



August 30th 2007

GM Crop Moratorium Review Secretariat
NSW Department of Primary Industries
Locked Bag 21
ORANGE NSW 2800

Dear Sir/Madam

Review of the Gene Technology (GM Crop Moratorium) Act 2003

On behalf of the members of the Grain Growers Association (GGA), I provide this submission to the review of the Moratorium on Genetically Modified Crops.

GGA is a member service Association with 17,000 farmer members across Queensland, New South Wales and Victoria. GGA believes that the path to prosperity for its members lies in innovation, scientific discovery, on-farm application of technological developments, private entrepreneurship and greater productivity.

GGA has played an active role in thought leadership and stimulating debate amongst its members on the subject of genetic engineering in agriculture. It has provided access to the Gene Technology Grain Workshops for farmers. These workshops have been hosted by Agrifood Awareness Australia and CSIRO Industry Link. These workshops aim to provide an overview of gene technology issues including the science involved, the world status of GM crops and hands-on laboratory work.

In 2004, GGA funded a lecture tour by Dr Andy Tommey, a senior policy adviser with the European Commission. His role was within the Directorate General's environment division, developing policy on the importation and cultivation of GM crops in the EU.

The broader industry in Australia now has the expertise, systems and capacity to transport, store, handle and market GM grains whilst ensuring the integrity of the product delivered to customers.

GGA support farmers having choice as to whether they wish to use the technology on their own farms. This policy will be best served by allowing the expiration of the Gene Technology (GM Crop Moratorium) Act 2003.

Yours sincerely

Dan Mangelsdorf
Chairman

1) Economic Impact on New South Wales of the Moratorium on GM canola

It is difficult for GGA to fully assess the economic impact of the moratorium as we do not know what opportunities have passed by the grains industry since the NSW Government enacted the Gene Technology (GM Crop Moratorium) Act 2003.

Industry competitiveness, profitability and environmental sustainability have however, been impacted over the past four years as NSW scientists, agronomists and farmers have been denied a plant breeding tool they may have helped them cope with the low rainfall years.

1.1 Nationally

A more precise attempt has been made by ABARE to quantify the costs to Australia of the moratorium. In September 2005, ABARE concluded that, 'a continuance of the current moratoriums, and extension to other transgenic broadacre crops, is expected to result in a loss of gross national product of \$3 billion, in net present value terms, over the next ten years'.

One of the justifications for the moratoria has been that Australia's non-GM produce would gain market premiums around the world. This claim has been illusory at best.

In March 2007, ABARE released a report on the *Market Acceptance of GM Canola*. This report concluded that;

'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.'

1.2 Internationally

The National Centre for Food and Agricultural Policy (NCFAP) in Washington DC annually seeks to quantify the impacts on US agriculture of crop cultivars that are modified using genetic engineering. The most recent report from the NCFAP dates from November 2006 and examines the 2005 cropping year in the USA.

Sankula et al, report that, 'the planting of biotechnology-derived crops in 2005 has led to improved crop production of 8.3 billion pounds, lowered crop production costs of \$1.4 billion, and reduced pesticide use by 69.7 million pounds'.

Further calculations recorded that increased revenue from higher yields and reduced production costs improved net returns to growers by \$2.0 billion in 2005.

It is very difficult to extrapolate these kind of figures to the opportunities that have been missed in NSW. The calculations by the NCFAP are based on the use of the 8 biotechnology-derived crops that were planted by farmers in North America in 2005.

These were alfalfa, canola, corn, cotton, papaya, soybean, squash and sweet corn.

This submission will more specifically examine the benefits to canola growers in Canada that have been adapting to the use of transgenic varieties since its introduction.

1.3 Second Generation Traits

The Bureau of Rural Sciences in 2005 issued a report on genetically modified crops titled, *'What's in the Pipeline?'* This report highlighted the significant amount of work being carried out internationally into different GM oilseed crops.

A high degree of activity was noted into what are known as second generation traits, which alter the nutritional value of produce. Examples include of modifications for;

- Enrichment of specific desirable oils thus minimising the purification steps in the oil extraction process
- The production of oils of consistent high quality and composition
- Desired ratios of different fatty acids
- Increased quality of the meal for animal feed.

GGA is not aware of any such work having been replicated in Australia. It may have been carried out to some degree, but as there has not been a pathway to market to allow its commercial development, such activity is likely to have been minimal.

GGA is not in a position to calculate the cost to the NSW oilseeds industry of allowing our competitors ten years head start in this research, but it is likely to be substantial.

