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GM Moratorium Report Consultation
GPO Box 1671
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Sent electronically: Minister.Whetstone@sa.gov.au

8 March 2019

Dear Minister Whetstone

Response to the Review of South Australia's moratorium on the cultivation of Genetically Modified (GM) food crops ("The Anderson Review")

Grain Producers SA (GPSA) is the peak industry body for South Australian grain growers. GPSA is non-political and represents producers to government, the community and industry, including grain marketers, exporters, storage and handlers, researchers and farm input suppliers.

We develop and implement policies and projects that promote the economic and environmental sustainability of South Australian grain growing businesses.

We welcome the findings of the Independent Review established by the South Australian Government, to review the Moratorium on the Cultivation of Genetically Modified Crops in South Australia. GPSA commends Prof Anderson for his comprehensive assessment.

GPSA is pleased to provide a response to the findings and welcomes the opportunity to discuss industry's position.

If you have any queries, please don't hesitate to contact me on 1300 734 884.

Yours sincerely



Caroline Rhodes

Chief Executive Officer

Response by Grain Producers SA (“GPSA”) to the Independent Review of South Australia’s moratorium on the cultivation of Genetically Modified (GM) food crops (“the Anderson Review”).

1.0 Introduction

Grain Producers SA (GPSA) welcomes the focus of the South Australian Government to review the legislative arrangements that regulate the cultivation of genetically modified crops (GM crops) in South Australia. South Australia is the last mainland state that has placed a ban on the commercial cultivation of GM crops. Our members are becoming increasingly frustrated that they do not have the same opportunities in their farming systems that their interstate counterparts have.

GPSA is pleased to see that the Review recognises the cost of the moratorium to one of South Australia’s largest industries. This cost is conservatively estimated at \$33 million since 2004 for canola alone. GPSA-commissioned analysis demonstrates that the GM moratorium removes the option of utilising innovative agronomic tools, licenced by the Office of the Gene Technology Regulator (OGTR) as safe, with little in the way of trade and marketing benefit to the majority of agricultural producers in South Australia. This report (as attached to GPSA’s original submission) found no evidence to suggest that the repeal of the moratorium, and the introduction of GM canola, would lead to any reduction in comparable prices to South Australian farmers. As a result, GPSA’s believes that growers should have the freedom of choice to grow the cereal, legume and oilseed varieties that best fit their farming system, which means having access to GM crops.

Australian grain producers have a long history of innovating and adopting new technology to improve productivity. We need to ensure growers in South Australia have access to all the tools on offer for best practice crop production.

GPSA’s position is not about picking winning production systems, but rather enabling all producers to have the freedom of individual to grow whatever crops best suit their business. The Australian grains industry successfully and safely manages a complex supply chain. The industry self regulates through best practice quality systems and processes that effectively manage numerous segregations tailored for various markets. As such, growers’ choice to remain GM-free on their farm will be retained should the moratorium be lifted.

The current moratorium on GM crops offers little in the way of trade and marketing benefits to the majority of agricultural producers in SA, and only removes the option of using safe and effective GM tools. The Review also recognises there are additional benefits from GM crops such as reduced weed control costs and increased yields which have not been quantified.

The Government must now begin the process of removing this impediment on our industry and GPSA strongly recommends an unrestricted removal of the moratorium in alignment with other mainland states.

2.0 Response to Review Findings

Finding 1.1: Farm productivity growth has contributed strongly to growth in Australia's farm output since the 1950s, and has outpaced productivity growth in other market sectors of the Australian economy by a considerable margin until recently.

GPSA agrees with this finding noting that field crops accounted for 28% (\$4.16b) of the 2017–18 primary industries and agribusiness revenue in South Australia¹. Importantly, canola is only considered a minor crop in South Australia, however, GPSA notes that the value of Australia's canola exports has more than tripled since 2004/2005 from \$397M to \$1,306M in 2017/2018², suggesting no negative impact has arisen from the growing of GM canola in NSW, Western Australia and Victoria. Despite this increase, over the same period the proportion of Australia's canola grown in SA has declined from 15.7% to 8.7%³. South Australia fails to capture any value from the increased export of canola.

