

Friday January 5, 2018

The Secretary
OISCC
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Dear OISCC Committee:

Re: Retain Sections 1.1.12 and 1.3.4 in the Organic Standard

Executive Summary

We ask OISCC to reject Australian Organic's (AO) application¹ to delete Section 1.3.4 of the National Standard for Organic and Bio-Dynamic Produce from the Organic and Biodynamic Standard.² It sets a five-year minimum time for conversion to certified Organic or Biodynamic production, of land where Genetically Manipulated (GM) crops have been grown previously. Section 1.1.12 should also remain.

AO's application only refers to section 1.3.4, not 1.1.12, which OISCC now says may also be deleted. And the application references sections of an out-of-date version of the Standard, so relevant passages cannot be located by those seeking to comment. These are major failures of due process.

The OGTR's document, The Biology of Canola,³ details evidence that all viable GM canola seed and plants are very unlikely to be reliably eliminated from an Australian farm in fewer than the five years that the Standard now specifies. And synthetic chemicals disallowed in an organic system may be required to eliminate GM canola volunteers which may germinate for up to 16 years after GM production ceases.

In contrast, the applicant AO offers no hard evidence or any logical reasons in support of deleting this provision from the Standard. Yet deletion of these sections would allow lands formerly used for GM production to be certified Organic and Biodynamic, without a specified minimum In-Conversion period.

AO does not disclose the circumstances that led to its application for the deletion or what benefits it expects will accrue to the Organic and Biodynamic food industries if its application were successful. The proposed deletions appear to serve the interests of the very few primary producers who have chosen to grow GM crops and use the synthetic glyphosate and plant-produced Bt chemicals that are integral to GM production. About 97% of Australia's 120,000 farmers (both conventional and organic) remain GM-free, so amending the Standard for a small GM minority is not justified.

Many stakeholders were not briefed before or after the application was made and were not notified of the present consultation. Further public engagement with this application is essential before it proceeds.

We therefore recommend, to ensure due process and transparency, OISCC should:

1. not consider the AO application 5(b) any further;
2. commission full reviews of all the reasons and evidence behind the application;
3. prepare and publish reviews of the evidence for retaining these sections;
4. include the new GM techniques (CRISPR etc.) invented over recent years in its reviews;
5. amend the Standard to prohibit the new generation of GM techniques and products; and
6. consider extending the five-year GM In-Conversion requirement.

¹ Australian Organic, Application to alter the national Standard for Organic and Biodynamic Produce, 26/02/15.

<https://oiscc.org/wp-content/uploads/2017/11/APPLICATION-GMO-conversion.pdf>

² The national Organic and Biodynamic Standard. <https://oiscc.org/wp-content/uploads/2017/07/2017-National-Standards.pdf>

³ OGTR, The Biology of Brassica napus L. (canola), Version 2: February 2008.

[http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/content/canola-3/\\$FILE/biologycanola08_2.pdf](http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/content/canola-3/$FILE/biologycanola08_2.pdf)

AO's Case is Weak

AO proposes deleting from the Standard, one section that sets the five-year time frame and process required for conversion of land to certified Organic or Biodynamic, where GM crops were formerly grown. Proposed for deletion is section:

1.3.4 Where genetically modified crops or livestock have been grown or used on a production unit, other than a landless system, a minimum of at least five years must have elapsed before products grown in or on that land can be certified according to this Standard.

Despite not being in the AO application, the following section may also be slated for deletion:

1.1.12 Where Genetically Modified crops have been grown on a production unit, a minimum of at least five years must elapse before products grown or produced on said area can be certified according to this Standard.

1. AO argues that Sections 1.2.2; 1.2.4; 1.2.6 and 1.3.5 of the Standard would suffice instead of the deleted sections but offers no evidence for its assertion. Sections 1.2.16 and 1.3.5 make specific reference to GM but both refer to a prohibition on co-production of GM and Organic crops. Thus, they are much weaker than the clauses proposed for deletion, which detail In-Conversion rules.

This general clause would effectively reduce In-Conversion from GM production to Organic, to a minimum of three years:

1.2.2 Systems certified as in-conversion shall progress to organic status within a timeframe determined by the approved certifying organisation, but this cannot be less than three years from commencing organic management practices.

But the OGTR's report, already referenced, shows that dormancy and weediness in Australian canola requires more research before uncertainties can be resolved and provides evidence of canola seed dormancy for up to 16 years.

