CropLife AUSTRALIA

*Representing **the best** of the plant science industry*

SUBMISSION TO THE REVIEW OF TASMANIA'S GENETICALLY MODIFIED ORGANISMS (GMO) MORATORIUM

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1 INTRODUCTION

CropLife Australia is the national peak industry organisation representing the agricultural chemical and plant biotechnology sector in Australia. CropLife represents the innovators, developers, manufacturers and formulators of crop protection and agricultural biotechnology products. CropLife's membership is made up of both patent-holding and generic, Australian and international, small and large companies. Accordingly, CropLife only advocates for policy positions that deliver whole of sector benefits.

The plant science industry provides products to protect crops against pests, weeds and diseases, as well as developing crop biotechnologies that are key to the nation's agricultural productivity, sustainability and food security. The plant science industry is worth more than $20 billion a year to the Australian economy and directly employs thousands of people across the country. CropLife Australia is a part of the CropLife International Federation of 91 national associations globally. Our focus is, however, specifically on an Australian agricultural sector that is internationally competitive through globally leading productivity and sustainability achieved through access to the technological innovation of the plant science sector.

CropLife welcomes the opportunity to make a submission to the current *Review of Tasmania's genetically modified organisms (GMO) Moratorium*. As outlined at length in the submissions CropLife made in 2013 and 2017, analysing Tasmania's GMO moratorium is critical to ensure the state's farming sector and economy are not unnecessarily burdened. However, such an exercise feels almost futile: the GMO moratorium is still in place despite several reviews clearly showing that it has had no real benefit for the state and has instead proven to be extremely costly. Decisions should be based on science and facts, not on political beliefs or false claims.

Over fifteen years of evidence shows that the GMO moratorium has hurt the state's economy and has failed to give local growers an advantage in domestic and global markets. In fact, Tasmania's agricultural sector has suffered a net loss of $4 million per year due to the moratorium, with little tangible benefit to the state in return[1]. Genetically modified (GM) and non-GM crops have been grown successfully side-by-side in Australia and in 24 countries worldwide for decades, with coexistence being successfully managed. Almost all countries and regions that examined the potential for GMO-free marketing have concluded that any potential benefits did not outweigh the costs.

The GMO moratorium has not protected Tasmania's pristine island image and has proven to be unnecessary, extremely costly and an inhibitor to Tasmania's agricultural growth, delivering no measurable return to the state's economic standing or competitiveness[2]. Furthermore, the moratorium ignores mounting evidence of the environmental benefits of GM crops. Crop biotechnology is an important tool helping farmers become more sustainable by allowing them to produce more while using less natural resources and decreasing their usage of pesticides[3]. Since GM crop cultivation started in 1996, more than 180 million hectares of land have been saved from ploughing and cultivation, leading to improved water storage, limited soil erosion and increased availability of land for other environmental uses[4].

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1 Macquarie Franklin 2012, *Market advantage of Tasmania's GMO-free Status*, Devonport, Tasmania

2 Macquarie Franklin 2012, *Ibid.*

3 ISAAA. 2017. Global Status of Commercialized Biotech/GM Crops 2017: Biotech Crop Adoption Surges as Economic Benefits Accumulate in 22 Years. ISAAA Brief No. 53. ISAAA: Ithaca, NY.

4 ISAAA. 2017. *Ibid.*

The world's population is predicted to increase to 9.7 billion by 2050, requiring an increase in global food production of over 70 per cent. Providing enough food in the context of production constraints, volatile consumption patterns and a changing climate represents an unprecedented scientific, economic and public policy challenge. The situation provides an opportunity for Tasmanian farmers to both assist in the global food security effort and to profit from increased demand for their agricultural products. By adopting innovative farming practices, such as the sustainable and efficient use of GM crops, the Tasmanian farming sector will be able to produce more with less, strengthening both the sector and the regional communities that rely on it.

GM crops currently under development in Australia will help Tasmanian farmers to combat environmental stresses such as drought, acid soils and salinity, caused by non-sustainable farming practices and a changing climate. Other GM traits that are currently investigated by Australian researchers will offer better, more sustainable options for the major individual commodities in Tasmania or bring health benefits to Tasmanian consumers, with fortified cereals, healthier starches and oils modified to be lower in saturated fats and with improved cooking qualities.