Finding 1.2: Productivity growth has slowed in the past decade or so in Australia's farm sector relative to its non-farm sectors and to farm sectors in countries that have fully embraced GM crop technologies such as the United States and Brazil.

It is well understood that innovation is a key driver of productivity growth and contributes to ensuring long-term sustainability on-farm. Farmers can reduce input costs by adopting more efficient technologies and management practices.

GPSA notes that farmers in other Australian states as well as overseas competitors are afforded greater opportunities and choices in crop varieties and crop biotechnology when compared to SA farmers. GPSA believes that SA farmers should be provided with the same ability to choose innovations to ensure that they remain sustainable and internationally competitive.

Finding 2.1: There is awareness and appreciation of South Australia's GM food crop moratorium by at least one foreign firm (in Japan) and by several food processing businesses operating in South Australia.

GPSA is only aware of one international firm having made a grain purchasing decision as a result of South Australia's moratorium.

Australia's robust supply chain guarantees that the removal of the moratorium will not affect South Australia's ability to export GM-free produce, and nor will it affect the ability of South Australian food manufacturers to market their products as GM-free. South Australian growers and food manufacturers will still be able to participate in the non-GM food market.

¹ Primary Industries Score Card 2017-2018. Retrieved March 2019 from http://pir.sa.gov.au/data/assets/pdf_file/0006/337218/Primary_Industries_Score_Card_2017-18.pdf

² ABARES (2019) Agricultural commodities and trade data. Retrieved March 2019 from <http://www.agriculture.gov.au/abares/research-topics/agricultural-commodities/agricultural-commodities-trade-data#2018>

³ *Ibid*

There has also been a clear demonstration of a continuing global trend towards adoption and market access for GM crops and foods. In their 13th annual report on the global economic and environmental impact of genetically modified (GM) crops, Brookes and Barfoot (2018)^[1] provide insights into the reasons farmers around the world have adopted crop biotechnology. Their assessment indicates that there are demonstrable economic, social and environmental benefits to the adoption of GM crops. Despite significant regulatory hurdles and costs associated with bringing biotech crops to market, the demand and trade of key GM commodities such as maize, cotton, canola, and soybean continues to grow.

GPSA acknowledges that there is an appreciation of the SA moratorium by some sectors. However, as noted in the Anderson Review and supported by several independent studies^{[2],[3],[4]}, the moratorium does not appear to offer a competitive advantage nor a price premium to those sectors. Further, there is no evidence to suggest that the removal of the moratorium would have an adverse impact on those sectors.

Finding 2.2: If GM food crop production were to be allowed in the rest of South Australia, Kangaroo Island would be able to preserve its unique identity so as to retain access to Japan's high-priced market for GM-free grain provided the island remained a GM-free zone.

The Anderson Review (Section 3.2) highlights the ability of the grain supply chain to effectively manage segregations and the coexistence of GM and non-GM crops. This is reflected in Finding 3.3 and in the statement *"The experiences of GM canola production and marketing in other mainland states over the past decade reveal that segregation and identity preservation protocols and codes of practice can and do ensure the successful coexistence of GM and non-GM crops in Australia."*

GPSA is proud of the industry's long history of implementing processes and systems that ensure the coexistence of various commodities throughout the supply chain. Similar systems are in place and operating successfully for GM and non-GM canola in other states, underpinned by industry policies, practices, and standards^{4,5,6,7,8}.

[1] Brookes G and Barfoot P (2018) *'GM crops: global socio-economic and environmental impacts 1996-2016'*. PG Economics, Dorchester, UK (June).

[2] Whitelaw A (2016) *'Is the GM ban in South Australia providing a premium?'*. Mercado Expert Market Analysis: 25 July 2016

[3] Whitelaw A (2017) *'Controversial canola'*. Mercado Expert Analysis: May 25 2017.