2) Assessing the Expected Economic Impacts of Allowing the Moratorium to Expire or Extending the Moratorium:

2.1 Expiration of the Moratorium

Letting the moratorium expire will stimulate renewed interest in the canola industry in New South Wales.

The following impacts can be expected;

- Farmers and agronomists will immediately seek to grow GM canola varieties, if available
- Scientists and technology providers will seek to supply those varieties
- Investment in the biotechnology sector will be stimulated
- Farmers, agronomists, plant breeders and agricultural scientists will be stimulated to innovate and adapt the technology to Australian conditions

GGA cannot forecast with 100% accuracy the state of the canola industry in New South Wales five years after a lifting of the moratorium. It is worth noting however, a report that was commissioned by the Canadian Canola Council in 2000. This report was an objective study to quantify why Canadian farmers were adopting GM canola varieties.

The study, *An Agronomic and Economic Assessment of Transgenic Canola* concluded that:

- The key benefit and motivator to adopting GM varieties was more efficient weed control and ease of herbicide management in preventing weed resistance
- Other reasons related to weed management included cleaning up paddocks, reducing the number of passes to control weeds and perennial weed control
- Some producers reported better yields, higher yields, the ability to reduce costs and generate more profit
- Other reasons for choosing GM varieties were to reduce tillage, seed earlier, conserve soil moisture and to compare GM varieties to conventional canola on a trial basis

It is reasonable to assume the NSW industry, with unfettered access to the technology for a five year period, will at least replicate the on-farm advances made by Canadian producers in their first five years of access. Many of the lessons learned by the Canadians in their first five years of developing the technology are well known and documented. The NSW industry will be able to take advantage of this store of knowledge.

2.1.1 Productivity Gains

The canola industry in Canada has achieved on-farm productivity gains over the past ten years that is boosting the viability of the farm business. Figures from Statistics Canada reveal that in 1997, there were 12,032,800 acres of canola sown to canola in Canada for production of 6.3 million tonnes of canola seed.

In 2006, Canadian farmers sowed 13,150,000 acres to canola for total production of 9.015 million tonnes of oilseed produced.

Over this period of time, acreage sown to canola expanded by 9.28% but on-farm productivity has increased by 42.42%. This productivity increase is an outstanding result for a broad-acre cropping enterprise.

GGA surmises that a combination of factors is contributing to this result. The Canadian Canola Council in 2000 appointed Serecon Consulting and Koch Paul Associates to qualify and quantify the agronomic and economic impacts of transgenic canola.

Considerable data from 1997 to 2000, taken from farmers' records was used to conduct this study. On average, the transgenic varieties recorded a 10% yield advantage over conventional varieties in the year 2000. Several factors affecting yield were considered as part of the, 'package', that resulting in this outcome; higher yielding varieties, earlier sowing and better weed control.

The earlier, one-pass sowing results in higher conserved soil moisture, produces more competitive plants and allows the crop to avoid high spring temperatures which can adversely affect flower and pod development.

The transgenic canola seed was also penalised by the oilseed crushers at a lower rate than the conventional canola, 3.87% to 5.14%. This is attributed to the transgenic canola delivering a cleaner sample with a lower percentage of admixture.

In 2005, PG Economics completed a global impacts study on transgenic cropping over the years 1996 to 2004. This study, *GM Crops: the global socio-economic and environmental impact – the first nine years – 1996 – 2004* also noted that oilseed crushers in Canada were paying a small premium for transgenic canola, due to the lower levels of admixture.

Over the same period in Australia, canola yields have remained static or even declined. In the late 1990's across southern NSW, the phenomenon of declining yields for canola was observed. In 2001, GGA became involved as a sponsor of the Best Bet Canola project. This involves the sponsorship of an agronomy project managed by the Harden District Rural Advisory Service in the Young/Harden/Wallendbeen area in NSW.

The aim of the project is to find agronomic solutions to the decline in canola yields in the high rainfall cropping regions on the East Coast of Australia. The trial work has involved sowing dates, crop rotations, row spacings and the application of different combinations of fungicides.

Some agronomic solutions to some problems have been achieved in this project, but nothing like the gains observed in Canada.

When comparing the modest yield increases that are currently being achieved in Australia to the consistent improvements in Canada, it is clear that the industry in Australia needs access to the science of genetic engineering to start pursuing the productivity gains of our competitors.

2.2 Extending the Moratorium

An extension of the moratorium will send a negative message to the scientific community, the investment community and the agricultural sector.