CropLife supports the ability of farmers to plant GM crops approved by the Gene Technology Regulator. Regulations should be based on evidence and not on anecdotal claims of benefits. CropLife urges the Tasmanian Government to make decisions based on existing evidence, which clearly shows a net benefit for farmers if the moratorium were to be lifted. CropLife questions why Tasmanian growers are deprived of the benefits of growing GM crops and thus penalised for the sake of promoting a 'clean, green' image, especially when that image has not been translated into any significant advantage.

CropLife submission addresses the following questions:

- What impact has the GMO moratorium had on markets in Tasmania?
- Is it possible for GM and non-GM to coexist and not affect the marketing of Tasmania's products?
- What are the current and upcoming biotechnology opportunities that could benefit Tasmania's primary industries?

2 WHAT IMPACT HAS THE GMO MORATORIUM HAD ON MARKETS IN TASMANIA?

The 2012 Macquarie Franklin report investigated market, economic, social and environmental issues relating to Tasmania's GMO-free status[5]. The report makes it abundantly clear that the GMO moratorium has been a trade and marketing disadvantage for Tasmania's primary industries. The Macquarie Franklin report finds:

- The non-GM canola seed industry is the only industry in Tasmania at present that has achieved tangible (quantifiable) benefits from Tasmania's GMO moratorium. However, this is more than offset by the inability for farmers to grow GM canola.
- The market disadvantage created by Tasmania's GMO-free status is currently producing a net loss of around $4 million per annum at the farm gate. This represents $60 million of lost opportunity over the last fifteen years.
- The ability to supply non-GM canola to Japan has been reported as one of the major benefits of Tasmania's GMO-free status. However, other Australian regions where GM and non-GM crops coexist also supply this niche segment of the market. It was also found that this market was small and sporadic in nature.
- Globally, price premiums for non-GM canola are either small or non-existent. Findings from the recent independent review of the South Australian GM Food Crop Moratorium show that no premium was achieved for grain in South Australia despite it being the only mainland state with a GM crop moratorium[6].
- Less than 5 per cent of the food and agricultural sector use Tasmania's GMO-free status to support their brand image and there is no evidence to suggest they derive a tangible benefit from doing so.
- The current market advantage that can be gained from the specific promotion of Tasmania's GMO-free status is likely to be very limited. Indeed, Tasmanian products are mostly sold within Australia, a market not focused on GMO issues.

The consultant's report also assessed the impact of the Tasmanian moratorium against the four goals of Tasmania's Economic Development Plan. Maintaining the GMO moratorium in Tasmania is inconsistent with both the state's clean and green image, and economic development goals. The authors find:

Goal 1 - To support and grow businesses in Tasmania

Tasmania's GMO-free status has had little or no positive impact on the growth of businesses in Tasmania to date. While there are several companies that have increased business in Tasmania utilising non-GM product marketing, this is not reliant on, or as a result of the moratorium itself but rather individual production and marketing measures. The loss to other companies from not having access to GM canola seed has had a greater negative impact on business in Tasmania beyond even any nominal benefit that anti-GM advocates proclaim the moratorium provides.

Goal 2 - To maximise Tasmania's economic potential in key sectors

The sectors of the food industry in Tasmania currently identified for significant growth are dairy, salmon and soft fruit. None of these derive benefit from Tasmania's GMO-free status. The competitiveness of Tasmanian milk production may be negatively impacted by Tasmanian dairy farmers' inability to grow improved pasture species or grains that are currently being researched and developed in Australia. The capacity for industry to meet forecast milk demand would therefore be reduced.

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5 Macquarie Franklin 2012, Op. cit.

6 Anderson, K. 2019. Independent Review of the South Australian GM Food Crop Moratorium. Report to the South Australia Minister for Primary Industries and Regional Development. Adelaide, South Australia.

Goal 3 - To improve the social and environmental sustainability of the economy

The GMO moratorium has not had any significant positive impact on agriculture in Tasmania to date, so it has had little ability to improve either social or environmental sustainability of the economy.

