

QUESTIONS & ANSWERS ON DECISION ON LICENCE APPLICATION DIR 053/2004: GRAIN BIOTECH AUSTRALIA'S GENETICALLY MODIFIED WHEAT

What is this application for?

Grain Biotech Australia Pty Ltd (GBA) has received approval from the Gene Technology Regulator to undertake a small trial (0.45 hectares) of genetically modified (GM) salt tolerant wheat under limited and controlled conditions at Corrigin shire in Western Australia during the winter growing season of 2005.

What is the purpose of the proposed release?

The trial involves early stage 'proof of concept' research that aims to assess the GM wheat's ability to tolerate saline conditions and compare its field performance with conventional wheat. It will also generate seed stocks for further research (subject to future approval).

How has the GM wheat been genetically modified?

The GM wheat has been genetically modified to produce increased levels of proline¹. Proline is known to act as an osmoprotectant² in many plants i.e. it can enable plants to grow in the presence of increased salt levels in soil. The salt tolerance trait was achieved by the introduction of a gene (ornithine aminotransferase) from a common plant (*Arabidopsis thaliana*). The protein expressed by the new gene is an enzyme which is involved in the metabolic pathway that leads to the production of proline.

A gene from a common soil fungus (*Myrothecium verrucaria*) that conferred tolerance to the herbicide cyanamide was also used as a 'marker' gene to select transformed plants in the laboratory. This herbicide is not registered for use on wheat.

Would this be the first field trial of GM wheat in Australia?

No. However, this particular GM wheat has not been trialled previously in Australia. The Regulator has recently approved an application to trial GM wheat with modified grain starch characteristics in the Australian Capital Territory (DIR 054/2004). Five field trials of other types of GM wheat were authorised under the former voluntary system (GMAC) dating back to 1996.

Will any of the wheat from this trial be used for human food?

No. None of the material harvested from the trials can be used for human food or stock feed. Approval from Food Standards Australia New Zealand (FSANZ) would be required before this could occur.

Have controls been imposed on this release?

Yes. The licence conditions include a range of control measures that will restrict the direct exposure of people, animals and other organisms to the genetically GM wheat, and the spread of the GMO from the trial site e.g. requirements for fencing and bird netting, destruction of GM material not required for further research, harvesting and transport conditions. Other measures are primarily designed to limit the transfer of the introduced genes to related plant species and persistence of the GMO at the trial site e.g. imposing monitoring and isolation zones, and post-harvest site management to remove regrowth. Full details of the licence conditions are set out in the final version of the Risk Assessment and Risk Management Plan (RARMP) that was prepared for this application and formed the basis of the Regulator's decision to issue this licence.

The complete document, which also includes a summary of the submissions received through the consultation process with expert groups and the public, and an Executive Summary, are available on the OGTR website (www.ogtr.gov.au under 'What's New?') or via Freecall 1800 181 030.

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¹ Proline, present in all organisms, is one of the 20 amino acids that are the building blocks of all proteins.

² Osmoprotectant: assists plants to regulate the pressure inside cells by adjusting the concentration of water and salts.