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'We want to ensure that developments in biotechnology are captured for the benefit of the Australian community, industry and the environment, while safeguarding human health and ensuring environmental protection.'

### Is extra identity preservation necessary?

In terms of economic efficiency, segregation aimed at protecting price premiums and market access for non-GM canola is only justified if the additional value it creates in the form of higher value grain outweighs the cost of the segregation. While it is evident that there are additional costs associated with the segregation of GM canola, in general terms it does not appear at this stage that there is a price premium in domestic and world markets for certified non-GM canola that would be sufficient to offset the additional costs of segregation.

With future generations of GM canola and other grains, modifications may involve altering the oil profile and other quality attributes such as protein levels so as to earn price premiums for desirable quality attributes. Identity preservation of grain with high value quality attributes, such as GM high oleic acid soybeans, is currently undertaken using shipping containers.

### Who would pay?

This question was beyond the scope of the report\*. For the purposes of the report, the additional costs were attributed to non-GM producers because that is the sector hoping to benefit from identity preservation.

### How do I find out more?

This brochure is one in a series of Biotechnology briefs presenting summaries of key reports on biotechnology and Australian agriculture.

### \*More information is available in the report:

Foster, M. 2006, GM Grains in Australia: Identity Preservation, ABARE Research

Report 06.25 Prepared for the Australian Government Department of Agriculture, Fisheries and Forestry and the Grains Research and Development Corporation, Canberra, December 2006.

### Other titles in this series?

Biotechnology briefs: GM oilseed crops and the Australian oilseed industry

Biotechnology briefs: Market acceptance of GM canola

Biotechnology briefs: GM canola - Potential impacts on organic farming in Australia

The Australian Government's National Biotechnology Strategy funded the production of these reports and brochures.



# Biotechnology

## GM grains in Australia: Identity preservation

## briefs

In certain circumstances, it may be beneficial to keep separate and preserve the purity or identity of grains and oilseeds. This 'identity preservation' is already practiced, for example with special purpose barley and wheat, and may in the future be used to separate genetically modified (GM) and non-GM grains for marketing purposes.

Identity preservation is likely to occur mainly in the central grains handling and storage system. Additional costs may arise because of additional time taken whilst switching between different grains and because of the possible requirements for testing for the presence of GM material.

On the farm, identity preservation arrangements may result in higher costs owing to the need for certified planting seed; various crop management techniques; and cleaning after harvesting, handling, storing and transporting GM grains.

### What is 'identity preservation'?

'Identity preservation' ensures that a crop maintains its unique identity from seed producer to end user. The process involves keeping grain with the desired traits separate from other grains, right from the seed planting stage through to end use.

Identity preservation is already widely and successfully carried out in the grains industry – for example, with conventional malting barley or durum wheat. Identity preservation can be used to ensure that parcels of non-GM grain meet particular standards for the unintended presence of GM materials.

### Why do we need identity preservation?

GM grains have the potential to markedly improve the quality and environmental impact of our crops and

to provide significant benefits for the profitability and sustainability of our cropping industries.

However, perceptions of consumer resistance to GM products mean that some non-GM producers are concerned that the unintended presence of GM material in their products could lead to a loss of price premiums and market access.

Such unintended presence may result, for example, from:

- cross pollination
- regrowth from previous years' GM crops
- co-mingling in the grain handling, storage and marketing systems.

Identity preservation arrangements significantly reduce the risk of co-mingling of GM and non-GM grains and can preserve the non-GM status of grains.



### Who would benefit from extra identity preservation?

Identity preservation means that we can assure the customer that the crop has maintained its unique identity. In particular, customers who have concerns about GM products can have the confidence of knowing exactly what they are buying.

Extra identity preservation means that GM and non-GM grains can coexist throughout the grain supply chain in Australia. This helps farmers by giving them the choice to grow the crops that suit them best. Farmers can benefit if higher prices are being offered for certified non-GM grains.

### What does identity preservation involve?

Australia has successfully implemented identity preservation with conventional grains such as durum wheat and malting barley. So although identity preservation with GM grains will involve some new challenges, this appears to be an issue that the Australian grain industry can take in its stride.

### What will identity preservation cost? ... on the farm?

Identity preservation arrangements can mean higher costs resulting from:

- the need for certified planting seed (guaranteeing that the unintended presence of GM materials does not exceed specified levels)
- various crop management techniques, including appropriate separation distances between crops and control of 'volunteer' (self-sown) growth
- cleaning after harvesting, handling, storing and transporting GM grain types.

### ... in the central bulk handling system?

Identity preservation is likely to occur mainly in the central grains handling and storage system. Additional costs may arise here for two main reasons:

- the additional time taken switching between different grains. This increases growers' queuing times at the central receival sites and affects on-farm costs. This may be through an increased possibility of rain damage arising from delays to harvest, for example, or through increased on-farm storage to avoid holding up the harvest. The lengthening of the receival period adds to the costs of the bulk handlers.
- the possible requirement for testing for the presence of GM material.

Economic modelling suggests that the increased costs borne by farmers from identity preservation of non-GM canola would be modest and manageable. On average, around 85 per cent of these additional costs were on-farm costs in the form of greater certified seed costs and the costs associated with higher labour requirements with double handling of grain and with cleaning farm machinery.

If GM canola was introduced in Australia, case studies suggest that additional costs to producers of identity-preserved non-GM canola would average 4-6 per cent of their farm gate canola price in a typical year.