Goal 4 - To support and grow communities within regions

Agriculture and food processing are two of the largest employment sectors in rural and regional communities across Tasmania. Growth in these sectors contributes greatly to growth in regional communities. The GMO moratorium has not impacted greatly in any positive way on communities in regional Tasmania to date. Eighty percent of Tasmanian food products are sold within Australia. As this market is not focused on GMO issues, an increased marketing of the GMO moratorium will not achieve growth in the agricultural and food sectors in these communities and regions.

The Macquarie Franklin findings unequivocally demonstrate that having a GMO moratorium is completely inappropriate for Tasmania. The moratorium has time and time again proven to be a trade and marketing disadvantage, providing little to no benefits to farmers and limiting their options.

Furthermore, the GMO moratorium has also significantly stifled Tasmanian research and development into agricultural biotechnology. In fact, Tasmania is the only state in all Australia in which no GM crop field trials are undertaken. Tasmanian researchers have expressed their concerns regarding the GMO moratorium, highlighting the importance of investing in biotechnologies to save farmers money and to prevent the collapse of farms. Due to the GMO moratorium, investors in agricultural biotechnology research and development do not even consider Tasmania as a potential player in the field, focusing instead on the progressive regulatory environments of mainland Australia.

Tasmania's AgriVision 2050 has set strong targets for growing the value of its agricultural sector over the next thirty years[7]. Unfortunately, there will be no vision in AgriVision as long as the GMO moratorium is still in place. The three core components of Tasmania's Sustainable Agri-Food Plan are "Grow, Make, Protect". Repealing the GMO moratorium will help achieve all three components by giving farmers access to better crops and promoting more sustainable farming practices leading to reduced CO_2 emissions and improved biodiversity.

7 AgriGrowth Tasmania 2016. Tasmania's Sustainable Agri-Food Plan 2016-2018. Hobart, Tasmania.

3 IS IT POSSIBLE FOR GM AND NON-GM CROPS TO COEXIST AND NOT AFFECT THE MARKETING OF TASMANIA'S PRODUCTS?

First and foremost, it is crucial to recognise that all GMOs approved by the Gene Technology Regulator for commercial release in Australia are as safe for human health and the environment as their conventional (non-GM) counterparts.

Globally, over 1 billion acres of GM crops have been cultivated since 1996 and over 1 trillion meals containing GM food ingredients have been consumed. There have been no unexpected effects on ecosystems or a single documented adverse effect on human or animal health. Cultivation of GM crops has, in fact, proven to be beneficial to the environment as it has led to more sustainable farming practices. The development, planting and consumption of an approved GM crop is safe.

Coexistence is the practice of growing crops with different quality characteristics or intended for different markets in the same vicinity without becoming comingled and thereby possibly compromising the economic value of both. Coexistence is based on the premise that all famers should be free to cultivate the crops of their choice using the production system they prefer, be it using crop biotechnology, conventional or organic methods.

Coexistence is not about environmental or health risks as it refers only to the use of crop biotechnologies or crop protection products that have been approved as safe for the environment and human health by Australian Government regulators. It is important to remember that industry routinely segregates and supplies to the market a wide variety of differentiated commodities and products.

Coexistence of various production methods is not a new concept to the agricultural community. Famers have practiced coexistence for generations to meet customer demands for different types of products. Breeders and farmers are accustomed to breeding and producing different crops alongside each other, such as bread and noodle wheat, or feed and malting barley. They are also accustomed to producing certified seed to meet defined purity standards.

Varietal segregation has been a normal part of Australian bulk grain transport and storage for decades[8]. Years of experience have demonstrated that coexistence of a wide range of production methods is not a problem, provided technical and procedural guidelines are carefully followed and cooperation between neighbouring farms is encouraged. This applies equally to the use of modern crop protection and crop biotechnology products in farming systems.

For example, prior to the introduction of GM canola, industry was already segregating commodity canola from high oleic low linolenic (HOLL) canola or high erucic acid canola[9], feed barley from malting barley, and many different grades of wheat. Introducing GM canola varieties into the Australian seed and grain supply chain did not represent significant difficulties for industry, as it was purely a case of 'business as usual', with simply an additional segregation and sampling and testing protocol added at the grain receival site.

