AUSTRALIAN SEED FEDERATION

Submission to the NSW GM Crop Moratorium Review

INTRODUCTION

The Australian Seed Federation (ASF) is the peak national body representing the interests of Australia's sowing seed industry and welcomes the opportunity to provide this submission to the NSW Review of the Moratorium on Genetically Modified Canola and crops in general.

The ASF's mission is to increase the prosperity to Australian agriculture through leadership and management of issues critical to the successful progress of the Australian seed industry. One such issue is the continued presence of legislation in NSW prohibiting the commercial cultivation of Federal Government approved (through the Office of Gene Technology Regulator – OGTR) GM canola plant varieties.

Overview of the Australian Seed Federation

The ASF gains its strength from diversity in respect of its membership which comprises representatives from the total seed supply chain (i.e. plant breeders, seed growers, seed processors, seed testing laboratories and seed marketers), geographical coverage across all states of Australia, and stakeholder membership across all seed crops falling under the broad headings of agriculture and horticulture. It is worth noting that all canola breeders and their licensees are members of the Australian Seed Federation.

This unique representative base has positioned the ASF as the only peak national representative body of the entire sowing seed industry in Australia. The average annual turnover of ASF members for seed sales in Australia equates to A$650 million per annum. This figure represents approximately 80% of the total market share in seed sales in Australia. It is on this platform that ASF claims to have a significant interest in this review.

ASF MEMBER
AVERAGE ANNUAL TURNOVER
2002-2005 IN $A

Cereal	**184,075,000**
Temperate Pasture	**155,436,000**
Vegetable	**104,205,000**
Oilseed	**56,054,000**
Tropical Pasture	**37,046,000**
Non Vegetable Horticulture	**16,262,000**
Pulses	**12,847,000**
Other Sowing Seed	**84,075,000**
Total Turnover	**A$650,000,000**

Since 1997, ASF has implemented a number of stewardship programs in the seed industry which when taken together allow coexistence of different seed production systems in NSW, namely GM and non-GM canola seed crops. This in turn meets the objective of a nationally consistent approach to GM and coexistence. Supply chain management preserves existing non-GM markets for seed and assists in establishing new markets for OGTR approved GM seed.

Australia's seed industry 'supply chain management system' is built upon internationally recognised quality assurance systems that are technically competent by international standards and allow the seed customer the freedom of choice when purchasing seed. Through the development and implementation of seed certification, seed testing and seed labelling systems, the Australian sowing seed industry has been meeting end user demands and market specifications for decades. GM seed released for commercial production and marketing can be incorporated into these existing supply chain management systems.

This submission addresses the two main issues raised in the terms of reference, namely:

1. The economic impact of the moratorium on GM canola; and
2. Recommending a policy change, namely, allowing the moratorium to expire on the grounds that an alternative system is available to secure market access for GM and non-GM canola.

EXECUTIVE SUMMARY

The Australian Seed Federation does not believe the conditions that resulted in the imposition of the NSW moratorium are valid (i.e. market access concerns held by government and grain exporters) and as such ASF recommends that the Act be allowed to expire. The necessary evidence supporting ASF's position is contained in a number of studies which are referenced throughout this submission. The ASF claims the prohibition in NSW of commercial cultivation of OGTR approved GM canola has placed the NSW canola sowing seed and canola grain industry's at a competitive disadvantage compared to their international trading partners and therefore ASF supports the repeal and/or expiry of the legislation and accompanying regulation in its entirety.

Australian plant breeders and proprietary marketers have in place the necessary quality assurance and identity preservation systems to meet customer specifications of the seed consumer. The Australian

seed industry secures market access through the employment of 'Best Management Practices' throughout the seed supply chain, not through the use of restrictive trade practice measure's such as GM moratorium legislation.

The seed industry's identity preservation system allows freedom of choice by farmers wishing to utilise GM seed, non-GM seed or a combination of both. NSW GM canola moratorium legislation is in effect a 'restrictive trade measure that disallows the right to choose due to its 'regional' imposition as distinct from the 'micro approach' adopted by individual seed companies and farmers through their quality assurance systems.

