

AGRIBUSINESS TASMANIA

Hon Guy Barnett
Minister for Primary Industries
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via email: gmomoratorium.review@dpiwwe.tas.gov.au

Dear Minister

I appreciate the opportunity to provide comment on the review of the moratorium on genetically modified organisms in Tasmania.

Please find attached my submission.

Arguments supporting a continuation of the moratorium are, in the main, based on these premises:

- Farmers achieve brand advantages and price premiums;
- People don't like GM products; and
- It's not natural.

Unpacking these arguments shows that they don't stand up to scrutiny.

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.

Tasmanian farmers should have a right to choose the best products and technologies available to maximise their productivity and competitiveness.

However, if the government decides to intervene in market processes, it must be prepared to put its money where its mouth is – and invest in activities that will go some way to redressing these constraints on trade.

The Tasmanian Government has set an ambitious goal to increase the annual value of the agricultural sector to \$10 billion by 2050. To reach \$10 billion, the government recognises that the sector will need to grow at more than double the growth rate experienced over the past 20 years.

If this potential is to be reached, the state government must commit to support efforts to enable the Tasmanian agricultural sector to maximise outcomes in terms of production diversity, profitability and competitiveness.

Of course, should further information be required, please don't hesitate to contact me.

Yours sincerely

Why is there a moratorium?

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Farmers achieve brand advantages and price premiums

We've heard a lot about our clean green brand, and about the benefits a ban on GM products brings. We're told that our farmers get a price premium for their products on the basis of the fact that customers value our GM free status.

If, as some would have us believe, there is a price premium already being paid for the fact that we are GMO-free, where is the proof of that claim?

The state government has promoted a number of marketing initiatives to enhance the perception that the Tasmanian food brand represents premium quality, food safety and sustainability. At the time the moratorium was introduced, it also committed to implement a major promotions campaign to support this decision in the market place. This did not happen. As a result, there is little hard evidence of any real market advantage (as opposed to market access) in remaining GMO free; and much of the 'evidence' that does exist appears generally subjective. Furthermore, if there were to be any premiums, these would be shared by the producers with processors or agents.

Independent research undertaken on behalf of the Tasmanian government in 2015 when the moratorium was last reviewed clearly concluded that, while there were some small market segments which may have achieved some minor price advantage, these were the exception rather than the rule. In fact, the report suggested that 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.

This research mirrors the results of a study in South Australia, which is the only other state which regulates the cultivation of genetically modified (GM) crops. A recent independent review undertaken for that state government evaluated the benefits and costs of the GM. Apart from one specific exception, related to Kangaroo Island, the report found there was no evidence to justify a view that any current price premium or market access for non-GM South Australian crops would be diminished if GM food crops were allowed to be grown in the state on condition of careful segregation. It concluded that, on the basis of the evidence it examined, there was little if any evidence of marketing and trade advantages of staying GM-free and suggests that the state would be a net beneficiary if the moratorium was removed.

The Productivity Commission's *Review of Regulation of Australian Agriculture* came to the same conclusion in 2016 and recommended that all states and territories should also repeal the legislation that imposes or gives them powers to impose moratoria on GMOs by 2018. The 2015 Harper *Competition Policy Review* also cited GMO moratoriums as a significant example of a regulatory restriction on competition.

The vast bulk of product grown by our farmers is in commodity products that are shipped in bulk to markets across the country and the world. They are not branded as Tasmanian products. Often, they are mixed with product from other suppliers and could not be branded even if we wanted to go down that path.

Our participation in these bulk markets is based on our farmers keeping their costs of production below the price that buyers will pay. That in turn means using the most productive and efficient inputs - whatever they may be.

So, when the rest of the world has access to the best available seeds, fertilisers, grass varieties, etc, saying 'no, we won't have a bar of them' might make local consumers feel good. However, that's pretty much all it will do. In the longer term, it will make many farmers - and industry sectors - unviable.