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8 White, P., Carter, C. and Kingwell, R. 2018. Australia's Grain Supply Chains: Costs, Risks and Opportunities. Report produced for the Australian Export grain Innovation Centre. South Perth, Western Australia.

9 High erucic acid varieties are grown for industry purposes to produce slip agents and lubricants.

Sampling and testing can be used to validate coexistence strategies and confirm industry has maintained the integrity of the products they supply to the market. Industry segregates and supplies products to meet customer preferences and carries out sampling and testing both to verify that their systems are working properly and to provide customers with the assurance that products meet their specifications.

All agricultural production systems should have an equal opportunity to contribute to the food production system under free market conditions. Preference for one production system over another should not be the result of artificial, discriminatory and impractical public policy decisions made by state governments as is currently the case in Tasmania with the ban on commercial release of GMOs to the environment.

Being a 'clean and green' economy should not mean disregarding the importance of variety in farming systems, environments and crops: a 'one-size-fits-all' approach is not logical, let alone effective. Tasmania needs to modernise its views when it comes to biotechnology to allow farmers to access innovative varieties that can contribute to a cleaner and greener economy. Tools are available to ensure coexistence of GM, non-GM and organic crop productions, and have been tested for decades all around Australia. It is time Tasmania recognises that the Australian grain industry has put in place robust, safe and sophisticated methods to manage GM and non-GM supply chains.

The 'Market Choice Framework' introduced in 2007 by the Australian grain industry to manage the commercial introduction and coexistence of GM canola in the Australian seed and grain supply chain could be applied to manage the introduction of commercial GMOs in Tasmania. With more than ten years' experience, it provides the necessary certainty and confidence to supply chain participants, consumers and the Tasmanian Government that GM products could be managed alongside non-GM and organic products to meet market and customer requirements.

4 WHAT ARE THE CURRENT AND UPCOMING BIOTECHNOLOGY OPPORTUNITIES THAT COULD BENEFIT TASMANIA'S PRIMARY INDUSTRIES?

As a direct result of the GMO moratorium, Tasmania has missed out on more than fifteen years of opportunity to maximise the benefits of agricultural innovations in the state.

GM crops have been widely grown in Australia and around the world for 24 years[10]. During this period, the technology has provided significant economic, agronomic and environmental benefits to Australian farmers and citizens, excluding those in Tasmania.

Australian cotton and canola farmers have gained $1.37 billion worth of extra income and produced an additional 226,000 tonnes of canola that would otherwise not have been produced if conventional technology had been used. Tasmanian farmers have missed out on their share of these economic and agronomic benefits[11].

This technology has enabled Australian farmers to reduce their use of insecticides and herbicides by 22 million kilograms of active ingredient, equal to a 26 per cent improvement in the environmental impact associated with pesticide use in these two crops. Tasmanian farmers have missed out on these environmental benefits[12].

Improving the sustainable use of pesticides on GM crops has also resulted in a saving of nearly 27 million litres of fuel use and 71.5 million kilograms less carbon dioxide being released in the atmosphere. Tasmanian farmers have also been denied these environmental benefits[13].

The most appropriate current GM crop suited to Tasmanian farming systems is GM herbicide tolerant canola. Tasmanian growers are already growing non-GM herbicide tolerant canola varieties (such as Triazine Tolerant and Clearfield) and the addition of GM varieties will simply be an extra tool in their weed control toolbox. Australia's Gene Technology Regulator has concluded that approved GM herbicide tolerant canola varieties pose no greater risks to human health or the environment than their conventionally bred herbicide tolerant counterparts.

The agronomic benefits of GM (when compared to non-GM) herbicide tolerant canola include increasing the options for in-crop weed control, allowing herbicide rotations that address the risk of herbicide resistant weeds developing and increasing the yield in subsequent cereal crops, which could be adversely affected by herbicide carry over from the herbicides used in non-GM herbicide tolerant crops (triazines and imidazolinones).

The control of insect pests and weeds is a significant cost for Tasmanian farmers. While insect resistant GM cotton is not suitable for Tasmania, GM herbicide tolerant canola is a new tool that Tasmanian farmers could use as part of an Integrated Weed Management program to improve the sustainability of weed control options in Tasmania.