Since the moratorium was put in place, there have been a number of reports and activities that confirm the widespread use of GM technology by competitor nations has led, or is leading to, a loss of competitiveness in Australia and potential loss overseas of significant Australian intellectual property. These articles include:

- Modelling by the Australian Bureau of Agricultural and Resource Economics (ABARE) in 2005 estimated that failure to commercialise GM crops could, by 2015, cost Australia $3 billion (assuming market acceptance):
- International reports show that GM varieties are providing higher crop yields and increased returns, greater diversity in the varieties of crops and in products, in addition to significant environmental benefits and reduced input costs associated with minimum tillage and lower pesticide use; (refer to the next section on Global Developments for the referenced reports);
- ABARE's report 'Market Acceptance of GM Canola, March 2007', shows that in terms of mainstream commodity markets, there is little evidence of price premiums or access advantage for Australian (non-GM) canola exports over competitors such as Canada and the US where segregation of GM crops from non-GM crops is not practised; and
- Grain traders report that the detection of trace levels of GM material in export canola consignments in 2005 and subsequent establishment of threshold levels for adventitious presence (0.9 percent of GM in non-GM canola grain and 0.5 percent of GM in non-GM seed for sowing) have not impacted market access. Grain traders continue to manage requirements to markets such as Japan and Europe.

1. ECONOMIC IMPACT OF THE NSW MORATORIUM

ASF POSITION: The Australian Seed Federation is extremely concerned that the NSW canola seed and grain industries have been placed in a distinct competitive disadvantage globally by being denied access to OGTR approved canola plant varieties.

The economic impact of the NSW moratorium on its farmers is best measured by considering the global developments in biotechnology and the use of GM canola by Australia's two main competitors, Canada and the USA, who have been growing the technology since 1996 and 1999 respectively.

In Canada the overall impact on profitability (inclusive of yield improvements and higher quality) has been an increase of between $22/ha and $45/ha; in USA the net impact on gross margins has been between +$40/ha and +$48/ha for glufosinate tolerant canola, and +$47/ha and +$55/ha for glyphosate tolerant canola.
(Source: GM crop impact: the first ten years, ©PG Economics Ltd 2006).

The following summary of global development in commercialised GM crops further demonstrates how the GM moratorium in NSW is leaving its farmers behind in an economic and trade sense.

Global Status of Commercialized Biotech/GM Crops: 2006, Clive James, Chair ISAAA Board of Directors:

- In 2006, the global biotech crop area continued to soar as the 100 millionth hectare barrier (250 millionth acre) was breached, when for the first time more than 10 million farmers (10.3 million) in 22 countries planted 102 million hectares of biotech crops, up from 90 million hectares planted by 8.5 million farmers in 21 countries in 2005;

- Over the last eleven years, 1996 to 2006, farmers have consistently increased their plantings of biotech crops by double-digit growth rates every single year since biotech crops were first commercialized in 1996. Also more than half (52% or 776 million hectares of the 1.5 billion hectares of arable land) of the cropland in the world is in the 22 countries where approved biotech crops were grown in 2006;

- A historic milestone was reached in 2006 when the accumulated area of biotech crops planted in the last eleven years, 1996 to 2006, exceeded 500 million hectares (577 million hectares) for the first time. Notably, one new country, Slovakia an EU country, joined another five EU biotech crop countries bringing the total number of EU countries planting biotech crops in 2006 to six, equivalent to almost one quarter of the total number of 25 EU countries;

- In 2006, 22 countries grew biotech crops, 11 developing countries and 11 industrial countries; they were, in order of hectarage, USA, Argentina, Brazil, Canada, India, China, Paraguay, South Africa, Uruguay, Philippines, Australia, Romania, Mexico, Spain, Colombia, France, Iran, Honduras, Czech Republic, Portugal, Germany, and Slovakia;