People don't like GM products

Community attitudes to genetically modified organisms (GMOs) have "settled", according to the latest survey by the Office of the Gene Technology Regulator.

The overall finding of the 2017 survey was that attitudes mirrored very closely the results from the 2015 study, and were not showing the degree of change seen between previous studies.

This doesn't mean that attitudes won't change rapidly if they are influenced by some external factors (for example, media coverage). However, it does suggest that, without external influences, there won't be major changes in people's attitudes.

The OGTR survey found that only about 13% of the population are strongly opposed to GMOs. This group stood out as having more extreme attitudes to food and agriculture than any other group, as well as lower levels of overall trust.

There was also a wide difference in support for use of GMOs for different purposes. Support for GM in medical uses was highest (63%), followed by industrial (55%), environmental (54%) and, last, food and crops (38%). These results closely mirror the findings of a report released by the British the Policy Commission on Communicating Climate Science (PCCCS) in 2014.

So it is clear that the majority of people do not hold strong views against GM products. In fact, it is evident that opposition to the technology is mitigated where there is any potential for personal benefit (eg improved medical outcomes, cheaper consumer goods etc).

It's not natural

Under current legislation, a genetically modified organism (GMO) is broadly defined as an organism that has been modified by gene technology.

In the past, fears of GM were fuelled by fear of ' Frankenfoods' - fears that scientists would manipulate genes from animals into plants or vice versa - into foods that would never naturally occur. Jellyfish genes being transplanted into potatoes that glow in the dark was just one example. In fact, transgenic foods have rarely been developed and never successfully marketed.

If we think of GMOs as plants that have genomes modified by humans, then many of the plants sold in any grocery store today actually fit that description. But most of these modifications didn't occur in the lab.

Thousands of years of traditional agricultural breeding have changed plant genomes from those of their original wild ancestors. Plant breeders have selected plants with superior, desirable traits to grow in a process known as artificial selection, or selective breeding.

There has been a wealth of scientific advances since gene technology first emerged more than forty years ago. Not least of these was the decoding of the human genome in 2001.

The most advanced of these technologies is a technique adapted from bacteria called CRISPR (which stands for clustered regularly interspaced short palindromic repeats).

Since it appeared in 2012, CRISPR has completely transformed the process that researchers use to edit genes. The technique enables researchers learn what genes do by switching them on or off, or cutting them out of the DNA in a cell entirely.

While it is not the first method devised for this kind of genome editing, CRISPR is certainly a lot cheaper, faster, and more accurate than any of the alternatives. In technology jargon, it's a capital D disruptor.

The University of Queensland is already using gene editing to breed bananas resistant to Panama Tropical Race 4, a fungus that is deadly to the world's favourite fruit, Cavendish bananas. CSIRO researchers are trying to alter a gene in wheat, so the wheat fibre resembles the fibre content of oats, which is clinically proven to reduce cholesterol. Globally, CRISPR has been used in other major crops such as rice, soybeans, potatoes, sorghum, oranges and tomatoes, and it could even help to eliminate certain diseases from livestock.

Technologies like CRISPR also have wide-ranging applications for human health. They can be used in gene therapy to replace faulty genes with healthy ones, and also in drug research. They have also been used remove up to sixty viruses from pig genes, meaning pig organs could one day be used in transplants to replace human organs.

It is no wonder there is such great interest in these new fields.

It is also clear that many of these technologies are essentially no different to the processes that occur in nature, and which people have been using for thousands of years and that they pose no risk in terms of impact on human health and safety for the environment.

Where to from here?

There is currently a limited range of GM products available to the Tasmanian agriculture sector; and there is little obvious market demand for GM products.

There would thus seem to be little to gain in lifting the moratorium for the time being.

However, this position must be able to be quickly reassessed in light of changes in markets and technologies that may occur. This would include significantly improved availability of GM products for the Tasmanian agriculture sector.