[4] Whitelaw A, Dagleish M and Agar O (2018) *'Analysis of price premiums under the South Australian GM moratorium'*. Report independently produced by Mecardo, under commission from Grain Producers South Australia (GPSA) and the Agricultural Biotechnology Council of Australia (ABCA), March

⁴ Towards coexistence Management practices for agricultural production systems, Retrieved in October 2018 from: https://www.abca.com.au/wp-content/uploads/2012/09/AFAA_Coexistence_Bklet_FINAL_Jan06.pdf

⁵ Principles for process management of grain within the Australian supply chain: A guide for industry in an environment where GM and non-GM grain is marketed, Retrieved October 2018 from: http://australianoilseeds.com/_data/assets/pdf_file/0020/2981/Principles_for_Process_Management_Final.pdf

⁶ Site segregation plans, Retrieved October 2018 from <http://www.graincorp.com.au/grains>

⁷ Australian Oilseed Federation Quality Standards, Technical Information & Typical Analysis, Retrieved October 2018 from: http://www.australianoilseeds.com/_data/assets/pdf_file/0014/12056/2018-19_AOF_Standards_V17_-_1_August_2018-Final.pdf

⁸ Excellence through stewardship: <https://www.excellencethroughstewardship.org>

Finding 2.3: The majority of submissions, including those from organisations representing most of South Australia’s farmers, favour the immediate removal of South Australia’s moratorium on GM crop production and transport.

In our submission, GPSA asserted that there has been no benefit from South Australia’s GM-free status. The body of evidence suggests that there has in fact been a significant cost to South Australia as a result of the moratorium. The costs outlined in our submission included:

Loss of reputation: South Australia is seen by other jurisdictions as a major contributor to the lack of consistency to the national regulatory scheme for gene technology. Further, South Australia is no longer seen as a leader in agricultural innovation.

Loss of competitiveness: South Australian farmers are not afforded access to or the choice to use the latest technologies and tools that ensure they can maintain a competitive and sustainable business. There has been no economic advantage in maintaining a GM free status.

Increased cost to business: The moratorium has resulted in lost revenue, increased operating, capital and regulatory costs, and poor confidence in agricultural investment.

Disapproval: South Australian farmers, the farming system and supply chain are not valued for the contribution they make to the state. Our industry has been unfairly stigmatised as not having regard for the safety of our food or sustainability of the environment.

Loss of research investment: Until recently the University of Adelaide hosted the Australian Centre for Plant Functional Genomics (‘ACPFG’). This world-class scientific centre worked to discover genes that would improve stress tolerance such as heat, drought, frost and salt in Australian crops. Their discoveries were being trialled in GM wheat and barley in-field⁹. However, there has been a dramatic reduction in funding due to no local path to market for these innovations. These leading researchers have now been lost to overseas competitors.

Finding 2.4: Bringing South Australian legislation into line with other mainland states and the Commonwealth will benefit the state by attracting/retaining research dollars, scientists and post-graduate students in South Australia.

Regulatory conditions are important factors influencing the innovation activities of companies, industries, and whole economies. It is no surprise that the moratorium has been a significant consideration for private investment in agriculture. A lack of a clear pathway to market has hindered research and made it difficult to attract and retain students and academics in agricultural research.

GPSA notes Finding 3.4 of the Anderson Review and expresses concern that SA growers are continuing to subsidise R&D outcomes that they are not able to access as a result of the moratorium. Most recently, GRDC and Artesian announced a partnership to establish the \$50 million GrainInnovate (www.graininnovate.com) fund to boost innovation in the grains industry. The fund is designed to “...draw the best and brightest tech start-ups from across the

⁹ Under the following licences issued by the OGTR DIR128 and DIR152: Accessed <http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/ir-1>

globe to focus on innovative solutions for grain growers' hardest to solve problems". This would include innovations in GM technology to tackle climate variability, productivity and sustainability. Government cannot ignore the possibility that this vital research investment could be attracted to SA if there was a clearer pathway to market.

GPSA believes that there is high regard for Australia's National Gene Technology Scheme, both domestically and internationally. However, the credibility and integrity of the Scheme's governance structure is undermined by South Australia's moratorium. South Australian legislation extends beyond 'marketing purposes' by placing restrictions on the transportation of GM materials within and through the State.