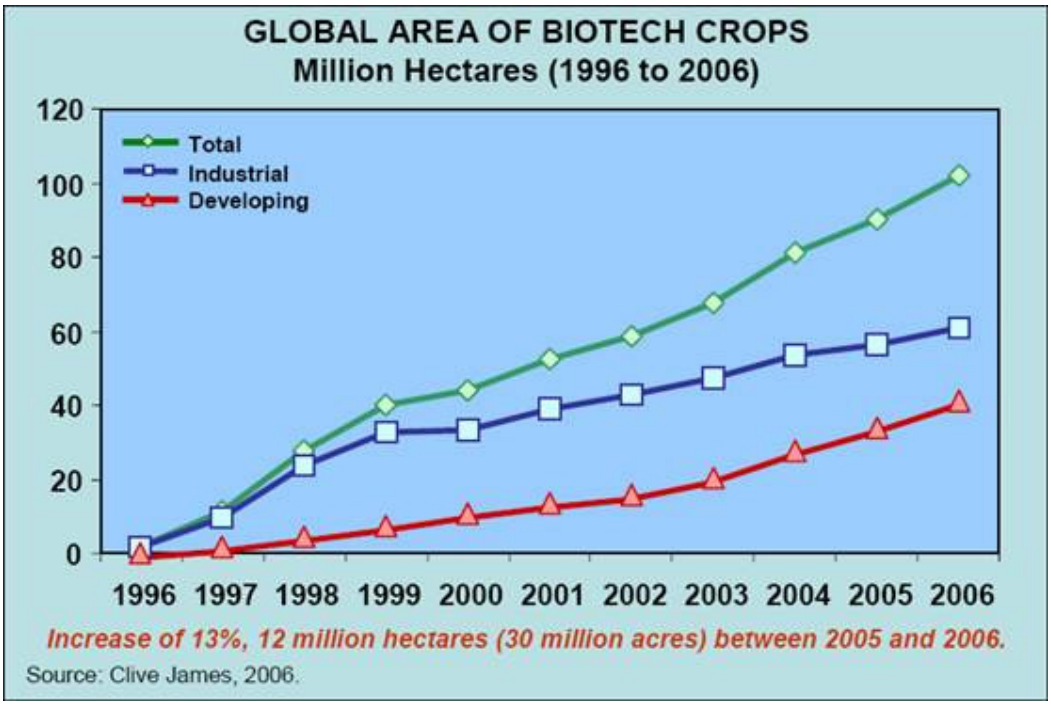
- In 2006, the US followed by Argentina, Brazil, Canada, India and China were the six principal adopters of biotech crops globally, with India for the first time replacing China at number five in world ranking by planting more Bt cotton than China;

- The largest absolute increase in biotech crop area in any country in 2006 was in the US at 4.8 million hectares, followed by India 2.5 million hectares, Brazil 2.1 million hectares, with Argentina and South Africa with 0.9 million hectares each;

- Biotech soybean continued to be the principal biotech crop in 2006, occupying 58.6 million hectares (57% of global biotech area), followed by maize (25.2 million hectares at 25%), cotton (13.4 million hectares at 13%) and canola (4.8 million hectares at 5% of global biotech crop area);

- In 2006, herbicide tolerance, deployed in soybean, maize, canola, cotton and alfalfa continued to be the most dominant trait occupying 68% or 69.9 million hectares followed by Bt insect resistance at 19.0 million hectares (19%) and stacked traits occupied 13.1 million hectares (13%). Stacked traits were the fastest growing trait group between 2005 and 2006 with 30% growth, compared with 17% for insect resistance and 10% for herbicide tolerance;

- Global accumulated impact of biotech crops for the decade 1996 to 2005, in terms of net economic benefits to biotech crop farmers, was $27 billion ($13 billion for developing countries and $14 billion for industrial countries).



Global Area of Biotech Crops in 2006: by Country (Million Hectares)

Rank	Country	Area (million hectares)	Biotech Crops
1*	USA	54.6	Soybean, maize, cotton, canola, squash, papaya, alfalfa
2*	Argentina	18.0	Soybean, maize, cotton
3*	Brazil	11.5	Soybean, cotton
4*	Canada	6.1	Canola, maize, soybean
5*	India	3.8	Cotton
6*	China	3.5	Cotton
7*	Paraguay	2.0	Soybean
8*	South Africa	1.4	Maize, soybean, cotton
9*	Uruguay	0.4	Soybean, maize
10*	Philippines	0.2	Maize
11*	Australia	0.2	Cotton
12*	Romania	0.1	Soybean
13*	Mexico	0.1	Cotton, soybean
14*	Spain	0.1	Maize
15	Colombia	<0.1	Cotton
16	France	<0.1	Maize
17	Iran	<0.1	Rice
18	Honduras	<0.1	Maize
19	Czech Republic	<0.1	Maize
20	Portugal	<0.1	Maize
21	Germany	<0.1	Maize
22	Slovakia	<0.1	Maize

Source: Clive James, 2006.

