Australian Seed Federation
SOWING SEEDS

ABN 66 003 160 638

26 October 2018

Professor Kym Anderson AC
Independent Reviewer
Review of the South Australian GM Food Crop Moratorium
Primary Industries & Regions SA (PIRSA)

By email: pirsa.gmreview@sa.gov.au

Dear Prof. Kym Anderson AC

I am pleased to provide the following submission on behalf of the Australian Seed Federation (ASF) for the Independent Review of the South Australian GM Food Crop Moratorium.

The ASF is also pleased to confirm that it is interested in receiving any updates about this consultation.

All correspondence regarding this submission and the consultation process can be addressed to:

Ms Alysha Lockley
Business Services Manager
Australian Seed Federation
PO Box 3572
MANUKA ACT 2603
Telephone: 02 6282 6822
Fax: 02 6282 6922
Email: alockley@asf.asn.au

If you have any questions do not hesitate to contact me.

Yours sincerely

Alysha Lockley
Business Services Manager
Australian Seed Federation

Australian Seed Federation submission for the Independent Review of the South Australia Genetically Modified Food Crop Moratorium

October 2018

INTRODUCTION

The Australian Seed Federation (ASF) welcomes the opportunity to provide the following submission to the review of the moratorium on the transport ban growing of genetically modified crops in South Australia.

The ASF is the peak national body representing the interests of Australia's sowing seed industry at the state, national and international levels. The ASF membership base comprises stakeholders from all sectors of the seed supply chain including plant breeders, seed growers, seed processors and seed marketers, all of whom were consulted in the preparation of this submission.

We have a stated position on biotechnology that *'The ASF supports choice in relation to crop biotechnology provided that the choice is based on sound science and respects the rights of others to also choose.'*

In Australia, the seed industry is a vital link in the development of crops that are critical to the country's agricultural productivity, sustainability and food security. The ASF has prepared this submission to highlight the broad affects the South Australia ban on genetically modified crops is having specific to the seed industry, and to support removal of the moratorium.

KEY POINTS

1. There has been minimal evidence to support the statement that the South Australian moratorium on the cultivation of Genetically Modified Organisms (GMOs) has led to marketing premiums of agricultural produce grown in the State over and above the price in other States in Australia who produce non-GM produce and permit the commercial farming of GMOs.

2. Having the GMO moratorium in place in South Australia is restricting growth and innovation in the State's agricultural sector. It is denying SA growers and farmers access to innovative breeding technologies and new crops/ products both now and in the future, which their competitors in other Australian States have access to.

3. The ASF supports the IMMEDIATE lifting of the South Australian GMO transport ban due to the significant negative implications to the seed and agriculture industry. For example, the increased cost to seed producers and long delays resulting in having to use other transportation measures diverting genetically modified seed around South Australia.

GENETICALLY MODIFIED CROPS AND PLANT BREEDING

Plant breeding depends upon genetic variability within and across related species as a basis for developing new plant varieties with improved characteristics. To create a new plant variety, plant breeders have generally relied on two sources of genetic variation as a basis for new characteristics: the inherent diversity in a plant's gene pool and new, naturally occurring variants of existing genes.

Plant breeders have always used the creation of new variations of plant characteristics to provide solutions for resistance to plant diseases and pests, to increase tolerance to environmental stress, to improve quality and yields, and to meet consumer expectations.

Breeders often make crosses between plants of diverse genetic makeup to produce new combinations of genetic characteristics which result in diverse morphological or quality characteristics in the progeny plants. The natural diversity of different sources of germplasm within a species or its close relatives is a primary source of genetic variation.

Genetic variation can also be increased by mutations – changes in the DNA sequences of the plants. In plants, spontaneous mutation mechanisms and induced mutagenesis (e.g. chemical and irradiation) have long been exploited to introduce different types of mutations that confer desirable traits to breeding programs. Such mutations may range from point mutations, which include substitutions, insertions and deletions of one or a few DNA base-pairs, to larger changes including gene duplications and chromosomal rearrangements. Since the 1950s, well over 3,200 crop varieties have been directly developed by mutation breeding.

Genetic engineering is a tool to further assist plant breeders to develop plants with desired traits and has been used successfully in agriculture for over 20 years. Globally, plantings of biotech crops have increased from 1.7 million hectares in 1996 to 189.8 million hectares in 2017, and such crops are now being used by up to 17 million farmers in 24 countries. Indeed, biotech crops have been the fastest adopted crop technology in the history of modern agriculture.[1]

Plant breeders use common and well-established practices to evaluate the quality and safety of new varieties introduced into the market. Every commercial variety is checked over several generations for safety prior to launch. All foods introduced on to the Australian and New Zealand market are also subject to food safety recall and misleading and deceptive labelling requirements.

