



Australian Government

Department of Health

Office of the Gene Technology Regulator

Executive Summary - Genetically Modified Organism Herbicide Tolerance Trait Review



Crop Protection
Australia

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31 July 2020

Executive Summary

Weed control is one of the major costs to crop production and a major determinant of crop and pasture rotation and management. The impact can be very specific to particular weed problems in different crop and pasture production systems and these can differ greatly across regions. The economic costs of weeds to Australian producers are also a key driver of practice change, as is the importance of managing herbicide resistance to sustain viable agricultural production.

The report considers the current and potential future farming systems changes, environmental risks and impacts including the impact on producer practices of the use of cultivars with multiple genetically modified organism (GMO) herbicide tolerance traits. The report details the rationale for a broad framework or potential policy options to provide guidance to the Office of the Gene Technology Regulator (OGTR) when assessing a GMO with multiple herbicide tolerant (HT) traits. The report outlines an understanding of current and future potential risks from resulting farming systems change through production of genetically modified (GM) crops with multiple herbicide tolerance traits with a rationale for the OGTR to consider whether some form of guidance or industry advice might be appropriate to address the issues outlined in the report.

Extending multiple HT traits into a stack would potentially enhance future positive change to farming systems, particularly if the technology offers additional timing during the crop growth period to provide effective weed control or weed seed set control, while enabling effective crop competition with weeds. The report suggests that the most critical functions of GM crop HT traits risk assessment are adequately managed with the current regulatory processes in place with the OGTR, Food Standards Australia New Zealand (FSANZ) and Agricultural Pesticides and Veterinary Medicines Authority (APVMA).

There is a requirement for the broad value chain of industry stakeholders to discuss the complex strategic issues resulting from commercial investment in GM and non-GM HT stacking in the commercial landscape and its impact on farming systems and resulting international trade of agricultural product. There is also a requirement for a formal industry feedback mechanism into the regulatory process to manage strategic farming systems related issues, rather than consideration of individual trait or herbicide issues. It is also clear that there is both a requirement and opportunity for improved strategic guidance on crop HT stewardship for volunteer crop control.

There is a requirement for some form of formal industry discussion and consensus agreement on a long-term strategy to address these issues. The extension of current GM crop advisory committees used under the current licence agreements is required, or establishment of a new grains industry committee modelled on that for the cotton industry, or potentially merged for some aspects. The membership of this extended strategic advisory committee should however be extended to include peak producer bodies, plant breeders and traders.

The key issue arising from this review is the strategic deployment of the finite resource of potential HT traits, both GM and non-GM, to maximize the long-term sustainable use of the technology within a farming systems context with flexible crop rotation choices. Options to address this include:

- **Broadening the role of existing strategic expert stewardship groups**
 - WeedSmart Executive Committee and investment stakeholders to expand its stewardship and communications program to specifically include HR management when using HT GM and non-GM crops, including HT crop volunteer control.
 - CropLife Australia Herbicide Resistance Management Review Group (HRMRG) to include development of strategies in the context of HT crops and HT trait stack crops.
- **Establishing a new commodity specific or related cross industry strategic expert stewardship group**

Membership should include:

- Expert scientists
- Representation from the herbicide registrant and plant science industry
- Peak producer organisations
- Commercial plant breeding representatives
- Representatives from domestic and international export traders
- Combination of some or all of the options above.

The key gap identified in this report is that there is a need for a formal industry feedback mechanism into the regulatory process to manage strategic farming systems change-related issues, rather than consideration of individual traits or herbicide use issues. A key missing link is the integration and regulation of outcomes from commercial breeding programs. It is also clear that there is both a need and opportunity for improved strategic regulatory guidance on crop HT stewardship for volunteer crop control and ensuring that product meets trade and market requirements. Options to address this include:

- **Stacked GM HT crop volunteer risk management**
 - Registrant responsibility under the GM crop license agreement with the OGTR to extend current advisory committees such as TIMS herbicide technical panel, or HRCG to provide annual formal feedback on the GM HT traits and stack combinations including non-GM used in crop breeding program; or
 - Establishment of a new grains industry committee modelled on the cotton industry Transgenic Insecticide Management Strategy (TIMS) committee or merging the grains HRCG into the TIMS herbicide technical panel for some functions. Membership should include:
 - Expert scientists
 - Representation from the herbicide registrant and plant science industry
 - Peak producer organisations
 - Commercial plant breeding representatives
 - Representatives from domestic and international export traders.

- **Stacked GM and non-GM HT crop volunteer and herbicide residue risks on trade and market access**
 - Broaden the APVMA Trade advice notice (TAN) process as a mechanism to manage consultation with industry stakeholders on new herbicide registrations for a crop variety with a new HT trait stack combination not already assessed by the OGTR, including herbicide residue risks and crop volunteer control risks.
 - Establish a new regulatory requirement within the APVMA to require herbicide registrants and/or GM HT trait license holders to submit a registration variation if the mix of HT traits or combination of traits changes from the original application, particularly addressing herbicide residue and volunteer control which would require a new formal TAN process for industry consultation and feedback.

The potential options highlighted in this report are intended to build on the established expertise, capability and processes already in place and successfully in operation. The importance of maintaining independence, public transparency and a science-based risk management approach is critical for enabling new HT technology to be assessed for integration into a changing and improving sustainable farming systems. It is important that Australia has a regulatory framework that builds confidence and certainty from investment in new technology. Any proposed change to improve this will require ongoing dialogue and formal engagement with the plant science sector and industry producers as well as state governments that also have a responsibility to industry and the community.