** 14 biotech mega-countries growing 50,000 hectares, or more, of biotech crops*

Herbicide Tolerant Canola – Canada

(Source: GM crop impact: the first ten years, ©PG Economics Ltd 2006)

Canada was the first country to commercially use GM HT canola in 1996. Since then the area planted to varieties containing GM HT traits has increased significantly to 82% of the total crop in 2005 (4.3 million ha). The farm level impact of using GM HT canola in Canada since 1996 is summarised as follows:

- The primary impact has been to increase yields by almost 11% (in 2005 this yield increase was equivalent to an increase in total Canadian canola production of nearly 9%);
- In addition, a small additional price premia has been achieved from crushers through supplying cleaner crops (lower levels of weed impurities);
- Cost of production (excluding the cost of the technology) has fallen, mainly through reduced expenditure on herbicides and some savings in fuel and labour. These savings have annually been between about $25/ha and $32/ha. The cost of the technology has however been marginally higher than these savings resulting in a net increase in costs of $3/ha to $5/ha;
- The overall impact on profitability (inclusive of yield improvements and higher quality) has been an increase of between $22/ha and $45/ha;
- The annual total national farm income benefit from using the technology has risen from $6 million in 1996 to $175 million in 2005. The cumulative farm income benefit over the 1996-2005 period (in nominal terms) was $792 million;
- In added value terms, the increase in farm income in 2005 has been equivalent to an annual increase in production of almost 8%.

The USA

(Source: GM crop impact: the first ten years, ©PG Economics Ltd 2006)

The only other country growing GM HT canola on a commercial basis has been the US, where the first plantings took place in 1999. The farm level impact has been similar to the impact identified in Canada. More specifically:

- Average yields increased by about 6%. In 2004, this added the equivalent of 5.7% to total US canola production;
- The cost of the technology has been between $17/ha (glufosinate tolerant) and $29-$33/ha (glyphosate tolerant). Cost savings (before inclusion of the technology costs) have been $45/ha for glufosinate tolerant canola and $61-$67/ha for glyphosate tolerant canola;
- The net impact on gross margins has been between +$40/ha and +$48/ha for glufosinate tolerant canola, and +$47/ha and +$55/ha for glyphosate tolerant canola;
- At the national level the total farm income benefit in 2005 was $19.9 million and the cumulative benefit since 1999 has been $101 million;
- In added value terms, the increase in farm income in 2005 has been equivalent to an annual increase in production of about 20%.

Summary of global economic impact

In global terms, the farm level impact of using GM HT technology in canola in Canada and the US was $195 million in 2005. Cumulatively since 1996, the farm income benefit has been (in nominal terms) $893 million. In terms of the total value of canola production in these two countries in 2005, the additional farm income generated by the technology is equal to a value added equivalent of 9.4%. Relative to the value of global canola production in 2005, the farm income benefit added the equivalent of 1.9%.

(Source: GM crop impact: the first ten years, ©PG Economics Ltd 2006)

2. AN ALTERNATIVE SYSTEM TO LEGISLATION

ASF POSITION: The Australian Seed Federation believes the reasons for the moratorium on GM canola are no longer valid and therefore recommends expiration of the NSW legislation to allow the implementation of an alternative system of industry self management. The published report by ABARE titled: *"Market Acceptance of GM Canola, ABARE Research Report 07. 5"* dispels the claims that the commercial release of approved GM Canola in Australia will threaten their existing market access arrangements.

The ASF wishes to reproduce the conclusion and implications of the ABARE report in full to ensure all aspects of the report are taken into consideration by the review panel:

"There is already extensive use in the domestic Australian food and feed markets of imported GM soybeans and domestically produced GM cottonseed for both food and feed consumption. A number of Australian food manufacturers have indicated that they do not use GM materials in their production systems, or are working to remove them from these systems. This is mainly some key dairy food manufacturers and most of the poultry meat producers in Australia. 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. The exception with market acceptance of GM canola is the European Union that currently does not allow imports of the main GM canola varieties. The European Union is a major producer of rapeseed and in the recent past has only been an occasional importer of canola from non-EU countries. However, there are projections that the European Union will be a net importer of around 370 000 tonnes of rapeseed and 264 000 tonnes of rapeseed oil a year over the next decade (FAPRI 2006), mainly driven by the mandated use of rapeseed for biodiesel production. The European Union resumed the process of approving GM varieties for import in late 2004 after a moratorium on new approvals that started in 1998. It will be difficult for the European Union to maintain the import ban on GM canola much longer in the face of pressure from major GM trading countries. Some Australian exporters of some livestock products, most notably of pig meat and dairy food, say that there is a marketing advantage available in markets such as Japan associated with not using GM feedstuffs in animal production processes. Again, however, outside the European Union, 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 heavy dependence on the use of GM feedstuffs. Even in the European Union, much livestock production is dependent on the use of GM feedstuffs, particularly soybean meal and corn gluten feed derived from US soybeans and corn. It is increasingly difficult for EU livestock producers to source non-GM protein meals because the main soybean exporters — the United States, Brazil and Argentina — are producers of GM soybeans.