This should include the following provisions:

- Any extension of the moratorium must be accompanied by a process to enable regular assessment of the constant changing technologies, availability of GMO products, and consumer and market trend shifts that may, if appropriate, trigger an earlier review. One important development when the state's moratorium was renewed in 2014 was the inclusion of trigger points to enable regular monitoring and review of scientific developments. Recognition of the need for continuous reassessment of the situation, rather than shutting the door on the subject until the next review, was seen as vital if we are to make the most of our competitive advantages. The current five-year cycle is too long in terms of advances in research and changing market trends and a shorter cycle is required. A period of no more than two years would be more appropriate.
- In conjunction with the above point, in the interests of flexibility a defined trigger mechanism should be introduced. This mechanism would allow an industry to seek from the Secretary of the Department an exemption to the moratorium on the basis that at the time of the implementation of the moratorium the gene technology in question was not available.

The industry would also need to demonstrate that the incorporation of the GM product is required for market competitiveness or other economic or social reasons.

- The current exemptions should remain in place, particularly poppies or other crops for pharmaceutical purposes and research provisions for non-food plants.
- Any extension of the moratorium must include a clear and scientifically robust definition of what is to be considered as genetic modification or genetic engineering.

Furthermore, the Tasmanian government needs to step up to the plate and commit to financially supporting the industry while it faces market interventions that impose constraints that do not apply to our competitors.

The Tasmanian Government has set an ambitious goal to increase the annual value of the agricultural sector to \$10 billion by 2050. To reach \$10 billion, the government recognises that the sector will need to grow at more than double the growth rate experienced over the past 20 years.

If this potential is to be reached, the state government must commit to support efforts to enable the Tasmanian agricultural sector to maximise outcomes in terms of production diversity, profitability and competitiveness.

When the moratorium was introduced in 2001, the then government committed to investing in specific market measures to promote the supposed advantages of our GMO-free status. When the moratorium was extended in 2014, the then government said it supported GM research being conducted here, and that it saw opportunities for non-GM research to deliver equivalent efficiency gains.

No funding has been delivered to meet either of these commitments. Investment in these areas would enhance efforts to achieve the government's 2050 targets.

In summary

On face value, the government's moratorium has little downside. It has certainly has been presented as being a no-brainer for those who believe in a clean, green future for the state; and anyone who has questioned the wisdom of this decision has been depicted as red-necked and evil.

However, not surprisingly, nothing is that simple.

In the real world, policy is developed in a fluid environment, and is subject to competing vested and political interests. This means that, under pressure, policy makers can be driven to act quickly without a lot of data to solve headline-grabbing problems. In doing so, many policy reforms have no serious empirical basis, are based on half-baked re-interpretation of often dubious research, or are outright driven by ideological positioning.

Making difficult decisions is what governments do. Individuals may disagree with particular decisions. However, as long as the community maintains trust in the processes behind these decisions, the system keeps rolling on.

Sadly, though, our system is rapidly grinding to a halt as governments not only ignore the experts they appoint to give them considered advice, but also are seemingly deaf to what would seem to be ordinary common sense.

Gene technologies are simply tools in the toolbox of the modern scientist. Like all tools, application is what matters. All new technologies require review and testing, but concerns should be based on science and evidence, not on myths and misunderstandings.

Since GM crop cultivation started in 1996, the proportion of GM crop varieties globally has grown from zero in 1996 to around 13 per cent of the world's total cropland. Over that time, 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.

Over that time, GM and non-GM crops have been grown successfully side-by-side in Australia and in twenty-four other countries worldwide. Almost all countries and regions that examined the potential for GMO-free marketing have concluded that any potential benefits did not outweigh the costs.

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.

Tasmanian farmers should have a right to choose the best products and technologies available to maximise their productivity and competitiveness.

However, if the government decides to intervene in market processes, it must be prepared to put its money where its mouth is – and invest in activities that will go some way to redressing these constraints on trade.