

## **Submission to the Review of Tasmania's genetically modified organisms (GMO) moratorium, March 2019**

### **Introduction**

Many thanks for the opportunity to comment on the Review of Tasmania's genetically modified organisms (GMO) Moratorium issues paper.

Friends of the Earth supports the indefinite extension of the moratorium on GMOs in Tasmania, due to the risks posed to our environment, human and animal health, and our economy. In order to protect and properly capitalise on Tasmania's GM-free status the moratorium should be extended to imported animal feed. Exemptions should not be made for pharmaceutical crops or open air field trials due to contamination risks.

Tasmania's GM free status currently allows Tasmania to sell into premium markets in the USA and Asia – but this moratorium is currently under threat. The day before the Federal election was called, the Federal Government announced the deregulation of a range of new genetic modification (GM) techniques referred to as site directed nucleases 1 (SDN-1) in animals, plants and microbes.<sup>1</sup> Since the Tasmanian Genetically Modified Organisms Control Act 2004 uses the definition of genetically modified organism defined in the Federal Gene Technology Act 2000 and Gene Technology Regulations 2001, these Federal level changes will potentially undermine Tasmania's GMO Moratorium. Tasmania's definition of GMO will be at odds with those of key international trading partners, raising the risk of market rejection.

The Federal Government announcement makes Australia the first country in the world to deregulate the use of these GM techniques in animals. SDN-1 methods have already been used to produce super muscled pigs, sheep and cattle<sup>2</sup> and can now be used in other livestock with no regulation. This will obviously have major consequences for global market perceptions of Australian produce. The majority of consumers globally are extremely uncomfortable with the idea of genetically modifying animals for food.<sup>3</sup>

The deregulation of these techniques could have dramatic impacts on food exports. The European Union's top court has ruled that these techniques pose similar risks to older GM techniques and need to be assessed for safety in the same way.<sup>4</sup> Since Europe has declared these techniques GM, traceability will be mandatory - as will testing protocols to detect the GMO. With no regulation, traceability cannot be assured - and without traceability Europe's zero tolerance policy for unapproved GMOs could see a disruption or halt to their food imports from Australia. As Markos Kyprianou, the EU Commissioner for Health and Consumer Protection has stated:

*"There is no flexibility for unauthorised GMOs - these cannot enter the EU food and feed chain under any circumstances."*<sup>5</sup>

A survey of countries conducted by the Food and Agriculture Organisation (FAO) found that 73% of them have a zero tolerance for unapproved GM varieties.<sup>6</sup> The FAO found that between 2002 and 2012 there had been 200 cases of trade disruptions due to the presence of unapproved GMOs in shipments of various products. The majority of the GM contamination events happened between 2009-2012, indicating increasing trade problems.

China has a similar zero tolerance policy for the presence of unapproved GMOs. And global non-GM and organic certifiers such as the Non-GMO Project in the US, and VLOG and IFOAM in Europe, have confirmed that they will treat these techniques and their products as GM.<sup>7</sup>

The numerous examples of costly market rejection and disruption due to the presence of unapproved GMOs include:

#### *Triffid flax*

When an unlicensed GM flax variety was found in a shipment to Japan in 2009, 35 countries closed their borders to Canadian flax exports, including 28 in the EU which accounts for 60 per cent of Canada's flax export market. A University of Saskatchewan study estimated the cost to the Canadian flax industry in the first year alone to be \$29 million.<sup>8</sup>

#### *Viptera corn*

In 2015, the Swiss company Syngenta released a GM corn variety to market before it had been approved in key export markets, resulting in a Chinese import ban. The National Grain and Feed Association calculated the loss to US farmers to be nearly US\$3 billion.<sup>9</sup>

#### *StarLink corn*

This was a massive supply chain contamination incident in 2000 involving a GM corn used for animal feed but not approved for human food use. It resulted in the largest food product recall in history and is estimated to have cost US companies US\$1 billion.<sup>10</sup>

#### *LibertyLink rice*

In 2006, an unauthorised variety of GM rice was detected in US exports. According to the USA Rice Federation, "a robust long grain rice export market nearly vanished overnight".<sup>11</sup> The total cost to the US rice industry of the LibertyLink 601 contamination is estimated at around US\$1 billion.