Another factor in the decision to commercialise GM canola is that some Australian marketers of wheat and barley have expressed concerns that the possibility of unintended presence of GM canola in their shipments could jeopardise markets for their grain. There is no convincing evidence to suggest that wheat and barley exports have been adversely affected by the unintended presence of GM canola in other countries such as Canada. Some of the reasons for Australian wheat and barley marketers concerns expressed in 2003 have now disappeared. Saudi Arabia, a major market for Australian feed barley, is now more accepting of GM grains. In any event, the presence of small traces of GM canola seed in grains can be effectively managed on the basis of the grains industry's

wheat receival standards that set thresholds for all manner of contaminants that might be present in grain deliveries, including snails, concrete, grasses and other seeds. Furthermore, the documentation requirements agreed under the Cartagena Protocol on Biosafety in March 2006 do not require notification of unintended presence of GM canola in wheat and barley shipments. In summary, the marketers of GM canola and of products based on livestock fed on GM materials, including GM canola, do not appear to be disadvantaged in the Australian and world markets — GM canola seems to be finding ready markets throughout the world at prices very similar to those received for conventional canola.

Finally, in deciding whether to commercialise a GM crop after it has been approved for environmental release, market access issues are only part of the consideration. These should be weighed against the agronomic and environmental benefits and the costs associated with keeping GM and non-GM separate in the handling and storage process. A framework for estimating grain separation costs is outlined in Foster (2006)."

COEXISTENCE OF GM AND NON GM CANOLA

ASF Position: The Australian Seed Federation contends that GM and non-GM canola crops can co-exist due to the supply chain management systems that are operating in the seed and grain industry's which in turn enables participants along the supply chain to confidently meet their chosen market. The second major factor enabling co-existence of different production systems is the adoption of threshold levels for adventitious presence of admixtures.

The evidence supporting ASF's position that GM and non-GM canola crops can co-exist is contained in two key documents produced by industry and the Federal Government. The industry document titled *'Delivering Market Choice with GM Canola, 2007'*, presents the protocols and processes that the seed and grain industry supply chain are using or can implement to allow the commercialisation of GM canola, and meet marketplace, trade and regulatory requirements.

The document was produced under an initiative conducted by Single Vision Grain Australia, which brought together industry representatives from the seed and grain supply chain including plant breeders, seed marketers, technology developers, grain growers, bulk handlers and grain marketers whose collective intellectual input produced the market choice document.

Behind this document sits the comprehensive 'Principles for Process Management of Grain' report which states in detail the protocols, procedures and processes that are to be managed along the supply chain; which include standards, QA procedures, stewardship programs, codes of practice and commercial contractual arrangements. Copies of these documents can be obtained from www.afaa.com.au

The second report titled '*Canola - An Information Package'* was commissioned by the Australian Government and brings together a wide range of current information covering regulation, supply chain management, market acceptance of GM crops, economic and legal liability issues at farm level.

The report is available at http://www.daff.gov.au/agriculture-food/biotechnology

Seed Quality Systems in Australia Deliver Coexistence

Seed Quality Systems in Australia are already being used and readily available to all supply chain participants in NSW to continue to allow the seed industry to comply with customer requirements whether it be GM or non-GM canola seed. The seed industries identity preservation approach is driven by the customer (i.e. farmer) and the standards they expect for planting seed.

Officially recognised seed certification schemes are also available in NSW and all Australian States under which canola seed of both open pollinated and hybrid varieties may be produced. The protocols used for management of seed varietal purity are generally based on those of the OECD Seed Schemes and are applied to production of canola seed.

