Questions & Answers on licence application DIR 201 – field trial of genetically modified (GM) wheat and barley

What is this application for?

The University of Adelaide is requesting a licence to grow GM wheat and barley modified for enhanced yield. The field trial would be conducted on one site in Light Regional Council in South Australia, with a maximum planting area of 2 hectares each year. The trial would run from May 2024 to January 2029.

How has the GM wheat and barley been modified?

The GM wheat and barley have been genetically modified for yield enhancement. Some of the GM wheat contain introduced genes that come from plants – one that is commonly used as a model plant in research and two that are common food crops. In other GM wheat and barley proposed for release, yield will be examined by genetically "knocking out" the function of certain genes, rather than introducing genes. The introduced or knocked out genes are expected to enable plants to survive periods where conditions are very dry and to produce good yields following drought or similar stress.

The GM wheat and barley may also contain selectable marker genes from common bacteria and a coral. The genes confer antibiotic resistance, tolerance to glufosinate herbicides and a red fluorescent marker protein. The antibiotic resistance markers and red fluorescent marker protein were used during laboratory stages to be able to identify the GM plants. The glufosinate tolerance gene is only used for GM plant selection during development of the GM lines in the laboratory. Genetic elements used to knock out genes in some of the GM wheat and barley may also be present in the lines proposed for release.

What is the purpose of the trial?

The trial is to assess the performance of the GM wheat and barley under field conditions. The GM wheat and barley grown in this field trial would not be used in human food or animal feed.

What controls are proposed for this release?

The consultation Risk Assessment and Risk Management Plan (RARMP) prepared for this application concluded that the field trial poses negligible risks to people or the environment. However, as this is a field trial under limited and controlled conditions, a number of licence conditions have been drafted to restrict when and where the trial can take place, limit the size of the trial, and stop the GM wheat and barley from spreading outside the trial sites. For example, there are conditions to isolate the trial site from other wheat and barley crops or sexually compatible species, to securely transport and store the GMOs, and to inspect the site at the end of the trial to check that all GM plants are destroyed. Full details of the draft licence conditions are available in the consultation RARMP.

How can I comment on this application?

The full consultation RARMP and a summary of the RARMP for application DIR 201 are available on the OGTR website or via the contacts listed below. You are invited to submit your written comments (including email) on the consultation version of the RARMP, related to any risks to the health and safety of people or to the environment from the proposed release. Comments must be received by the close of the consultation period on **12 March 2024**.

What are the next steps in the evaluation process?

The RARMP will be finalised, taking into account submissions related to the protection of people or the environment. A de-identified summary of all comments received and consideration of those comments is included in the Appendices to the final RARMP. The finalised RARMP will inform the Regulator's decision on whether or not to issue a licence.

The Office of the Gene Technology Regulator

OGRTR Website

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