The OGTR report says: "Persistence of canola seed is considerably longer in undisturbed soils compared to cultivated soils (Chadoeuf et al. 1998). Studies in the Northern Hemisphere suggest that viable seeds of canola may persist in disturbed soils for at least 5 years and possibly up to 16 years in undisturbed soil (Masden 1962)." P 18&19.

This is significant as GM production systems use minimum tillage. Soils are not disturbed so seed may remain dormant and the system relies on repeated Roundup spraying to manage weeds. A canola seed bank and glyphosate residues (dicamba and 2,4-D tolerant GM crops are also now grown in the USA) may be left in the soil.⁴ Australian GM cotton also sheds Bt toxins into soil (unlike the Bt sprays that organic farmers use), which should also be stringently assessed in any proposal for Organic Conversion on land previously used to grow GM cotton. GM varieties are now almost 100% of Australian cotton.

The report also provides further evidence of problems for Organic In-Conversion when it asserts that, "Despite the lack of Australian data, overseas studies (cited above) suggest that high temperatures and low soil moisture availability experienced after harvest in Australia, may provide conditions to induce secondary dormancy."

In addition, climatic conditions in the, "Northern Hemisphere after canola harvest is more conducive to germination of canola seed than the hot/dry conditions experienced after harvest in Australia. The persistence of viable canola seed in the soil under Australian field conditions is poorly understood and further research is needed," and, "Western Australian surveys have shown harvest losses (of canola seed) to be as high as 40 to 150 kg/ha." P 19

The fate of canola seed is also uncertain as, "Due to cultivation, seed can become buried and this seed may also die, remain dormant or germinate (creating seedlings or fail to emerge) (Lutman 1993)." P 20

⁴ GRDC, Herbicide residues in soils. <https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2016/02/herbicide-residues-in-soils-are-they-an-issue-northern>

Further, segregation is a major issue as, "Canola is considered a major weed in agricultural ecosystems in Australia (Groves et al. 2003) Surveys have shown that canola occurs as a volunteer weed in up to 10% of cereal crops in southern Australia (Lemerle et al. 1996)." P 27

Even off-farm, GM canola can pose problems for non-GM conventional and organic producers as, "An Australian survey encompassing a total of 4000 km of road and 400 observations recorded incidences of canola plants growing within 5m of the roadside (Agriseach 2001). The incidence of canola in the major canola growing districts was as follows: southern NSW (31%), Victoria (13%), SA (9%), WA (20%) and Tasmania (14%). ... Dignam (2001) surveyed 103 local councils across Australia and evidence of canola was present in 30% of the councils surveyed." P 29

GM canola's threat needs clarification as, "There are limited data on outcrossing rates under Australian conditions (Rieger et al. 2002). Outcrossing rates between commercial fields of non-GM herbicide tolerant canola and conventional canola at distances from 0 to 2.6 km were variable, ranging between 0 and 0.15%. The maximum outcrossing rate of 0.197% was measured at 1.5 km." P 31

Organic vegetable growers are also at risk as, "Table 5. Potential gene flow between canola (*B. napus*) & Australian Brassicaceae species (modified from Salisbury, 2002)" shows that at least Group 1 and 2 brassicas can receive pollen from canola in the field. P34.

AO's application also seeks to rely on section:

1.2.4 The certification body may extend the length of the conversion period. During this time the production unit must remain under an organic or bio-dynamic inspection system in order for the produce to carry the in-conversion label.

This is weak and unenforceable policy as no GM or other trigger is specified for the discretionary extension. An independent inspection system for GM canola volunteers would be difficult to design and manage when so much viable seed (40 to 150 kg/ha as cited above) may remain for extended periods.

AO also mentions section:

1.2.6 GMO products are not compatible with organic and bio-dynamic management practices and are not permitted under a parallel production system.

GM canola seed does not respect such a prohibition on parallel production. Though an organic grower may not deliberately grow GM canola, it is evident that segregation may be well nigh impossible to enforce where a GM crop had been cultivated on the land, even five years before.

1.3.5 The certification of organic crops, livestock or agricultural products will be withdrawn where genetically modified crops, live stock or agricultural products are grown or produced on the same farm.

Again, this merely prohibits the deliberate co-production of GM and certified organic crops, under threat of decertification. But it does not resolve the uncertainties inherent in a GM conversion that the OGTR's evidence raises, and does not address contamination from prior GM cropping and animal production.