Proprietary owners of canola varieties may institute their own systems, as there is no compulsion for marketing purposes under law in each State for seed to be certified under genetic certification schemes. The Australian Seed Federation National Code of Practice for Seed Labeling and Marketing does however regulate labeling of seed for sowing with respect to physical purity attributes.

The ASF through its specialist 'Biotechnology Working Group' addresses in a proactive manner supply chain management issues. It has been responsible for the development of key industry stewardship documents that foster the development and use of 'supply chain management' principles to ensure seed consumers receive quality assured seed varieties of a non-GM or approved GM nature. These documents are referenced as follows:

- 'Australian Seed Federation Canola Industry Steward Principles for Breeding, Production, Processing and Marketing of Quality Sowing Seed' - the objective of this program is to provide a comprehensive framework to allow traceability of seed of plant varieties used for sowing in Australia;

- 'Australian Seed Federation Best Practice Guidelines for Management of Adventitious Presence in Canola Varieties' - management of adventitious presence levels in sowing seed is principally a matter of implementing current industry best practice standard operating procedures for seed hygiene at all points in the production, processing and marketing steps within a seed quality management system;

- 'Australian Seed Federation National Code of Practice for Seed Labeling and Marketing' – this Code was developed to ensure truth in labelling and implementation of internationally recognised sampling and testing methodologies for sowing seed to protect the interests of seed consumers. The seed bag label and seed testing analysis certificate is the ultimate protection and insurance policy that the seed company passes onto the farmer. This is especially the case when it comes to the issue of adventitious presence in non GM canola seed and also confirming the OGTR approved trait in GM canola seed.

These documents are accessible by interested stakeholders at www.asf.asn.au

These stewardship programs are in place and operational. The Australian Seed Federation conducts regular desktop and field audits of members to measure compliance.

In addition to the above mentioned domestic stewardship programs, the seed industry also utilises internationally agreed seed varietal certification schemes that provide 'best practice' methodology to ensure compliance with traceability concepts. These schemes are documented in:

- The Rules and Directions of the Organization for Economic Cooperation and Development (OECD) Seed Schemes for the Varietal Certification of Seed Moving in International Trade;

- Operational Procedures and Genetic and Crop Standards of the Association of Official Seed Certifying Agencies (AOSCA); and

- Seed Quality Management Schemes of government and private sector provider bodies in Australia, based on ideas consistent with those developed by international organisations.

Varietal certification processes include testing of seed for both phenotypic traits and genetic markers at points in the production and marketing chain. Best practice testing guidelines are principally provided under the Rules for Seed Testing of the International Seed Testing Association (ISTA) and the Association of Official Seed Analysts (AOSA), but may also be provided by technology providers of varieties and/or GM events, and official regulatory agencies in both international and domestic jurisdictions.

Coexistence of GM and Non-GM Crops Does Work

Internationally, a report by Graham Brookes & Peter Barfoot, titled, *'Co-existence of GM and non GM arable crops: the non GM and organic context in the EU,* confirms that: "Evidence to date shows that GM crops growing commercially in the EU and in North America have co-existed with conventional and organic crops without economic and commercial problems – only isolated instances have been reported of adventitious presence of GMOs occurring in organic crops, even in North America where GM crops dominate production of soybeans, maize and canola.

For the future, the likelihood of economic and commercial problems of co-existence arising remains very limited, even if a significant development of commercial GM crops and increased plantings of organic crops were to occur. Therefore if highly onerous GM crop stewardship conditions are applied to all EU farmers who might wish to grow GM crops, even though the vast majority of such crops would not be located near to organic-equivalent crops or conventional crops for which the non GM status is important, this would be disproportionate and inequitable.

In effect, conventional farmers, who account for 99.59% of the current, relevant EU arable crop farming area could be discouraged from adopting a new technology that is likely to deliver farm level benefits (yield gains, cost savings) and provide wider environmental gains (reduced pesticide use, switches to more environmentally benign herbicides, reduced levels of greenhouse gas emissions)."
(Source: *PG Economics Ltd, Dorchester, UK, 14 May 2004).*

CONCLUSION AND RECOMMENDATION

Based on the evidence presented in this submission the Australian Seed Federation strongly recommends that the NSW moratorium legislation on GM canola and OGTR approved crops in general be allowed to expire to enable the commercial production of OGTR approved canola crops from 2008 and beyond.

Mr Christopher Melham
Chief Executive Officer
Australian Seed Federation

31 August 2007