
Submission:

In Relation To:

**REVIEW OF THE MORATORIUM ON GENETICALLY MODIFIED
CANOLA**

By Pacific Seeds Pty Ltd

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Background:

Pacific Seeds has been breeding, producing and marketing seed varieties to Australian and international farmers for over 45 years.

The company's success is based on the professional, scientific development of crop varieties which offer benefits to both farmers and consumers.

Pacific Seeds' extensive product knowledge and experience in plant breeding and seed production, commitment to research and development and close links with farmers and end users has seen the company become a respected leader in the seed industry.

We conduct breeding programs involving canola, maize, sunflower, sorghum, sweet corn, oats, wheat and pennisetum. In the past we have been involved in the incorporation of Genetically Modified (GM) traits into canola, but since 2003 have scaled down research activities, pending a review of the various GM Moratoria legislation in each state.

To this extent, Pacific Seeds is an Office of the Gene Technology Regulator (OGTR) accredited organisation and maintains a fully constituted Institutional Biosafety Committee (IBC).

Pacific Seeds is not currently incorporating other GM traits into any of its products.

Basis for the Current Moratoria on GM Canola

Pacific Seeds believes that the national regulatory system that is in place in Australia to assess genetically modified organisms prior to release is sufficient to address any potential risks to human health, safety and the environment.

As far as trade and market acceptance issues are concerned, Pacific Seeds advocates a staged approach to the introduction of new gene technology in food crops, so that farmers and consumers have time to make informed decisions.

Once approved by the OGTR for general release (or concurrent with the process thereof) there should be a process in place to assess potential market impacts of the introduction of the new gene technology.

If there is no clear evidence of potential loss of market opportunities, then no specific moratoria should be imposed. This should be carried out on a case by case basis for every new GM trait to be introduced.

As far as GM canola is concerned, we feel that the time period required for this kind of assessment has now passed, and as such it should be approved by the New South Wales Government for commercial cultivation within the State.

Evidence would suggest that the initial concerns regarding the market reaction to GM canola among Australia's main trading partners and the Australian domestic market are no longer valid.

It is our belief that industry is now able, confident and has the systems and procedures in place to effectively segregate and manage identity preservation (IP) concerns so that the market demands of all customers (GM and non-GM) can be met.

There is therefore no valid reason for the moratoria on the growing of GM canola in New South Wales to continue.

Benefits for farmers and New South Wales

The huge potential benefits to human health and the environment from the adoption of developing traits, such as modified (healthier, more stable) oils, biodiesel (renewable fuels), salt tolerance and drought tolerance further supports the need to promote and encourage GM development and adoption throughout agriculture.

The moratoria if continued, will stifle development, testing and evaluation of these traits and their potential benefits.

We believe that the imposition of moratoria on GM canola itself has hampered the productivity and competitiveness of Australian growers. Their global competitors have access to and the ability to choose whether or not they grow GM canola. Overseas farmers who grow GM canola report productivity gains of between \$22 and \$45/ha (Canadian data). The majority (70%) of canola varieties that are sold currently in Australia are tolerant to the triazine group of herbicides (i.e. TT varieties). Whilst these herbicides provide very effective control of problem weeds, the mechanism by which canola varieties are able themselves to tolerate the herbicide and therefore survive, compromises their ability to carry out photosynthesis. This results in a yield drag or deficit of around 20%, but is a necessary evil that farmers have to put up with to control problem weeds using this specific herbicide tolerance system.

Pacific Seeds was responsible for breeding and developing the first hybrid canola varieties in the world, a true Australian innovation. Hybrid varieties by virtue of how they are bred combine the best characteristics of both their male and female parents. Generally their seed size is larger than open pollinated varieties, resulting in larger energy reserves. This in turn gives these varieties added vigour and the ability to better handle stress, outgrow insects and better resist disease. This all contributes to and translates to better yields, as long as you can control problem weeds.

Ironically, hybrid canola, an innovation developed right here in Australia, is helping Canadian farmers now achieve record yields much to the detriment of Australian growers. Limited Australian trial data on Pacific Seeds' Roundup Ready® hybrid canola varieties in development show yield gains of up to 28% or around 600 kg/ha over Triazine Tolerant varieties (2003 results). These gains are the result of a combination of superior genetics