2. AO claims Organic Standards in other countries set no requirements for GM to Organic conversions.

But Organic certifiers globally now all comply with ISO17065.⁵ The absence of GM In-Conversion clauses in other national Standards is unsurprising as about 160 countries and 60 dependent states do not grow any GM crops at all. In the 26 countries that grew some GM crops in 2016 (Australia was 12th with less than 900,000ha), the top 10 producers (USA 39%; Brazil 27%; Argentina 13%; Canada 6%; India 6%; Paraguay 2%; Pakistan 2%; China 2%; South Africa 1%; Uruguay 1%: rounded to nearest whole numbers) grew over 96% of all GM crops.⁶ Moreover, being a leader in GM-free Organic

⁵ ISO/IEC 17065:2012. <https://www.iso.org/standard/46568.html> and <https://www.iso.org/obp/ui/#iso:std:iso-iec:17065:ed-1:v1:en>

⁶ ISAAA Briefs, brief 52, Global Status of Commercialized Biotech/GM Crops: 2016, Table 3, P5. <https://www.isaaa.org/resources/publications/briefs/52/download/isaaa-brief-52-2016.pdf>

Standards is not a disadvantage. It gives Australia a competitive advantage and highly favoured access to many export markets.

3. AO claims, "clause (1.3.4) is not science-based".

The OGTR's summary of scientific evidence clearly refutes this baseless AO claim, so the five-year In-Conversion for GM crops must stay as a minimum. AO gives no rationale or evidence to justify deleting the five-year time frame from the Standard.

The scientific evidence, with some data gaps that require filling, strongly supports extreme caution on the conditions and length of In-Conversion for lands where GM canola has been grown, especially as the crop is Roundup tolerant. Reducing the Standard for In-Conversion of GM cropping land to Organic would imperil the certification, management and market reputation of certified Organic and Biodynamic production systems and food industries.

If EU importers, for instance, found GM or Roundup contamination in an Organic or Biodynamic food, renowned for being GM-free and chemical-free, the high reputation of these foods would be irretrievably tarnished and lost. Similarly, if a European Union auditor found evidence of GM canola on a certified farm, the whole Organic certification system could be called into question.

GM cotton cropland In-Conversion to Organic needs more research, as the evidence is incomplete. The OGTR's report, *The Biology of Gossypium hirsutum L. and Gossypium barbadense L. (cotton)*⁷ discloses some different conversion problems from canola. However, GM cotton is also Roundup tolerant so glyphosate residues in soil may be an issue. Under various environmental conditions, some components of Roundup formulations have substantial longevity in soils.⁸

The Bt toxins made in GM cotton are also extruded into soils, impacting microorganisms and other biota.⁹ Bt toxins produced in GM plants differ in several respects from those sprayed as Dipel and do not degrade in the same way or as rapidly.¹⁰ Dipel is acceptable in organic practice but GM Bt crops are not.

The OGTR's document also shows in Table 1 (Page 2), 18 wild diploid relatives of cotton in Australia. Initially the forerunner of OGTR (GMAC) prohibited cultivation of GM cotton North of Parallel 30 South, as outcrossing to wild relatives was unresolved. The prohibition was later lifted and GM cotton is now licensed for cultivation throughout Australia. Whether reservoirs of GM genes may be in Australia's natural environment has not been explored, to our knowledge.

4. AO must also clarify its own stance on time frames for In-Conversion from GM production systems. On its website¹¹ AO makes the following confusing pronouncement,

“How long do products remain In-Conversion?”

Producers must be In-Conversion for **two years** before becoming fully certified organic. If a producer can prove organic compliance for **a minimum of three years** prior to applying for certification, through detailed management plans and soil tests, than they would only be required to be **In-Conversion for one year. The duration of time in In-Conversion status depends on the operation and what records (compliance) can be provided.**”

That makes the time frame for In-Conversion appear to be entirely at each certifier's discretion. Such a lack of uniformity is unsatisfactory. Guidance documents for assessments of the risks of GM croplands proposed for Conversion should be developed as part of the Standard, to ensure the certifiers all consistently apply the Standard. Organic shopper and industry confidence and trust can only be built and maintained when the Standard is clear, uncompromised and uniformly applied.

⁷ OGTR, *The Biology of Gossypium hirsutum L. and Gossypium barbadense L. (cotton)*, V3, 2016.