A number of arguments against moratoria have been presented in government reports, including the *Productivity Commission's Inquiry Report: Regulation of Australian Agriculture (2017)*¹⁰ and the House of Representatives Standing Committee on Agriculture and Industry's *Smart Farming–Inquiry into Agricultural Innovation* report (2016)¹¹. Both reports recommended that state and territory moratoria be removed as a matter of government consideration.

GPSA supports a nationally consistent regulatory framework that provides a risk-based and transparent assessment of any potential risk posed by the introduction of a GM crop. This includes an assessment and licencing from the OGTR, as well as a food safety assessment from FSANZ and where applicable, regulation of agricultural chemicals produced in, or used on, GM crops through the APVMA. However, the lack of a clear pathway to market in SA for such opportunities prevents investments in research and development and the infrastructure that supports it. The effect is particularly costly to regional centres that are benefiting in other states of Australia.

Finding 3.1: Data on canola exports from Australian states to the European Union do not support the view that South Australians enjoy better access in EU non-GM grain markets.

GPSA notes that during the most-recent two years, the four biggest markets of South Australia's canola exports have been European Union (EU) countries, with Japan in fifth place. In fact, as outlined above, exports to Belgium, France and Germany have substantially increased in recent years¹² supporting the statement in the Anderson Review that *"...segregation and identity preservation are sufficiently robust that the EU does not discriminate between Australian states in sourcing non-GM canola"*.

¹⁰ Productivity Commission (2016). Regulation of Agriculture. Retrieved October 2018 from <https://www.pc.gov.au/inquiries/completed/agriculture/report/agriculture.pdf>

¹¹ House of Representatives Standing Committee on Agriculture and Industry (2016). Smart Farming–Inquiry into Agricultural innovation. Retrieved October 2018 from: https://www.aph.gov.au/Parliamentary_Business/Committees/House/Agriculture_and_Industry/Agricultural_innovation/Report

¹² ABARES (2019) Agricultural commodities and trade data. Retrieved March 2019 from <http://www.agriculture.gov.au/abares/research-topics/agricultural-commodities/agricultural-commodities-trade-data#2018>

Finding 3.2: The only data provided in submissions on prices of grain in South Australia versus grain in neighbouring states suggest that since 2012 there has been no premium for grain from South Australia despite it being the only mainland state with a GM crop moratorium.

GPSA reiterates the findings from the Anderson Review as well as several independent studies^{13,14,15} that conclude the moratorium does not offer a competitive advantage nor a price premium to South Australian agriculture. The most recent study¹⁶ found average prices of key crop products received by farmers on delivery to the main port in South Australia were no higher than those received by farmers at their main port in Victoria or Western Australia. In fact, grain prices in South Australia were slightly lower and have declined since 2012 relative to other states where GM canola is produced.

We note that references by some to the price discount between non-GM and GM canola as published in *The Weekly Times* strengthens GPSA's argument. The price discount exists between GM and non-GM grain because these are different commodities.

The difference in the prices of these commodities shows that industry has confidence in segregation. Further, this aligns closely with the findings of the Mecardo report which found that there was no premium for grain as a result of South Australia's GM moratorium¹⁷. If South Australian producers were in fact receiving a premium as a result of the GM moratorium then this would be plainly evident upon comparing equivalent commodities in different states.

Finding 3.3: The experience of GM canola production and marketing in other mainland states over the past decade reveals that segregation and identity preservation protocols and practice codes can and do ensure the successful coexistence of GM and non-GM crops in Australia.

GPSA supports the finding set out in Section 3.2 of the Anderson Review. In this section of the Review the recommendation of the South Australian House of Assembly Select Committee on Genetically Modified Organisms is highlighted. That is, that the commercial release of GM crops into South Australian agriculture only be permitted when "*coexistence to meet market demands for different classes of crops and products, e.g. GM free, non-GM and GM, can be guaranteed by industry through the establishment of rigorous and cost-effective segregation and identity preservation systems throughout the total production and supply chain.*"¹⁸ GPSA argues Australian industry has demonstrated successful coexistence over the past decade and

¹³ Whitelaw A (2016) *'Is the GM ban in South Australia providing a premium?'*. Mercado Expert Market Analysis: 25 July 2016

¹⁴ Whitelaw A (2017) *'Controversial canola'*. Mercado Expert Analysis: May 25 2017.