In recognition of these potential market impacts, the New Zealand Government has announced that it will regulate organisms produced using CRISPR and other GM techniques as GMOs. On making the announcement New Zealand's Environment Minister Dr Nick Smith stated:

*"The rationale for our cautious approach is that New Zealand is an exporter of billions of dollars of food products and we need to be mindful of market perceptions as well as the science. We will continue to monitor global rules around the regulation of GMOs and adapt our system over time in line with international developments."*<sup>12</sup>

**To ensure the integrity of Tasmania's GM moratorium, we urge the Tasmanian Government to change the definition of 'genetically modified organism' in the Genetically Modified Organisms Control Act 2004 to explicitly include all organisms modified using SDN-1 methods.**

In response to the Terms of Reference, we provide the following comments:

**a. The potential market advantages and disadvantages of allowing or not allowing the use of gene technology in Tasmanian primary industries, including food and non-food sectors**

Friends of the Earth believe that Tasmania's GMO moratorium is appropriate and robust so should be retained. As this submission shows, the introduction of GM crops would have negative economic impacts for the state, damaging export revenues and hurting the livelihoods of farmers.

The Genetically Modified Organisms Control Act 2004 (Tas) and GMO moratorium were introduced because of concerns within industry, the farming sector and regional communities about the market impacts of GM crops. These concerns included potential loss of exports and domestic sales, liability and insurance issues, and problems with segregation and cross-contamination.

In the fifteen years since the moratorium was introduced these concerns have proven to be justified. GM contamination scandals and regulatory failures have plagued countries that have adopted GM crops. These scandals have resulted in hundreds of millions of dollars of lost export revenue and costly litigation.

A representative nationwide survey of Australians conducted by Swinburne University in 2017 found that Australians are not comfortable with genetically modified (GM) foods. They are also significantly less comfortable with genetically modified animals for food than with genetically modified plants for food.<sup>13</sup>

Major Australian food processors have responded to consumer demand and adopted non-GM supply chains – including the major supermarket chain Coles:

*In recognition of our customers' strong preference for non-GM foods, all Coles Housebrand food products (over 2700 products) are formulated using non-GM ingredients.<sup>14</sup>*

and Woolworths:

*Woolworths own brand products do not use genetically modified (GM) ingredients. Our requirements on GM ingredients are articulated to our own brand suppliers in our Brand Guidelines and Woolworths Quality Assurance (WQA) Standard.<sup>15</sup>*

Similar consumer attitudes to GM crops exist in our key export markets, such as Europe and Japan. Even in the US, which grows around 41 per cent of the GM crops in the world, there is still strong community opposition to GM foods. In the absence of effective labelling laws, non-GMO labelled products are now among the fastest growing markets in the US food industry.

Tasmania is currently in the enviable position of being the only Australian state that can claim to be genuinely GM free. Although South Australia also has a GMO moratorium, GM trials are still taking place in the state. South Australia also shares a land border with Victoria, making the risk of GM contamination a very real one.

A wide range of Tasmanian industries rely on the state's clean, green image to market their products. The lifting of the GMO moratorium would jeopardise this image and the economic prospects of these companies.

The moratorium has provided many benefits to industry since its implementation, including:

- price premiums and preferential market access;
- lower production costs due to the absence of costly segregation and identity preservation processes;
- no costly recalls caused by unwanted GM contamination – such as recently happened with wheat products in the US;
- a reputation among domestic and export markets for high quality non-GM products.

Tasmanian producers are already benefitting from the state's GM free status, both in terms of access to markets and premium prices for GM free products. In light of these demonstrated benefits, any proposal to become a GM state and lose existing market advantages for unquantified, marginal and speculative benefits seems downright perverse.