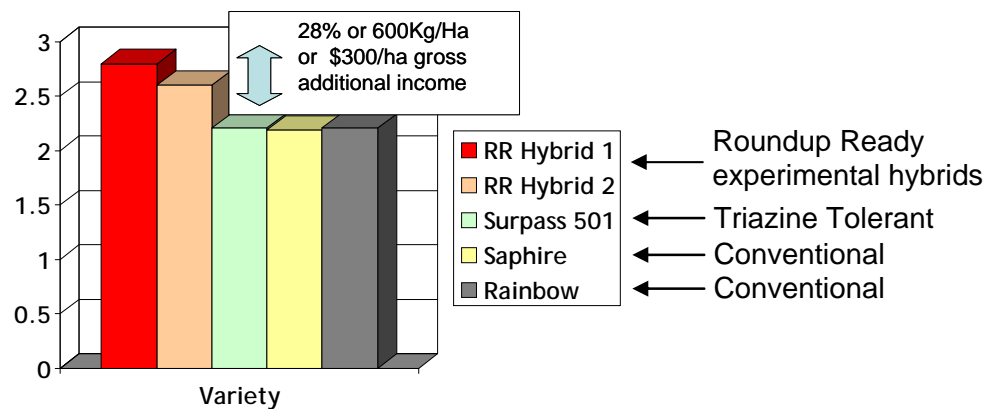
obtained through hybrid breeding and solid weed control achieved utilising the Roundup Ready® system.

Productivity gains of this magnitude represent (based on current season canola pricing for delivered grain) almost \$300 of additional gross income per hectare for farmers in medium to high rainfall areas.

These kind of gains are not only good for farmers but they are good for the State of New South Wales.

Productivity benefits will vary according to varietal fit (maturity and associated rainfall), resistance to disease and seasonal disease pressure and a range of other agronomic factors.

Preliminary Trial Results Roundup Ready- Hybrid Canola



Replicated trials – Eastern States – 2003 season

Pacific Seeds is also engaged in the development of alternate non-GM weed control technologies, which if fruitful, in the medium term, could deliver productivity benefits to growers who would opt to grow non-GM hybrid varieties.

Either way, we have a commitment to helping farmers improve performance whilst at the same time giving them the right to choose the varieties and the technologies that are best suited to boosting productivity on their farms.

Ability to manage Identity Preservation (IP) across the supply chain and deliver market choice

Pacific Seeds is a strong believer that industry must demonstrate to Government its capacity to introduce and manage every new GM trait which has the potential to impact on the trading capacity of that State.

Until such time as it is satisfied, it is the responsibility of the State Government to protect the rights of growers and the community at large, from the potential negative impacts of the introduction of any such GM traits.

This trade assessment and industry competence process is a necessary precursor to the approval of the crop for commercial cultivation within the State.

As far as GM canola is concerned, Pacific Seeds believes that both itself and the industry at large, are now willing and able to competently manage the introduction and ongoing cultivation of the crop so that the needs of all farmers are addressed, whether they be GM or non-GM.

Pacific Seeds is a signatory to and endorses the recommendations and findings in the report entitled 'Delivering Market Choice with GM Canola', a report commissioned by the Grains Research Development Corporation (GRDC), a body funded by grower levies. This report demonstrates the industry's ability and willingness to work together to deliver market choice to growers.

A living example of how the industry is able to manage IP through the supply chain is happening right before our eyes in the states of Victoria and New South Wales with the newly developed low rainfall Juncea canola varieties marketed by Pacific Seeds.

These new non-GM canola varieties represent more than a decade of breeding work carried out by Agriculture Victoria Services (AVS) in conjunction with the Saskatchewan Wheat Pool (SWP).

For growers in low rainfall areas where canola was previously not an option, this represents a breakthrough in farming and the ability to grow a productive and beneficial rotational crop. Unfortunately, due to its newness, the need to assess consistency of oil and meal quality and lack of export clearance of the grain to one of Australia's key trading partners, sales of

the product requires careful management and the output of the crop requires segregation from the rest of the canola harvest.