¹⁵ Whitelaw A, Dagleish M and Agar O (2018) *'Analysis of price premiums under the South Australian GM moratorium'*. Report independently produced by Mecardo, under commission from Grain Producers South Australia (GPSA) and the Agricultural Biotechnology Council of Australia (ABCA), March

¹⁶ *Ibid*

¹⁷ Whitelaw A, Dagleish M and Agar O (2018) *'Analysis of price premiums under the South Australian GM moratorium'*. Report independently produced by Mecardo, under commission from Grain Producers South Australia (GPSA) and the Agricultural Biotechnology Council of Australia (ABCA), March

¹⁸ SA Genetically Modified Crop Advisory Committee (2007), Genetically Modified Crops Management Act 2004 Review: Report of the Genetically Modified Crop Advisory Committee, Adelaide: Parliament of South Australia, 24 October.

therefore presents no barrier to the rapid introduction of GM crops in South Australia, providing that those same protocols can be implemented within South Australia.

As highlighted in GPSA's submission, the social impact of regulation is often forgotten but should nevertheless be an important consideration for Government. The moratorium signals to the public and our export markets that the Government does not have faith or trust in agricultural production in South Australia through the banning of GM crops that have been approved by the OGTR.

Government must acknowledge that the Australian grains industry has a long history of successfully and safely managing a complex supply chain. The industry self regulates through best practice quality systems and processes that effectively manage numerous segregations tailored for various markets.

Farmers follow simple but effective procedures to achieve agreed standards of quality and purity in their harvested products. For example, in other states GM and non-GM canola has been successfully and productively grown side-by-side without market issues. There has not been a single market or trade incident in over eight years of commercial GM canola production. 6.5 million tonnes of canola have been delivered domestically, and more than 19 million tonnes of canola internationally to end users (i.e. seed crusher / oil or meal buyer, or food / feed manufacturer) in accordance with their requested GM status¹⁹. Further, in Australia, different types of wheat, barley and rice are grown in close proximity to, and channelled to different uses (e.g. bread wheat versus noodle wheat; malt barley versus feed barley and short-grain versus long-grain rice) without adverse effects to those markets.

The South Australian Government can minimise economic, social, and political uncertainty through appropriate regulation that is fair, just, and which improves public confidence. GPSA contends that the moratorium is neither fair or just and simply erodes confidence in our industry.

The Australian grains industry is well respected and trusted by our trading partners for providing high quality grain that meets or exceeds the required specification. GPSA requests that the South Australian Government also recognises this and affords the same level of trust and respect to its farmers through the removal of the moratorium.

Finding 3.4: The persistence of a GM crop moratorium in South Australia, especially in the face of the removal of moratoria a decade ago in neighbouring states, has discouraged both public and private agricultural R&D investments in this state.

The South Australian 2018-2019 budget states that “...the government recognises that South Australia's regions are crucial for the future prosperity of our state”²⁰. However, as pointed out in the Anderson Review, a direct consequence of the moratorium has been the withdrawal of both private and public sector R&D investment and funding for the state's research institutions. Public funds for crop biotechnology research have instead been directed to without a moratorium. Therefore, GPSA contends that the moratorium is at odds with the

¹⁹ Data provided courtesy of the Australian Oilseeds Federation

²⁰ State Budget 2018-2019 Retrieved March 2019 from <https://statebudget.sa.gov.au/>

government's commitment to regional SA and in fact contradicts the government's own commitment to making South Australia an attractive and competitive place to do business.

In our submission to Professor Anderson, GPSA highlighted the cost of the moratorium to research and development in SA (e.g. the lost opportunity with the ACPFG). GPSA also noted that during the time of the SA moratorium, other states in Australia have benefited from increased investment and development that support new technologies in agriculture. Examples were provided in our submission and noted in the Anderson Review (Section 3.3).

It should be noted that many interstate investments in agriculture technology have been located in regional farming communities, providing local jobs and ongoing flow-on community benefits. These investments and opportunities are lost to SA communities due to a restricted pathway to market for outputs of agricultural biotechnology research and development.