In addition to this, numerous regulatory authorities worldwide that have assessed GMOs for commercial release have concluded that these products present no unique risks to human or animal health or to the environment and are as safe as other plant breeding methods. These groups include official commissions, scientific bodies, and government regulators (including the Australian Office of the Gene Technology Regulator (OGTR) and Food Standards Australia New Zealand) and international organisations, such as the OECD and the Codex Alimentarius, which are staffed with experts from all relevant disciplines.[2]

The OGTR in particular is responsible for protecting the health and safety of people and the environment by identifying risk posed by or as a result of gene technology in Australia and manages those risks through various processes.

GMOs approved by the OGTR for commercial release in Australia are recognised as being just as safe for the environment and fit for human consumption or use than those produced through non-GM methods and conventional breeding techniques.

The ASF believes that the current ban on dealings with GMOs in South Australia is denying SA growers and agricultural companies access to already approved technologies in Australia which the other States have adopted, including the use of specific weed and pest control products which could all result in having better quality products for consumers, farmers and the processing value chain in the State.

[1] International Service for the Acquisition of Agri-biotech Applications (ISAAA). *'Pocket K No. 16: Biotech Crop Highlights in 2017 Report'*. www.isaaa.org/resources/publications/pocketk/16/

[2] International Seed Federation (ISF). June 2005. 'Genetically Modified Crops and Plant Breeding'. Santiago. http://www.worldseed.org/wp-content/uploads/2015/10/Genetically_Modified_Crops_and_Plant_Breeding_20050601_En.pdf

GENETICALLY MODIFIED CROPS LICENCED FOR COMMERCIAL RELEASE IN AUSTRALIA

The table below outlines the genetically modified crops licenced by the OGTR for commercial release in Australia. These are new products and innovations available for commercial adoption which could have benefit to South Australia's agricultural industry if the moratorium were lifted.

Licence No	Parent Organism	Modified Trait	Organisation	Issue Date
DIR 158	Safflower (*Carthamus tinctorius* L.)	Composition – non-food (processing), Selectable marker – antibiotic	Go Resources Pty Ltd	27-Jun-18
DIR 157	Cotton (*Gossypium hirsutum* L.)	Insect resistance	Syngenta Australia Pty Ltd	14-Feb-18
DIR 155	Canola (*Brassica napus* L.)	Composition - food (human nutrition),Composition - animal nutrition, Selectable marker - herbicide	Nuseed Pty Ltd	13-Feb-18
DIR 145	Cotton (*Gossypium hirsutum* L.)	Insect resistance and herbicide tolerance	Monsanto Australia Limited	20-Dec-16
DIR 143	Cotton (*Gossypium hirsutum* L.)	Insect resistance and herbicide tolerance	BASF Agricultural Solutions Australia Pty Ltd	8-Dec-16
DIR 139	Canola (*Brassica napus* L.)	Herbicide tolerance	Pioneer Hi-Bred Australia Pty Ltd	29-Mar-16
DIR 138	Canola (*Brassica napus* L.)	Herbicide tolerance, Hybrid breeding system	BASF Agricultural Solutions Australia Pty Ltd	22-Mar-16
DIR 134	Carnation (Dianthus caryophyllusL.)	Modified colour , Selectable marker – herbicide	International Flower Developments Pty Ltd	8-Oct-15
DIR 127	Canola (*Brassica napus* L.)	Herbicide tolerance	Monsanto Australia Ltd	21-Nov-14
DIR 124	Cotton (*Gossypium hirsutum* L.)	Herbicide tolerance, Insect resistance, Selectable marker - antibiotic, Reporter gene expression	Monsanto Australia Ltd	19-Jun-14
DIR 118	Cotton (*Gossypium barbadense*L.)	Herbicide tolerance	Monsanto Australia Ltd	16-Aug-13
DIR 108	Canola (*Brassica napus* L.)	Herbicide tolerance/Hybrid breeding system	BASF Agricultural Solutions Australia Pty Ltd	2-Dec-11
DIR 091	Cotton (*Gossypium hirsutum* L.)	Insect resistance, Selectable marker - herbicide	Dow AgroSciences Australia Pty Ltd	25-Nov-09
DIR 066/2006	Cotton (*Gossypium hirsutum* L.)	Herbicide tolerance, Insect resistance, Selectable marker - antibiotic, Reporter gene expression	Monsanto Australia Ltd	26-Oct-06
DIR 062/2005	Cotton (Gossypium hirsutum L.)	Herbicide tolerance	BASF Agricultural Solutions Pty Ltd	8-Aug-06
DIR 021/2002	Canola (*Brassica napus* L.)	Herbicide tolerance, Hybrid breeding system	BASF Agricultural Solutions Pty Ltd	25-Jul-03
DIR 020/2002	Canola (*Brassica napus* L.)	herbicide tolerance	Monsanto Australia Ltd	19-Dec-03

Source: Office of the Gene Technology Regulator (OGTR), GMO Record http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/ir-1

OTHER RELEVANT EVIDENCE TO INFORM THE ANALYSIS

SOUTH AUSTRALIA TRANSPORT BAN

The South Australia *Genetically Modified Crops Management Act 2004* (the Act) was introduced to regulate and protect the cultivation and marketability of non-GMO crops in the State.

