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ABN: 22 020 026 644

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Dear Committee,

Please accept the attached submission regarding the enquiry of the Legislative Council Select Committee on Moratorium on the Cultivation of Genetically Modified Crops in South Australia.

The Conservation Council of South Australia (Conservation SA) welcomes the opportunity to make a submission. In the event that the Select Committee determines to conduct hearings in public, we request the opportunity to be heard.

Conservation SA is an independent, non-profit and strictly non-party political peak body organisation representing around 60 of South Australia's environment and conservation organisations. Conservation SA has been a strong advocate for the protection of native vegetation and biodiversity in South Australia since 1971.

The inquiry into the moratorium on the cultivation of genetically modified (GM) crops in South Australia is tasked with, amongst other things, considering matters relating to the co-existence of GM and non-GM crops. This includes the 'potential impacts of crop contamination on non-GM and organic farmers'.

### **1. The benefits and costs of South Australia being GM-free for the state, its industries and people**

From a financial perspective, it is our understanding that there is no positive price differential between GM and Non-GM Canola or Cotton. In all recorded cases that we are aware of GM canola fetches a lower price at market because it is GM. This negative price differential is compensated by lower production costs of GM Canola with the convenience of less discriminate chemical weed management resulting in lower on-farm labour costs.

The greater use of GM crops guarantees the greater use of chemicals such as glyphosate / Roundup®. Increasingly, around the world, concerns are being raised and evidence offered that the product is not as safe as claimed, and that it can have significant negative impacts on health and the natural environment.

## **2. The difference between GM and non-GM crops in relation to yield, chemical use and other agricultural and environmental factors;**

The positives proposed by farmers using Roundup® Ready Canola is that it takes less effort to manage the farm production. The level of production is no greater per hectare than non-GMO varieties.

Roundup® Ready Canola is not bred for increased production but rather for resistance to poisoning by glyphosate. The key to this is that GM canola is resistant to glyphosate (the herbicide also known as Roundup®) so weed management is easier.

The negative side effect has been a drastic increase in the use of glyphosate, which has increased over 16 fold since the introduction of GM canola.

### Uncontrolled environmental spread

Some GM crops have been genetically modified to survive being sprayed with the herbicide glyphosate (Roundup®). Over years of spraying with Roundup®, some weeds have developed resistance and become “super-weeds” that require ever-additional chemicals to suppress them. Inevitably, they develop resistance, thus requiring new chemicals; and so, the cycle continues. The damage to the environment is incalculable.

Research now reveals a new dimension in environmental risk posed by GM plants: glyphosate-tolerant plants show a surprisingly high potential for uncontrolled environmental spread<sup>1</sup>. Glyphosate-resistant genetically engineered plants have been grown commercially for more than 20 years and are the most commonly grown genetically engineered plants worldwide. Nevertheless, their high potential for uncontrolled spread has so far not been investigated in detail in any official risk assessment.

## **3. Any long-term environmental effects of growing GM crops including soil health.**

GM canola relies on the increased use of glyphosate (Roundup®) on the crop compared to non-GM farming techniques. The resistance to poisoning means that the glyphosate can be used on both crops and weeds but only the weeds will die.

For the biota, it means that a much greater amount of chemicals is being applied and the effect is to disturb and kill other forms of life including native plants and beneficial organisms. Glyphosate is now considered much more persistent in the environment than studies suggested when it was first released. Both the increased persistence as well as mounting evidence of increased toxicity are leading to glyphosate being banned in other markets. Whilst the European Union has relicensed glyphosate for use in Europe for another five years many individual

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<sup>1</sup> Research reveals new dimension in environmental risk posed by genetically engineered plants.  
<http://www.testbiotech.org/en/node/2184>

countries have prospective bans underway and public opinion is strongly against its use<sup>2</sup>.

The use of GM Canola does not only mean that the GM material is potentially distributed across the landscape but the glyphosate required to successfully GM farm goes with it – with runoff into land and water on the way. A major effect is the development of glyphosate resistance in non-target species due to its increased use – not unlike the antibiotic resistant issues in medicine. As glyphosate is a compound that interferes with chemical pathways in the target plants it may also have an effect – as yet unmeasured – on other non-target organisms in other phyla, eg soil mycorrhiza and beneficial bacteria, which are essential components to maintaining healthy soils.