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10 Brookes G (2016) Adoption and Impact of GM crops in Australia: 20 years' experience. Report prepared for CropLife Australia Ltd, Canberra, Australian Capital Territory.

11 Brookes G (2016) *Ibid.*

12 Brookes G (2016) *Ibid.*

13 Brookes G (2016) *Ibid.*

GM crops currently under research and development in Australia will help Tasmanian farmers address the unprecedented challenges they are facing in a changing climate. GM traits currently investigated at the national level (but unfortunately not on Tasmanian soil, due to the GMO moratorium) will be crucial tools for farmers to combat drought, soil acidity and/or salinity, as well as emergent diseases.

Dairy, cattle and calves, and potatoes were the most important individual commodities in Tasmania in 2016-17[14]. Current field trials approved by the OGTR include GM ryegrass, providing more energy and better nutrition to grazing livestock, or potato plants resistant to viruses and fungus. As long as the GMO moratorium remains in place, Tasmanian farmers will miss out on these innovations. There is also considerable Australian research into GM traits that will bring health benefits to Tasmanian consumers, such as cereals with increased iron levels, healthier starches or cooking oils modified to be lower in saturated fats and with improved cooking qualities. Once again, as long as the GMO moratorium remains in place, Tasmanian consumers, and Australian consumers who buy Tasmanian products, will miss out on these benefits.

[14] ABARES 2018. Tasmania Agricultural Production Profile. http://www.agriculture.gov.au/abares/research-topics/aboutmyregion/tas#references. Accessed 08 April 2019.

5 CONCLUSION

Maintaining the productivity, profitability and innovation of agricultural production systems in Tasmania will not be achieved by limiting the options for farmers to manage their businesses. Each individual farm faces specific challenges in terms of climate, soil type, farming system, demography and economy. These circumstances all have an impact upon the choices available to farmers to manage their farms. For example, the challenges faced by a wine grape grower in the Tamar Valley will be different to a broadacre grains farmer in another part of the state.

There is a wide variety of farming systems and circumstances throughout Tasmania, and a 'one-size-fits-all' approach cannot empower farmers to make management choices that best suit their needs and circumstances. Some farmers might want to adopt organic production systems to leverage high-value specialty markets, other farmers might want to adopt innovative agricultural chemical products or genetically modified crops for agronomic and environmental purposes. These different farming systems are two examples of many. It is every farmer's right to choose what they want to grow on their own land. Coexistence of farming systems is the key. The recognition that these systems can indeed coexist is crucial.

Ultimately, it is farmers that best understand the pressures faced by a farm. To support productive, profitable and innovative agriculture, the Tasmanian Government must allow farmers to make decisions in the best interests of their own businesses. This will mean allowing farmers to adopt any one of a range of farming systems, or a combination of them.

Over more than fifteen years, there has been no evidence that the Tasmanian GMO moratorium has caused anything but a trade and marketing disadvantage to the state. Tasmania's primary production sector is being significantly disadvantaged through the denial of access to the newest and most innovative agricultural technologies. These technologies, that could help the profitability of Tasmanian farmers, will also allow them to farm more sustainably, which in turn would only enhance Tasmania's 'clean and green' marketing profile.

The evidence of the benefit of GM crops is both overwhelming and indisputable. It demonstrates that GM crops could offer all the agronomic, economic, environmental, social, trade and marketing benefits that are sought by Tasmanian primary producers.

CropLife strongly recommends that the Tasmanian *Genetically Modified Organisms Control Act 2004* be repealed as a matter of urgency. Over fifteen years of evidence shows that the GMO moratorium has only managed to hurt the state's economy and has failed to give local growers a demonstrable advantage in domestic and global markets. Furthermore, there is no evidence to suggest that this ongoing economic loss is likely to change were the GMO moratorium to be maintained indefinitely.

It is time for the Tasmanian Government to put science first and recognise the unequivocal benefits that GM crops are bringing to farmers in New South Wales, Queensland, Victoria and Western Australia, benefits currently denied to Tasmanian growers. The GMO moratorium is not supported by science-based facts and evidence, nor by analysis of trade and market accessibility for Tasmanian products.