Large beef exporters such as Greenhams and Tasmania Feedlot enjoy market access in countries such as Japan and Korea because of Tasmania's GM free status.

Tasmanian fruit growers also enjoy access to premium markets throughout Asia because of Tasmania's GM free status and use Tasmania's GM free status to help market their products.<sup>16</sup>

Tasmanian honey producers are another of the key beneficiaries of Tasmania's GM crop moratorium. Tasmanian honey attracts premiums of at least 40 per cent over mainland honey because of Tasmania's clean green reputation. The Tasmanian Beekeepers Association president Lindsay Bourke has warned that international honey markets will be lost if the GM moratorium is lifted. Under European labelling laws, any honey containing GM pollen must be labelled and polling consistently shows that European consumers don't want to eat GM food.<sup>17</sup>

The two main industries calling for Tasmania's GM moratorium to be lifted are the poppy and dairy industries. Both argue that they may want to introduce GM crops to increase productivity, at some unspecified time in the future. However, there are currently no commercially available GM poppies or pasture crops and no evidence of productivity increases associated with GM varieties.

Moreover, GM poppies could currently be grown, as Tasmania's current GM moratorium has an exemption for GM pharmaceutical crops. However, no GM poppy varieties are commercially available. Against the demonstrated benefits of remaining GM free, calls from the poppy and dairy industries to lift the moratorium, for the remote possibility of some future benefits from GM products that are not yet commercially available, are reckless at best.

### **GM canola is the only commercially available GM crop that Tasmania could currently grow**

The only GM crop that could currently be grown in Tasmania if the GM moratorium were lifted is GM canola, the economics of which simply don't stack up. In 2012, a Birchip Cropping Group analysis found GM canola in Western Victoria was \$150/hectare less

profitable than non-GM varieties. This was due to the technology user fee; the increased cost of seeds and herbicides; and lower market prices for GM canola. GM canola typically sells for \$30 to \$70 a tonne less than non-GM canola.<sup>18</sup>

The biotechnology industry lobby group CropLife claims “Tasmania’s agricultural sector has suffered a net loss of \$4 million per year due to a moratorium on genetically modified organisms (GMOs).”<sup>19</sup> Even if this highly questionable figure is to be believed, this still represents only 0.15 per cent of the annual \$2.7 billion Tasmanian food and agriculture sector turnover.<sup>20</sup>

As the Chair of the Red Meat Industry Council Brett Hall states:

*“The amount of potential risk involved in growing this GM crop for such a small gain does not stand the test of being an option economically, environmentally or socially.”<sup>21</sup>*

Tasmanian Agricultural Producers, which handles the majority of Tasmanian-grown grain, is currently selling non-GM canola to Japan for a premium. The buyers originally bought non-GM canola from Western Australia, but switched their supply chain to Tasmania due to contamination concerns once the GM canola ban in WA was lifted. If Tasmania introduces GM canola it also risks losing this premium market.

## **b. Domestic and international gene technology policy relevant to primary industries**

### **1. Examples of innovative GMO policy and regulation from other jurisdictions that Tasmania could adopt or learn from?**

The European Union’s top court has ruled that new GM techniques such as CRISPR pose similar risks to older GM techniques and need to be assessed for safety in the same way.<sup>22</sup> The New Zealand Government has also announced that it will regulate organisms produced using these new techniques as genetically modified organisms (GMOs).<sup>23</sup>

Norway applies the precautionary principle when vetting GMOs and in addition requires any user or importer of a GMO to show that the use is ethically and socially justifiable, requiring proof both that the GMO is not harmful and that its use will benefit society.<sup>24</sup> Notably, no GMOs have been approved in Norway under this regulatory regime.

## **c. Research and development relevant to the use of gene technology in primary industries**

The Tasmanian Government’s GMO Annual Environmental Scan 2017 states that NBT’s [New Breeding Techniques i.e. gene editing] offer “the promise of a clear regulatory path and acceptance of its products among both farmers and consumers in target markets.”<sup>25</sup> But this statement is demonstrably false, considering the European Court of Justice decision and statements from non-GM certifiers such as the Non-GMO Project and IFOAM. There is no clear pathway to market for the products of NBTs and they must be included in Tasmania’s GMO moratorium.