The ASF would like to inform the Committee that the current restrictions outlined in the Act on gene technology dealings in South Australia are imposing a logistical constraint on the operations of plant breeders who are involved in this market sector, including significant additional costs being imposed on members who are actively working to supply the legal seed for sowing market nationally. The South Australian Government maintains a total ban on the transport of GM seed and grain through the State. This ban applies even to those products – including Roundup Ready canola – that have been approved for legitimate commercial release in Australia by the OGTR. We are not sure that this was the intention of the initial drafters of the moratorium legislation, but the result of subsequent amendments to Commonwealth legislation. This could be easily addressed.

This ban is affecting the industry's ability to source seed from production areas and to transport it within a timely and cost-effective manner to consumers around Australia. GM canola approved for planting in Australia cannot be transported directly by truck across the country with the SA transport ban in place. It must either be sent by road around to Western Australia via the Northern Territory, shipped via sea around South Australia, or air freighted. All of this adds time and increased costs which not only affects ASF members in WA and the Eastern areas but the entire seed supply chain particularly in South Australia, as it is likely the increased costs are being passed on to all Australian consumers and all Australian canola growers.

Quality testing of seed has also been affected, with seed companies now having to send GM seed to testing labs further afield for results. This is affecting ASF members' economic bottom line and puts us at a disadvantage trade-wise in reacting to market demand. All seed laboratories in South Australia should have the ability to test genetically modified seed for standard quality parameters.

We would also like to point out the transport ban imposed on South Australia is affecting free trade among States and would question whether it is consistent with Section 92 of the Australian Constitution which requires that the "trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free'.[3]

The final report from the Productivity Commission Inquiry into the Regulations of Australian Agriculture from November 2016 also recommended that *"the New South Wales, South Australian, Tasmanian and ACT Governments should remove their moratoria on GM crops."* The ASF supports this recommendation and calls for an immediate lifting of the GMO transport ban as a first step.

[3] Australian Government. Commonwealth of Australia Constitution Act (The Constitution). Act No. 84 of 1977. 'Section 92 Trade within the Commonwealth to be free'

IMPACT TO THE SEED AND AGRICULTURE INDUSTRY

The Australian seed industry has a demonstrated history of segregating varieties where GM and non-GM produce in other states has been grown and can survive equally in the one state. The ASF believes if the Genetically Modified ban on crops were lifted in South Australia it would allow farmers and seed companies to have a choice and would create equal trade of GM and non-GM produce in the State and also allow for more competition nationally and internationally. The South Australian Government argue having the imposed ban is a point of difference in the State being GM free and claims local farmers receive better prices however there is no scientific data or evidence of financial benefit to the State to prove this theory.

In March 2018, Mecardo conducted a market analysis report commissioned by Grain Producers South Australia and the Agricultural Biotechnology Council of Australia, on price premiums under the South Australian GM moratorium and found no evidence of substantive premiums to growers as a result of the ban. They concluded in there being no financial reason to continue the moratorium in South Australia[4].

The Productivity Commission found that "the regulation of genetically modified organisms (GMO) for marketing purposes where there is evidence that industry (both in states without regulatory restrictions and internationally) can successfully manage the coexistence of GM and non-GM crops. Furthermore, the report outlines there is limited evidence of GMO-free marketing benefits at the bulk trade level.[5]

The South Australian Government have ignored the advice and findings of the GM Crops Advisory Committee which was formed in 2007 to review the legislation on the *Genetically Modified Crops Management Act 2004*. In February 2008 the scientific committee "recommended the lifting of the current moratorium in SA, except on Kangaroo Island"[6]. However, the SA Government decided to extend the moratorium on commercial GM crops claiming for marketing benefits and furthermore have also banned the transport of GM seed packed into sealed contained bags throughout the State.

POTENTIAL INNOVATIONS FOR COMMERCIAL ADOPTION IN SOUTH AUSTRALIA

In relation to accessing and adopting technological innovations that will continue to support the growth and sustainability of agriculture in South Australia the current moratorium poses a number of questions for the South Australian agricultural industry and Government.

For South Australia to maintain its leadership in agriculture, especially in food and wine production it needs sustained investment in technological innovation including agricultural biotechnology. In its absence agriculture will surely suffer if it cannot capture the benefits of investing in agricultural innovation. The moratorium has created an environment which discourages this investment and sends the wrong messages to those working on the development of the innovations that are beneficial for South Australian agriculture, and even to those considering embarking on related careers.