Finding 3.5: The adoption of GM crops typically leads to less, not more, use of farm chemicals, and the risk of herbicide resistance in key weeds can be reduced by rotating between different GM crop varieties.

GPSA agrees with the finding that there is great deal of evidence that the adoption of GM herbicide tolerant crops has had a beneficial impact on the environment. The emergence of herbicide tolerant crops (including GM crops) has accelerated and enabled the adoption of conservative tillage (no-till and reduced-till) practices²¹. Such practices enhance soil quality, reduce water run-off, conserve nutrients, increase water infiltration, and contributes to a reduction in greenhouse gases. Further, GM herbicide tolerant crops enable the use of less toxic and more environmentally-friendly chemicals. South Australian farmers require access to all of the technologies available that ensure that our state has sustainable farm businesses.

An international meta-analysis²² suggests that GM crops have contributed significant benefits, including a reduction in pesticide use by 37%, an increase in crop yield by 22% and importantly an increase to farmer profits of more than 68% with the latter having positive flow on effects to local economies and communities.

The most recent analysis by Biden et al. (2018) found that the environmental opportunity costs from delaying the adoption of GM canola in Australia include an additional 6.5 million kilograms of active ingredients applied to canola-growing land; a 14.3% increase in the environmental impact to farmers, consumers and the ecology; an additional 8.7 million litres of diesel fuel burned; and an additional 24.2 million kilograms of greenhouse gas (GHG) and compound emissions released. The economic opportunity costs of the moratorium resulted in foregone output of 1.1 million metric tonnes of canola and a net economic loss to canola farmers of AU\$485.6 million²³.

²¹ Brookes, G. and P. Barfoot (2018b), "Environmental Impacts of Genetically Modified (GM) Crop Use 1996–2016: Impacts on Pesticide Use and Carbon Emissions", *GM Crops and Food* 9(3): 109-39.

²² Klumper, W and Qaim M (2014). A meta-analysis of the impacts of genetically modified crops. *PLoS one*, 9(11), p.e111629

²³ Biden S, Smyth SJ and Hudson D (2018) 'The economic and environmental cost of delayed GM crop adoption: The case of Australia's GM canola moratorium,' *GM Crops & Food*, 9:1, 13-20.

Finding 4.1: The cumulative cost to canola farmers of South Australia’s GM crop moratorium is estimated to be up to \$33 million over 2004-18, and will be at least another \$5 million if the moratorium is kept until 2025 – and possibly much more if Omega 3 canola proves to be higher priced and more profitable than current Roundup Ready canola; and **Finding 4.2:** Gross revenue for the producers of GM canola seed would have been an estimated \$5.4m higher during 2004-18 without the SA crop moratorium, and \$3m higher during 2019-25 if the current technology access fee is unchanged – at least some of which would have been allocated to new crop R&D investments in South Australia.

Section 4 of the Anderson Review outlines an estimate of key direct economic effects of South Australia’s moratorium on the state’s canola production historically to 2018, and of retaining the moratorium to 2025. As with any modelling, it is difficult to estimate such effects without a range of key assumptions that need to be applied, the sensitivity of which can have substantial effects to the final outcomes. This is appropriately demonstrated in the Anderson Review through the provision of several examples to highlight the effect of sensitivities that may influence the model. These include sensitivity of:

- the gross margin differences to price assumptions
- the gross margin differences to yield gap assumptions
- the estimated direct impact to the yield gap assumption
- farm revenue to assumptions about new GM varieties’ prices and production costs and the speed and extent of GM adoption.

The \$33 million cumulative cost estimate over 2004-18 is relatively conservative and should be considered in the context of the small canola crop in South Australia. The estimate is heavily influenced by the sensitivities highlighted and does not consider any indirect benefits.