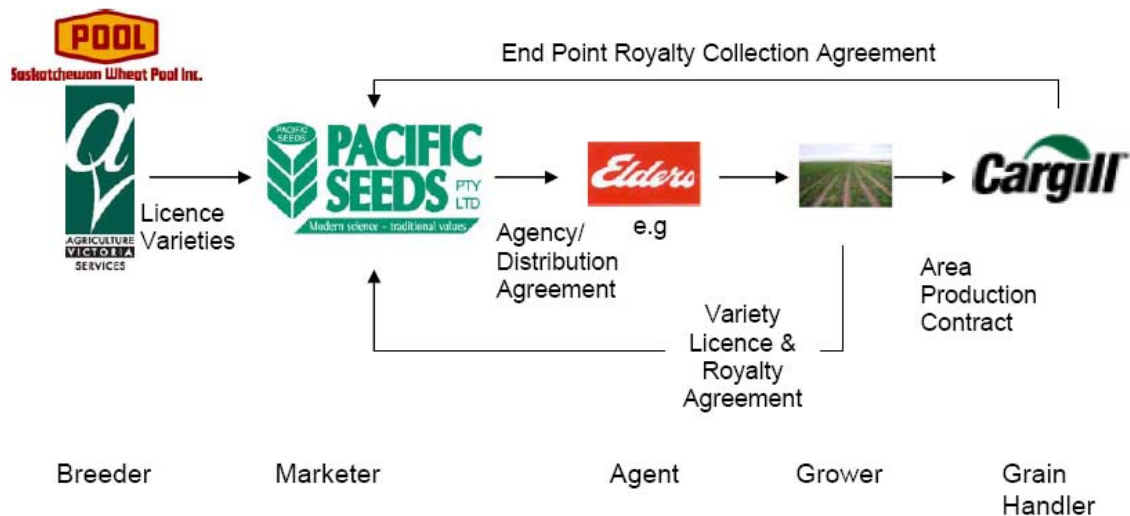
This requirement for segregation and the practices put into place to manage and achieve it have parallels to what could be put into place to manage GM canola, should the New South Wales Government see fit to relax the moratorium.

We have included the following model as an example of how industry is already managing IP in canola, the same capabilities and competencies which could be used to effectively deliver coexistence between GM and non-GM canola and deliver growers with market choice that they desire.

Should the moratoria on GM canola be allowed to expire, Pacific Seeds would undertake to work as part of an industry group to develop a model suited to achieve this.



Juncea Canola Identity Preservation Management Model



A copy of the grower Variety Licence and Royalty Agreement can be found on our website

http://www.pacificseeds.com.au/products/tmp_end_point_royalties.htm

Does non-GM canola achieve price premiums for growers and would a continued moratorium benefit growers?

A recent ABARE report entitled 'Market Acceptance of GM Canola' from 2007 suggests that continued regulation of GM canola would not necessarily result in price premiums or market access advantages for the State's growers. In fact, according to the ABARE report, there is little evidence that Australian growers command any premiums for their non-GM canola exports over their Canadian or US counterparts who export GM canola to Australia's key trading partners.

Given that GM canola now has the widespread support of industry and the infrastructure is now ready and able to manage both it's introduction and ongoing commercial cultivation within the State, we feel it should be deemed an approved crop for cultivation in New South Wales.

Delivering Co-existence in seed supply to the market

Canola seed breeding and marketing companies (like Pacific Seeds), united through the Australian Seed Federation (ASF) have developed and documented world leading strategies for the management of GM canola seed in a coexistence environment. These systems and procedures have been widely adopted across the seed industry to ensure pre-farm gate supply chain issues are addressed. The ASF has also worked closely with down stream supply chain participants to help develop complete supply chain management systems. It is on this basis we feel confident that we are able to manage the introduction of and ongoing supply of GM and non-GM canola seed within the specifications set down by the ASF and agreed to by the Primary Industries Ministerial Council (PIMC).

Management of Adventitious Presence (AP) of GM Material within Pacific Seeds.

Pacific Seeds recognised the potential for low levels of genetically modified material to find their way into conventionally bred germplasm several years ago and subsequently developed, implemented and strictly enforced a rigid testing strategy five years ago. As such, Pacific Seeds has been in compliance with the recently adopted ASF Best Practice Guidelines for Management of Adventitious Presence in Canola Varieties since 2002. This rigorous testing regime has to date not revealed any evidence of GM material in any of our conventional canola varieties.

We have total confidence in our abilities and our quality assurance (QA) system, on which all of our planting seed is produced. Our current system allows us to produce seed to a range of specifications and we have been doing this for years. The risk and management of adventitious GM presence is introducing another quality parameter, which we are confident of being able to manage on an ongoing basis.

Management of Adventitious Presence (AP) of GM Material by the Seed Industry

The major participants in canola breeding in Australia have made significant contributions to the development and adoption of innovative and world best practice supply chain management strategies, especially in the pre-farm gate sector. These national industry wide strategies are managed by the Australian Seed Federation and include technical papers on

topics including AP Management Guidelines, ASF AP Policy for Canola Seed, ASF AP Information paper, in addition to the Best Practice Guidelines for the Management of AP in Canola. They were developed following extensive consultation, research and commitment from across the seed industry and are clear evidence of the technical knowledge within the seed industry and the commitment of this sector of the supply chain to manage the introduction of GM technology into Australian agriculture.