[4] Mecardo Expert Market Analysis. March 2018. 'Analysis of price premiums under the South Australian GM moratorium'. Grain Producers South Australia (GPSA), Agricultural Biotechnology Council of Australia (ABCA).
[5] Australian Government, Productivity Commission. November 2016, 15. 'Regulation of Australian Agriculture – Productivity Commission Inquiry Report'. No. 79. www.pc.gov.au/inquiries/completed/agriculture/report/agriculture.pdf
[6] Marohasy, J. 'February 2008, 18. 'South Australian Government Ignores Recommendation to Lift Ban on GM Crops'. Scientific Author. https://jennifermarohasy.com/2008/02/south-australian-government-ignores-recommendation-to-lift-ban-on-gm-crops/

It is an inherent right for South Australia farmers and supply chains to make choices from technologies which are available in other states of Australia and to its competitors internationally. Currently, with regard to innovations in agricultural biotechnology this right does not exist. For example, In June 2004, CSIRO and the Grains Research and Development Corporation (GRDC) joined forces to establish the Crop Biofactories Initiative (CBI), an innovative program with a 12-year timeframe. The aim of the $15 million investment was to establish and develop a commercially viable plant-based industrial oils industry by 2020. The industry being based on the introduction of new high value oilseed crops which could be adopted by farmers throughout the grain growing regions of Australia, including South Australia.

From this initiative two new high value crops have been released. The first is a canola crop which can produce Omega 3 oil and meal for use in a range of high value uses including food production and as a feed for the seafood industry. The second crop is super high oleic safflower which produces an oil which will be targeted for use in the high value oleo chemical industry, where it will replace current sources of oleic oil such as environmentally sensitive palm oil. The oil will be used for products such as lubricants, transformer oils, cosmetics and medical uses.

Under the current moratorium, even though South Australia farmers have contributed to the development of these two crops through the levies they have paid to GRDC, they are unable to benefit from these crops in their rotations due to the current status of the moratoriums. In the case of the super high oleic safflower, the irony is that the traditional home for growing safflower in Australia has been the south-east of South Australia.

Within the context of the current review of the moratorium there are two alternate questions and outcomes which must be considered:

1. **Is the South Australian Government prepared to let investment in agriculture innovation and its adoption by farmers continue to slip away and lead to a further decline in the value of agriculture to the South Australian economy, including employment and education? Or**

2. **Can the South Australian Government create an environment where its policies encourage and support investment in the development and adoption of innovative technologies (including agricultural biotechnology) that will be beneficial to all agricultural producers and the broader community, as well as maintaining South Australia's leadership in food and wine production.**

The future of innovation and sustainability is a long term strategy. To ensure meaningful progress it requires articulation of a vision, together with the stamina and fortitude to wrestle the tough issues and follow through. A detailed list of actual innovations that are currently being trialled in Australia under limited and controlled release licences, and that South Australia could potentially miss out on, can be viewed via the OGTR's website at www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/ir-1.

The path forward for investment in innovation in South Australian agriculture will depend on more than rhetoric. To remain internationally competitive and meet the potential for growth through to 2030 will depend on the South Australian Government adopting policies that embrace innovation, engage investment and bring new technology, such as agricultural biotechnology to market in a timely manner that allows a realization of the intended benefits of that investment for all South Australians.

CONCLUSION

The ASF's view is that having this moratorium in place means that there is continued restriction on the growth of the seed industry in South Australia and less opportunity for South Australian growers to access current and new plant breeding technology advancements which other States are adopting and using in the marketplace. The demand for GM seed is continuing to increase both nationally and globally, however SA growers remain at a disadvantage. In light of this, the ASF supports the view that South Australia should remove its moratorium on GM crops to allow seed companies and farmers to have a choice in producing GM or non-GM produce. The seed industry is confident that market choice can be delivered, as has been demonstrated in other States where GM and non-GM crops are both being grown.

In particular, the ASF would like to see the transport ban of GM through the state of South Australia immediately removed. By default, the moratorium has restricted and impacted transport of approved GM canola technologies to parts of Australia. Removal of the transport ban will further support the seed industry in meeting the needs of consumers and safeguarding seed supply throughout the country.

All seed testing laboratories in South Australia should also have the ability to test genetically modified seeds for the standard seed quality parameters.

The reasons from the State Government in South Australia maintaining a GM moratorium in place, and by default also having a transport ban of GMOs, are not valid as there has been market analysis research conducted that clearly demonstrates that there is no significant evidence supporting the claims of a marketing advantage of price premiums to SA farmers resulting from this moratorium. Indeed, prices for non-GM products are higher in other States which are also growing GM crops – proof that coexistence does work and that the Australian industry can deliver market choice.