. Australian research has also indicated that 5 metre buffer zones between GM and non-GM fields will maintain GM levels well within adventitious presence levels of 0.9% for grain and 0.5% for seed.²³

Concerns regarding cross contamination and super weeds are also considered manageable. A major Australian report on gene flow conducted in 2002 for instance stated that the risk of gene flow depended on the crop, the environment, but also the gene, the trait, and the management practices. In short the report concluded that while canola was classified a medium risk, low levels of cross contamination were attainable with the introduction of appropriate crop management plans²⁴.

The Association believes that industry initiatives such as the National Variety Trial system enable farmers to compare and contrast GM versus conventional variety performance.

As stated previously the grains industry is confident that it can adequately handle and manage the segregation of GM canola so that market choice is provided for the needs of all industry participants. This is achieved through the combination of commercial protocols, processes and practices that are already or are about to be put in place.

These include supply chain management practices such as industry standards (eg HACCP, ISO), quality management procedures (eg industry Codes of Practice, Best Management practice), stewardship programs (eg Australian Seed Federation and Australian Oilseed Federation codes)

²² DAFF J Glover *et al* "Genetically Modified Crops in Australia; the next generation", 2005

²³ Rieger, M.A., Lamond, M., Preston, C., Powles, S.B., Roush, R. 'Pollen-Mediated Movement of Herbicide Resistance between Commercial Canola Fields'. 2002

²⁴ ACIL Tasman 'GM Canola: An information package' July 2007

and commercial contractual arrangements (eg National Agricultural Commodity Marketing Association contracts and trade rules). The segregation of specialist canola varieties and imported GM canola as examples of how the supply chain can successfully handle GM canola²⁵.

2. On the basis of the above assessments, make recommendations to Government on the most appropriate option to adopt; and

The Association recommends that the NSW Government should allow the moratorium to expire.

3. In the event that the panel recommends extension of the legislation, recommend appropriate amendments to the legislation.

Given that Association policy is in support for the removal of the moratorium, its policy does not specify legislative amendments in the event that the panel makes such a recommendation. Accordingly we are unable to comment on this issue.

²⁵ Single Vision *Delivering market choice with GM canola* 2007