Specifically in the canola industry, the following impacts can be expected;

- our competitors terms of trade will continue to improve beyond those that can be achieved by the Australian producers
- canola acreage will continue to decline, putting pressure on the sustainability of crop rotations in New South Wales
- private investment in plant breeding will be hampered
- the oilseed crushing industry may be dissuaded from further investment in crushing capacity in Australia
- oilseed crushers may have to make plans to import oilseeds to supplement the domestic crush in the future.

3) Regulatory Framework

Australia has robust regulatory mechanisms to ensure the protection of human health and the environment. The Office of the Gene Technology Regulator is arguably too onerous in the regulatory measures it places upon developers of the technology.

The requirements of Food Standards Australia New Zealand (FSANZ) are an additional layer of compliance that ensures the safety of any food products derived from GM produce.

4) Process Management

Since the state moratoria were implemented, grains industry debate has matured somewhat and industry participants have made preparations for the introduction of transgenic canola and its co-existence with conventional and organic crop cultivars.

Market analysts have noted a shift in global and domestic consumer demand away from supply of commodity products to a greater range of differentiated products and are based on expanding consumer demand for specific food, feed and fibre products.

Bulk handlers, marketers and food processors have been gearing their businesses to be able to supply quality assured and/or identity preserved products to their customers. Based on this reality, the Australian grains industry now has the capability and the levels of competency required to manage co-existence in the supply chain.

The industry joined together to formulate *Principles for Process Management of grain within the Australian Supply Chain* which was launched in August 2007. This document is a guide for industry in an environment where GM and non-GM grain is marketed. It has secured broad industry commitment from marketers, handlers, researchers, farmer representative groups, oilseed crushers, flour millers, grain exporters and other industry organisations.

The measures outlined in the guide will provide the necessary certainty and confidence to supply chain participants, consumers and governments that GM canola and its products will be managed to meet market and customer requirements. Importantly, these measures will also provide market choice.

A separate analysis that took place concurrently to the *Principles for Process Management*, was completed for the Department of Agriculture Fisheries and Forestry's National Biotechnology Strategy.

A National Market Access Framework for GM Canola and Future GM Crops essentially proposes that a national market access framework be established and managed by the grains industry with Government endorsement. Its focus should be providing a process by which market choice is delivered in an environment where products derived from GM crops co-exist with established and future grain based products.

Such a market access framework has been encapsulated in the *Principles for Process Management* document.

Case study

Cotton Australia (CA), the peak organisation representing the industry reports that the application of biotechnology has made a significant contribution in the dramatic reduction in insecticides applied per hectare to cotton crops over the past decade. Cotton incorporating transgenic (genetically modified) traits has a sound track record of safe and successful use in Australia.

CA figures show that over 95% of Australia's cotton growers planted transgenic cotton in the 2004/05 season, producing approximately 80% of the crop.

Transgenic traits have proven to be a tool that has allowed Integrated Pest Management (IPM) practices to be developed in the cotton industry. IPM uses a combination of natural controls and specific chemistry in order to further reduce pesticide use. The Cotton Research and Development Corporation in 2005 reported that the adoption and development of IPM has helped reduce overall insecticide use on the Australian cotton crop by 70 percent.

The cotton industry in Australia has adapted and innovated with genetically modified varieties of cotton. This industry sector has shown the ability of Australian farmers to consider and manage issues that arise as a new technology is introduced.

Recommendations

The extensive market and economic analysis and scientific data from around the world, proves the fears about market access and trade that were the reason for the introduction of the Gene Technology (GM Crop Moratorium) Act 2003, are no longer valid.

On this basis GGA believes that this Act should be allowed to expire as scheduled in March 2008.

References

ABARE

Australia Commodities - September 2005

Article - Transgenic Crops: welfare implications for Australia

Foster. M, French. S

Market Acceptance of GM Canola,

ABARE - March 2007

Glover. J, Mewett. O, Tifan. M, Cunningham. D, Ritman. K, Morrice. B.

What's in the Pipeline? Genetically modified crops in development in Australia.

Bureau of Rural Sciences – 2005

Sankula, S

Quantification of the Impacts on US Agriculture of Biotechnology-Derived Crops planted in 2005. National Centre for Food and Agricultural Policy - November 2006

Serecon Management Consulting Inc. and Koch Paul Associates

An Agronomic and Economic Assessment of GMO Canola – January 2001

Single Vision Grains Australia – Principles for Process Management of Grain Within the Australian Supply Chain – August 2007

Cotton Australia Ltd – Personal Communications

Cotton Research & Development Corporation – Annual Report, 2005 – 2006