The increased use of herbicide connected with Roundup® Ready canola has been shown to lead to increased weed resistance to glyphosate. This resistance impacts on all farmers – including conventional farmers – in the US agricultural chemical companies are recommending organic techniques such as crop rotation and mechanical removal as a way to overcome or at least slow what they see as inevitable increases to resistant varieties<sup>3</sup>.

Negative impacts on the environment from GMOs are a significant concern for scientists and the public; these effects on the environment include increased use of herbicides and pollution of aquatic ecosystems.

#### GM Foods and Long-Term Effects on the Environment

A real concern regarding GM crops is the impact their creation and use may have on the environment. The threat to biodiversity means that the natural ecosystem can be compromised, particularly over the long-term. The use of one kind of GM crop could affect the growth of wild plants that may serve as food to wildlife and other organisms in the ecosystem. There is the potential for a GM crop to essentially dominate the ecosystem and compromise its biodiversity, thus negatively impacting the environment.

#### **4. The potential for contamination of non-GM or organic crops by GM crops**

Contamination is through GM genetic material making its way into organic and Non-GM production systems as well as pollution by the glyphosate that is an essential part of GM farming. Consequences of pollution by GM material differs between non-GM and organic farming systems. Non-GM farming standards are not subject to specific formal or international standards. Grain handlers segregate non-GM and GM in storage but as we understand it some crossover is accepted and the market is none the wiser. In organic systems detailed national and international

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<sup>2</sup> <https://www.baumhedlundlaw.com/toxic-tort-law/monsanto-roundup-lawsuit/where-is-glyphosate-banned/>

<sup>3</sup> [http://www.syngenta-us.com/herbicides/resistance-fighter?utm\\_campaign=Resistance-Fighter&utm\\_medium=referral&utm\\_source=vanity-url](http://www.syngenta-us.com/herbicides/resistance-fighter?utm_campaign=Resistance-Fighter&utm_medium=referral&utm_source=vanity-url)

standards and certification schemes seek to make sure that GM is kept well separated from organic and any cross contamination can lead to organic farmers losing their organic certification and therefore their ability to access those markets, here and overseas.

The wide spread use of GM canola in Canada has resulted in GM contamination of cropping land to the point where it is now impossible to grow GM free canola in that country. This would be a devastating outcome for non-GM conventional; and certified organic croppers who regularly achieve significant price premiums, and make a significant economic contribution to South Australia's agricultural sector and the economy.

The contamination of non-GM or organic crops by GM crops is not so much a potential as a certainty in an ordinary agricultural environment. There is a range of mechanisms which could lead to contamination in the paddock, individually or in combination: seed or plants being blown by wind, or carried by water, animals, humans or farm machinery; pollen carried by bees, insects or birds.

## **5. Any other relevant matters**

Glyphosate was originally considered harmless to humans and quickly broken down in the environment. Research that is more recent is significantly questioning the safety claims and has shown that it is far more persistent in the environment than previously thought. Recently a US court awarded a significant amount in damages to DeWayne Johnson against a claim that not only did Roundup® use cause his cancer but also that Monsanto had specifically suppressed information that it had regarding the potential carcinogenic properties of its product.

At this point adopting legislative change, which would directly result in a significant increase in the glyphosate exposure of South Australians, would be unwise.

## **Recommendations**

That the South Australian government:

- Maintain its GM-free policies and moratorium on the growing of commercial GM canola until at least 2025, as parliament decided;
- Keep and strictly enforce the state ban on the transit of any GM seed through the state;
- Advocate the OGTR and FSANZ continue to assess, regulate and license all new and emerging GM techniques and their products, under the national Gene Technology Scheme.

As Conservation SA represents diverse groups of member organisations we welcome the opportunity to contribute to the review and subsequent planning to ensure the state can build its capacity for success across this challenging area.

Thank you for the opportunity to provide a submission into this important review. Please contact me on [craig.wilkins@conservationsa.org.au](mailto:craig.wilkins@conservationsa.org.au) or (08) 8223 5155 should you require any further information.

Yours sincerely,



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