South Australia’s ability to remain competitive domestically and internationally will be jeopardised for as long as the choice to access GM crops is denied. GPSA would like to add that a 2016 report demonstrated that over the first 20 years of commercial GM crop cultivation in Australia (1996-2015), Australian cotton and canola farmers gained \$1.37 billion in extra income and produced an additional 226,000 tonnes of canola that would otherwise have not been produced if conventional technology alone had been used²⁴. Importantly, South Australian farmers did not benefit from this opportunity. Similarly, Brookes and Barfoot (2017) estimate the average net increase in gross margins for GM canola in Australia in 2015 was US\$38/ha (eq. to AU\$48.50/ha based on a US exchange rate of 0.78)²⁵. Again, a benefit denied to South Australian farmers.

GPSA contends that a direct cumulative cost of \$33 million for a state that now only produces 8.7% of Australia’s canola crop is not insignificant. With no clear pathway to market, developers have limited development of varieties suited to SA farms. Further, where new GM canola varieties have been developed, their benefits are not available to SA farmers (e.g. GM canola hybrids, Omega-3 canola) and other GM crops that may be beneficial to the SA farming

²⁴ Brookes G (2016) ‘Adoption and impact of Genetically Modified Crops in Australia: 20 Years’ Experience’. Report prepared for CropLife Australia Ltd, Canberra, May 2016.

²⁵ Brookes G and Barfoot P (2017) ‘GM crops: Global Socio-economic and Environmental Impacts 1996-2015’. PG Economics Ltd, Dorchester, UK. June 2017.

system, are unavailable (e.g. super high oleic safflower). As such, farmers in other states continue to benefit while SA farmers face a lack of competitiveness and the continued reduction in canola production in SA.

Finding 4.3: The above findings ignore farmers' reduced weed control costs and increased yields for the crop that follows GM canola the next season (worth up to \$0.9 million per year), but they also ignore possible additional segregation costs (up to \$0.3 million per year) if the GM moratorium is dropped; and **Finding 4.4:** Additional farmer benefits from being allowed to grow GM crops, not included in the above calculus, are (a) having more varieties to choose from to best suit specific environments and seasonal weather anomalies, (b) environmental and health benefits from reduced farm chemical applications, and (c) a likely boost to the value of farm land whose productivity and profitability is raised.

The Anderson Review highlights that indirect on-farm and other costs of the SA moratorium are not captured in the estimate of economic effects. These costs are likely to be significant. As noted above, the proportion of SA canola exports has reduced whilst overall Australian canola exports have tripled. SA is not capturing any of this additional value and agrees with the Anderson Review that this is, in part, due to the lack of choice to SA farmers and the reduced level of non-GM canola development suited to SA farming systems.

GPSA contends that there are unlikely to be additional segregation costs should the SA moratorium be removed. SA grain receivals already undertake extensive seed quality testing for the presence of GM and other quality standards in accordance with AOF Oilseed Standards²⁶. GPSA does not expect any additional testing costs associated with segregation would be required.

Finding 4.5: Removing the moratorium on the transport of GM crop products in South Australia would expand the demand for transport services and lead to more interstate shipments of canola.

GPSA supports this finding and notes that the ban does not just affect canola but also other GM products undergoing research and development. The information provided in the Australian Seed Federation (ASF) submission²⁷ provides further detail:

"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

²⁶ Australian Oilseed Federation Quality Standards. Retried March 2019 from http://www.australianoilseeds.com/_data/assets/pdf_file/0014/12056/2018-19_AOF_Standards_V17_-_1_August_2018-Final.pdf

²⁷ [SA GM Food Crop Moratorium Independent Review Submission - Australian Seed Federation](#)

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.”

Importantly, GPSA would like to also highlight commentary made in other industry submissions^{28,29,30,31,32}. The transport ban affects free trade among states and is potentially inconsistent with Section 92 of the Australian Constitution, which mandates that “*trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free*”³³. GPSA calls for an immediate lifting of this ban.

Finding 4.6: The benefits of allowing GM canola production in South Australia would be reduced by less than 2% if the GM moratorium were to be retained for Kangaroo Island.

GPSA has outlined above that the grains industry has a long history of implementing processes and systems that ensure the coexistence of various commodities throughout the supply chain. Similar systems are in place and operating successfully for GM and non-GM canola in other states, underpinned by industry policies, practices and standards^{34,35,36,37,38}. GPSA contends that these policies, practices and standards are sufficient to maintain any competitive advantages offered to individual producers across South Australia. Further, it is noted that the Australian grains industry is well respected and trusted by our trading partners for providing high quality grain that is well under the 5% tolerance required by the Japanese Government for market access.