**1. Are there new gene technologies that would provide positive benefits to the State as whole? What are they and what would the benefits be?**

Other non-GM biotechnology techniques such as marker-assisted selection allow the development of desirable traits such as drought tolerant, salt tolerant and nutritionally enhanced crops without the risk of market rejection associated with GM crops. For example, Victorian scientists have developed non-GM drought tolerant canola using marker-assisted selection.<sup>26</sup>

**2. What impact has the moratorium had on the research and development of new products or markets?**

Large beef exporters such as Greenhams and Tasmania Feedlot enjoy market access in countries such as Japan and Korea because of Tasmania's GM free status. Thanks to Tassie's GM-free status, Cape Grim Beef was also the first Australian brand to receive Non-GMO Project certification in the US.<sup>27</sup>

Tasmanian fruit growers also enjoy access to premium markets throughout Asia because of Tasmania's GM free status and use Tasmania's GM free status to market their products.<sup>28</sup>

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<sup>1</sup> Updated Gene Technology Regulations Benefit Cancer Patients and Medical Research, <http://www.health.gov.au/internet/ministers/publishing.nsf/Content/health-mediarel-yr2019-mckenzie026.htm>

<sup>2</sup> Cyranoski, C. (2015) Super-muscly pigs created by small genetic tweak, *Nature*, **523**: 13–14, <https://www.nature.com/news/super-muscly-pigs-created-by-small-genetic-tweak-1.17874>; Proudfoot, C. et al. (2015) Genome edited sheep and cattle, *Transgenic Research*, **24**(1): 147–153, <https://link.springer.com/article/10.1007%2Fs11248-014-9832-x>

<sup>3</sup> Bruce, G. & Critchley, C. (2015) The Swinburne National Technology and Society Monitor: 2015 Monitor; Frewer, L.J. (2013) Genetically modified animals from life-science, socio-economic and ethical perspectives: examining issues in an EU policy context, *New Biotechnology*, **30**(5): 447-460, <https://www.sciencedirect.com/science/article/pii/S1871678413000435>

<sup>4</sup> Court of Justice of the European Union (2018) *Press Release: Organisms obtained by mutagenesis are GMOs and are, in principle, subject to the obligations laid down by the GMO Directive*, <https://curia.europa.eu/jcms/upload/docs/application/pdf/2018-07/cp180111en.pdf>

<sup>5</sup> European Commission (2006) GM FOODS - Commission requires certification of US rice exports to stop unauthorised GMO entering the EU: Press Release (IP/06/1120), 23 August 2006, <http://www.reading.ac.uk/foodlaw/news/eu-06080.htm>

<sup>6</sup> FAO (2014) The results of the FAO survey on low levels of genetically modified (GM) crops in international food and feed trade [http://www.fao.org/fileadmin/user\\_upload/agns/topics/LLP/AGD803\\_4\\_Final\\_En.pdf](http://www.fao.org/fileadmin/user_upload/agns/topics/LLP/AGD803_4_Final_En.pdf)

<sup>7</sup> *Ibid.*

<sup>8</sup> Pilger, G. (2015) The great threat of 2015 facing farmers, *Country Guide*, <http://www.country-guide.ca/2015/11/17/the-great-threat-of-2015-facing-farmers/47629/>; Young, L. et al. (2015) Genetics, structure, and prevalence of FP967 (CDC Triffid) T-DNA in flax, *SpringerPlus* **4**:146, <http://link.springer.com/content/pdf/10.1186%2Fs40064-015-0923-9.pdf>

<sup>9</sup> RT (2015) *Food fight: Indiana farmers sue seed company over millions in losses*, <https://www.rt.com/usa/323493-Corn-farmers-sue-seed-corp/>

<sup>10</sup> Macilwain C. (2005). US launches probe into sales of unapproved corn. *Nature*, 434:423; CBS (2001) *The Starlink Nightmare*, 18/5/01, <http://www.cbsnews.com/news/the-starlink-nightmare/>

<sup>11</sup> USA Rice Federation (2013) Submission to the USTR on the Transatlantic Trade and Investment Partnership.