[http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/content/5DCF28AD2F3779C4CA257D4E001819B9/\\$File/The%20biology%20of%20cotton%202016.pdf](http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/content/5DCF28AD2F3779C4CA257D4E001819B9/$File/The%20biology%20of%20cotton%202016.pdf)

⁸ Myers, J P, et al., Concerns over use of glyphosate-based herbicides and risks associated with exposures: a consensus statement, *Environmental Health*, 17 February 2016. <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-016-0117-0>

⁹ Icoz I, and Stotzky G, Fate and effects of insect-resistant *Bt* crops in soil ecosystems, *Soil Biology and Biochemistry*, Vol. 40, Issue 3, March 2008, Pages 559-586. <http://www.sciencedirect.com/science/article/pii/S0038071707004439?via%3Dihub>

¹⁰ *GMO Myths and Truths: an evidence-based examination of GMO claims*, <http://earthopensource.org/gmomythsandtruths/sample-page/3-health-hazards-gm-foods/3-8-myth-gm-bt-insecticidal-crops-harm-insects-harmless-animals-people/>

¹¹ Australian Organic, What is In-Conversion? <http://austorganic.com/consumers/what-is-inconversion/>

The Standard must also address the new GM techniques

The Australian Organic Standard should also be amended to reflect the emergence of a new generation of Genetic Manipulation techniques over recent years and the challenges they pose to the Standard.

The OGTR proposes to deregulate several of the new techniques¹² and without regulation there will be no simple or transparent way to monitor their entry into agricultural production systems. No-one would be advised officially whether a crop, animal or microbe was created using GM, or not. This may be a quagmire for organics if the proposed deletions are made and the Standard is unamended to take full account of the emerging techniques.

IFOAM EU's Position paper on the New Plant Breeding Techniques (which are generic and can be used to manipulate the genome of any living organism) clearly states,

“it is of crucial importance for the organic sector,” that, “new techniques that engineer living organisms through technical, chemical or biotechnological intervention in the cell and/or nucleus be a) subject to a risk assessment and b) if authorised for release in the environment and the food chain, be subject to the mandatory traceability and labelling requirements that apply to other GMOs. Organic farming, which is legally defined at the EU level Council Regulation (EC) No 834/2007 of 28 June 2007¹³ on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91, excludes GMOs and products produced from or by GMOs from its production process.”¹⁴

The IFOAM EU Group also,

“considers that the (EU) Commission should urgently clarify that the following NPBTs fall within the scope of the GMO legislation: • Oligonucleotide directed mutagenesis (ODM); • Zinc finger nuclease technology types I to III (ZFN-I, ZFN-II, ZFN-III); • CRISPR/Cas; • Meganucleases; • Cisgenesis; • Grafting on a transgene rootstock; • Agro-infiltration; • RNA-dependent DNA methylation (RdDM); • Reverse Breeding; • Synthetic Genomics.”¹⁵

Many of these new GM products may also claim to be 'nature identical' deletions from the genome of humans, animals, plants and microbes and make a pitch for acceptance under the Australian Organic Standard, unless it is amended to prohibit them.

NoGall must not be used as a stalking horse for such deregulation of the next wave of GM techniques (CRISPR, Cisgenics, gene drives, etc.) only recently invented. Some critics of the Organic Standard point to NoGall¹⁶ as a challenge to its non-GM rationale. NoGall was created through a gene deletion from *agrobacterium tumefaciens*, which causes crown galls in fruit trees and rose bushes. In the 1980s, Adelaide researchers created NoGall by mimicking a natural variant of the bacterium, deleting the gene for plant pathogenicity and culturing the benign strain as a seed and plant inoculant.

Conclusion

We have made a compelling case that OISCC should commission:

1. not consider the AO application 5(b) any further;
2. commission full reviews of all the reasons and evidence behind the application;
3. prepare and publish reviews of the evidence for retaining these sections;
4. include the new GM techniques (CRISPR etc.) invented over recent years in its reviews;
5. amend the Standard to prohibit the new generation of GM techniques and products; and
6. consider extending the five-year GM In-Conversion requirement.

¹² OGTR, 2016-17 Technical Review of the Gene Technology Regulations 2001.

<http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/reviewregulations-1>

¹³ Article 9.1 states that “GMOs and products produced from or by GMOs shall not be used as food, feed, processing aids, plant protection products, fertilisers, soil conditioners, seeds, vegetative propagating material, micro-organisms and animals in organic production.”

¹⁴ IFOAM EU, New Plant Breeding Techniques, Position paper 10 December 2015 http://www.ifoam-eu.org/sites/default/files/ifoameu_policy_npbt_position_final_20151210.pdf

¹⁵ Steinbrecher, R A, Genetic Engineering in Plants and the “New Breeding Techniques (NBTs)” Inherent risks and the need to regulate, briefing December 2015. <http://www.econexus.info/sites/econexus/files/NBT%20Briefing%20-%20EcoNexus%20December%202015.pdf>

¹⁶ New BioProducts Inc. (BASF), NoGall, <http://www.newbioproducts.net/nogall-.html>