GPSA notes that KI Pure Grain’s Japanese buyer currently also imports non-GM canola from other Australian states, which also grow GM varieties. Further, it should be noted that canola seed imports to Japan from Canada, where almost all of the canola crop is GM, are consistently around 2 million tonnes per year³⁹.

Targeted consultation with growers on Kangaroo Island is needed in order to provide confidence to their existing commercial arrangements whilst not penalising the rest of the state.

²⁸ [SA GM Food Crop Moratorium Independent Review Submission - Australian Seed Federation](#)

²⁹ [SA GM Food Crop Moratorium Independent Review Submission - Australian Oilseeds Federation](#)

³⁰ [SA GM Food Crop Moratorium Independent Review Submission - AusBiotech](#)

³¹ [SA GM Food Crop Moratorium Independent Review Submission - CropLife Australia](#)

³² [SA GM Food Crop Moratorium Independent Review Submission - Grain Trade Australia](#)

³³ Australian Government. Commonwealth of Australia Constitution Act (The Constitution). Act No. 84 of 1977. ‘Section 92 Trade within the Commonwealth to be free’

³⁴ Towards coexistence Management practices for agricultural production systems, Retrieved in October 2018 from: https://www.abca.com.au/wp-content/uploads/2012/09/AFAA_Coexistence_Bklet_FINAL_Jan06.pdf

³⁵ Principles for process management of grain within the Australian supply chain: A guide for industry in an environment where GM and non-GM grain is marketed, Retrieved October 2018 from:

http://australianoilseeds.com/_data/assets/pdf_file/0020/2981/Principles_for_Process_Management_Final.pdf

³⁶ Site segregation plans, Retrieved October 2018 from <http://www.graincorp.com.au/grains>

³⁷ Australian Oilseed Federation Quality Standards, Technical Information & Typical Analysis, Retrieved October 2018 from: http://www.australianoilseeds.com/_data/assets/pdf_file/0014/12056/2018-19_AOF_Standards_V17_-_1_August_2018-Final.pdf

³⁸ Excellence through stewardship: <https://www.excellencethroughstewardship.org>

³⁹ Information provided by the Canadian Canola Council

Finding 4.7: The benefits of removing the state’s GM moratorium may be far greater than just those from canola as new GM varieties of other crops (and pasture grasses) of relevance to South Australia are developed and approved by the OGTR.

GPSA outlined in its submission several new varieties and crops of relevance to South Australia. The Anderson Review also highlighted opportunities that could be available to the wider agriculture sector if the moratorium were to be removed. GPSA urges the South Australian Government to consider this finding and provide all South Australian farmers the opportunity and choice to access to the latest and best technologies applicable to their industries. This would allow South Australia’s agricultural sector to remain competitive and sustainable despite the impact of as factors such as climate variability on productivity and farm sustainability.

Finding 4.8: New crop breeding techniques such as gene editing offer further benefits to farmers, but some of the new varieties may be regulated as if they are GMOs and thus would be unavailable in South Australia while ever the state’s GM moratorium remains.

Australia maintains one of the most respected regulatory systems for the evaluation and assessment of products developed through new and emerging gene technologies. As regulation is reviewed and shaped to be fit for purpose, South Australian industries and the broader public will remain disadvantaged if a lack of national consistency in legislation is maintained.

Newly developed gene editing technologies are only just being applied for plant improvement purposes and are currently are under review to establish the appropriate regulatory framework. Regulators in South America, Japan and the United States of America have determined that these technologies will be treated in the same manner as any other plant breeding techniques. The technology offers a new generation of consumer centric and farmer centric improvements⁴⁰ that has wider application across the agriculture sector.

In light of these impressive developments, GPSA looks forward to higher rates of genetic gain in the crops grown in the near future but fears that maintaining the moratorium will continue to disadvantage SA farmers and remove grower choice.

⁴⁰ See <http://www.calyxt.com/products/products-in-our-development-pipeline/>