

GM 2.0 and its market impacts



There is currently a global push by the biotechnology industry to deregulate a variety of new genetic modification (GM) techniques - often referred to by industry as 'gene editing' or 'new plant breeding techniques'. These include techniques such as CRISPR, zinc finger nucleases and oligo-directed mutagenesis. However, if these techniques were to be deregulated in Australia before being approved in key export markets the market impacts could be catastrophic.

Key export markets have yet to decide whether to regulate these techniques as GM

The European Union has yet to make a decision on whether it will regulate these techniques as GM. The final word on the matter is likely to come from the European Court of Justice. It will rule in 18 months whether or not new GM techniques, including ODM, ZFN1, TALENs, and CRISPR-Cas, fall under EU GMO law.¹

Australia's key trading partners have zero tolerance policies for unapproved GMOs

"There is no flexibility for unauthorised GMOs - these cannot enter the EU food and feed chain under any circumstances."

Markos Kyprianou, EU Commissioner for Health and Consumer Protection²

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.³ The FAO found that between 2002 and 2012 there had been 200 cases of trade disruptions due to the presence of unapproved GMOs. The majority of the cases happened between 2009-2012, indicating increasing trade problems.

These techniques fall under Cartagena Protocol and Codex definition of modern biotechnology

All the new GM techniques involve *in vitro* nucleic acid techniques and so fall under the Codex Alimentarius and Cartagena Protocol definition of 'modern biotechnology'. Other countries could therefore reject shipments containing products derived from these new techniques that haven't been assessed for safety without fear of World Trade Organisation reprisals.

Running ahead of market approval

Were Australia to deregulate these new GM techniques it could have dramatic impacts on all food exports.

If, for example - as is likely - Europe declares these techniques GM, traceability would be mandatory - as would be testing protocols to detect the GMO. With no regulation, traceability cannot be assured and without traceability Europe's zero tolerance policy could see a halt to food imports from Australia.

There are numerous examples of costly market rejection and disruption due to the presence of unapproved GMOs. These 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.⁴

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 farmers to be nearly US\$3 billion.⁵

StarLink corn

This was a massive supply chain contamination incident in 2000 involving a GM corn used for animal feed and 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.⁶

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".⁷ The total cost to the US rice industry of the LibertyLink 601 contamination is estimated at around US\$1 billion.

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Regulatory standards don't necessarily reflect market realities

Regulatory standards have proven to be the minimum standards that food exporters must meet. Market requirements are often far more stringent than regulatory requirements. For example in Europe more than 40 GM foods have been approved for human consumption - but barely any are actually present in foods. This is because of the policy positions of food companies. Ultimately, food companies in overseas markets will determine whether new GM techniques are viewed as GM - not just governments.

Verband Lebensmittel ohne Gentechnik (VLOG) is a German Industry Association representing over 350 companies with combined annual sales exceeding 170 billion euros.⁸ The association recently released a statement arguing that plants and animals produced using these techniques should be regarded as GMOs. The association stated they should be assessed for safety and labelled to ensure supply chain integrity.⁹

The New Zealand Government will be regulating these techniques as GMOs

It was in recognition of these potential market impacts that the New Zealand Government announced earlier this year that it would be regulating these new techniques as genetically modified organisms (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."¹⁰

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¹ GM Watch (2016) European Court of Justice will rule whether new GMO techniques fall under GMO law, 3/10/16, <http://gmwatch.org/news/latest-news/17257>

² 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>

³ 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

⁴ 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>

⁵ RT (2015) Food fight: Indiana farmers sue seed company over millions in losses, <https://www.rt.com/usa/323493-Corn-farmers-sue-seed-corp/>

⁶ 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/>

⁷ USA Rice Federation (2013) Submission to the USTR on the Transatlantic Trade and Investment Partnership.

⁸ VLOG (2016) Profile, <http://www.ohnegentechnik.org/index.php?id=1121>

⁹ VLOG (2016) VLOG fordert strikte Regeln für neue Gentechnikverfahren, <http://www.ohnegentechnik.org/aktuelles/nachrichten/2016/november/vlog-fordert-strikte-regeln-fuer-neue-gentechnikverfahren/>

¹⁰ Smith, N. (2016). GMO regulations clarified, 5/4/16, <https://www.beehive.govt.nz/release/gmo-regulations-clarified-0>