<sup>12</sup> Smith, N. (2016). GMO regulations clarified, 5/4/16, <https://www.beehive.govt.nz/release/gmo-regulations-clarified-0>

<sup>13</sup> Gordana, B. & Critchley, C. (2017) Swinburne National Technology and Society Monitor 2017 [https://researchbank.swinburne.edu.au/file/4d553f11-b48c-4032-9505-cd0da8eef9d/1/2017-swinburne\\_nts\\_monitor.pdf](https://researchbank.swinburne.edu.au/file/4d553f11-b48c-4032-9505-cd0da8eef9d/1/2017-swinburne_nts_monitor.pdf)

<sup>14</sup> Coles (2009) Coles Community and Sustainability Report 2009, [http://www.coles.com.au/Portals/0/content/swf/about\\_coles/CommSusRpt/Report.pdf](http://www.coles.com.au/Portals/0/content/swf/about_coles/CommSusRpt/Report.pdf)

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- <sup>15</sup> Woolworths: Genetically Modified (GM) Foods, [http://www.woolworthslimited.com.au/page/A\\_Trusted\\_Company/Responsible\\_Sourcing/Genetically\\_Modified\\_GM\\_Foods/](http://www.woolworthslimited.com.au/page/A_Trusted_Company/Responsible_Sourcing/Genetically_Modified_GM_Foods/)
- <sup>16</sup> e.g. Aussie Apples: Growing Regions - Tasmania <http://www.aussieapples.com.au/growing-regions/tasmania.aspx>
- <sup>17</sup> Hanson, R. (2013) GMO fears for honey, *Sunday Tasmanian*, 6/10/13 p.21.
- <sup>18</sup> *Australian Farm Journal*, April 1, 2012, pp. 20-21.
- <sup>19</sup> CropLife (2013) SUBMISSION TO REVIEW OF THE MORATORIUM ON GMOs TASMANIA, <https://www.croplife.org.au/wp-content/uploads/2013/10/CropLife-Submission-Tasmania-GMO-moratorium-Web.pdf>
- <sup>20</sup> Hall, B. (2013) Saturday Soapbox: There's no room for GMOs in the food bowl, *The Mercury*, 19/10/13, <https://www.themercury.com.au/news/opinion/saturday-soapbox-theres-no-room-for-gmos-in-the-food-bowl/news-story/31908609def68ad6d3b91204b70b6426>
- <sup>21</sup> *Ibid.*
- <sup>22</sup> Court of Justice of the European Union (2018) *Press Release: Organisms obtained by mutagenesis are GMOs and are, in principle, subject to the obligations laid down by the GMO Directive*, <https://curia.europa.eu/jcms/upload/docs/application/pdf/2018-07/cp180111en.pdf>
- <sup>23</sup> Smith, N. (2016). GMO regulations clarified, 5/4/16, <https://www.beehive.govt.nz/release/gmo-regulations-clarified-0>
- <sup>24</sup> Library of Congress: Restrictions on Genetically Modified Organisms: Norway, [http://www.loc.gov/law/help/restrictions-on-gmos/norway.php#\\_ftn2](http://www.loc.gov/law/help/restrictions-on-gmos/norway.php#_ftn2)
- <sup>25</sup> p. 7
- <sup>26</sup> Victorian Government (2006) Media Release: Victorian scientist develop drought tolerant canola
- <sup>27</sup> Greenham (2014) Cape Grim gets the Non-GMO Project tick, *Meatworks Messenger*, December 2014, <https://www.greenham.com.au/view/1065>
- <sup>28</sup> e.g. Aussie Apples: Growing Regions - Tasmania <http://www.aussieapples.com.au/growing-regions/tasmania.aspx>