



Delivering market choice with GM crops

*An industry framework developed on behalf of the
Australian Grain Industry by the Grain Trade Australia
Plant Breeding Innovation Committee*
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Executive Summary

The Australian grains industry has the capacity to deliver and manage the commercial introduction of crops derived from biotechnology.

The Market Choice Framework is targeted at ensuring the commercial introduction of GM¹ crops is undertaken in a manner that:

- Maintains or enhances trade in the Australian grains industry
- Enables market choice along the supply chain, while being consistent with bulk handling systems and manufacturing practices
- Is open and transparent
- Provides confidence to all stakeholders, particularly to customers, consumers and governments in relation to the certainty and viability of supply to participants along the supply chain

The capacity and capability required for implementation will be provided by industry stewardship programs, commercial practices, processes and protocols that address marketing and technical requirements, import and export requirements and supply chain mechanisms.

These measures will provide the necessary certainty and confidence to supply chain participants, consumers and governments that GM crops and their products will be managed to meet market and customer requirements. Importantly, these measures will provide market choice.

The Market Choice Framework supports the implementation of coexistence, that is, the concurrent production of conventional, organic, IP (identity preserved) and GM crops consistent with supply chain preferences. The Australian grains industry has adopted a “Market Choice” approach to enable choice for consumers, producers and the supply chain.

The Market Choice Framework is about ensuring that GM crops approved by the Gene Technology Regulator in Australia, are commercialised in a manner that allows market requirements to be met for commodity comingled (i.e. GM + Non-GM) markets and specialised non GM markets.

The Market Choice Framework has been compiled by Grain Trade Australia (GTA) for the Australian grains industry and major stakeholders have endorsed this document as an appropriate strategy to deliver market choice.

The Market Choice Framework is to be applied to any GM crop that has been approved for commercial release by the Office Gene Technology Regulator (OGTR) and the specific requirements agreed by supply chain stakeholders on a case by case basis.



¹ GM crops include those crops regulated by the OGTR

Introduction

There is broad recognition within the Australian grains industry that gene technology and new breeding technologies have the potential to play a major role in meeting the demands of food, feed and industrial consumers and that the industry requires competitive access to this technology in which it has made a significant investment.

The environmental, agronomic, economic and social benefits provided by GM crops, are contributing to the resolution of the rapidly increasing international demand for food, feed, fuel and fibre. GM crops continue to be incorporated into a range of farming systems and supply chains delivering food, feed and fibre to consumers around the world.

A record 189.8 million hectares of biotech crops were grown globally in 2017, up 4.7 million hectares from 2016. The global area of biotech crops has increased more than 112-fold from 1.7 million hectares in 1996 to 189.8 million hectares in 2017 making biotech crops the fastest adopted crop technology in recent times.

In 2017 24 countries planted biotech crops and an additional 43 countries imported biotech crops. Soybean, Corn, cotton and canola comprise the top four GM commodities globally. In 2017, 72% of global soybean production was GM soybeans, corn (32%), cotton (80%) and canola (30%).

Over 90 per cent of both the Australian cotton crop and around 20 per cent of the Australian canola crop is now planted to GM varieties.

Following the approval of GM canola for commercial release in Australia in 2003, the Australian grains supply chain examined and identified supply chain management processes to manage GM canola and developed “Delivering Market Choice with GM Canola”.

This Framework forms a strong foundation for review of processes to manage the commercial release of future GM crops that will generate products that will be utilised domestically and in export markets.

The capacity to deliver market choice is built on the comprehensive and world-class protocols and processes that already operate in the Australian grains industry to enable grains and grain products to meet regulatory and customer specifications. These protocols and processes provide the necessary product integrity that provides confidence to consumers and governments.

The objectives of the Market Choice Framework are to:

- minimise disruptions to the supply chain and trade while protecting the health and safety of humans and the environment
- facilitate an effective and efficient risk-based approach to managing supply chain and trade risks while meeting customer requirements
- provide transparency and predictability for supply chain participants, most notably importers and exporters

The Market Choice Framework is targeted at ensuring the commercial introduction of future GM crops is undertaken in a manner that:

- Maintains or enhances trade in Australian grains
- Enables market choice along the supply chain, while being consistent with bulk handling systems and manufacturing practices
- Is open and transparent
- Provides confidence to all stakeholders, particularly to customers, consumers and governments including supporting viability of supply certainty to operators

This document provides the framework for the industry to assess market/trade implications associated with the new GM crop and ensure that the industry has the necessary processes and policies in place to deliver and manage the commercial introduction of the target GM crop.

Market choice – the requirements

The Market Choice Framework is developed against the background of products having been deregulated by the OGTR and therefore have been found to comply with human health & environmental safety regulations and food safety regulations.

The Framework encompasses the elements that the industry has identified as necessary for introduction of a GM crop in a manner that will be least disruptive to the Australian grain supply chain including stewardship, domestic and international regulatory requirements and processes for managing planting seed and grain along the supply chain where GM and non GM products coexist.

Three key elements in the delivery of market choice are the ability of any supply chain participant to:

- Source product that meets a pre-determined set of specifications
- Supply product that meets a pre-determined set of specifications
- Manage their area of the production, processing, manufacturing and delivery of product to a pre-determined set of specifications

The work undertaken through GTA and its Plant Breeding Innovation Committee has identified and confirmed the grains industry supply chain's ability to deliver market choice requirements through the combination of commercial protocols, processes and practices that are either already in place, or can be put in place (**Attachment 1**).

The implementation of these supply chain systems provide the capacity and capability for industry to maintain or enhance trade in Australian grains and their products, and operate in an open and transparent manner.

They will also provide confidence to all stakeholders, particularly to customers, consumers and governments.

The Market Choice Framework developed in 2007 for GM canola identified five market choice criteria to evaluate GM canola against and provide assurance that the GM canola meets the requirements for market choice.

This broader document that presents the industry's Market Choice Framework for all GM grain and seed crops is built on a set of market choice criteria, namely pre-commercial release requirements for:

- Confirmation of Australian approvals
- Market assessment (customer requirements for choice)
- Market risk assessment & approvals
- Market risk mitigation (Low Level Presence/ Adventitious Presence)
- Market risk management protocols (stewardship)
- A Unintended Presence contingency plan

These criteria are described on page 5.

These criteria will be applied by the Industry via GTA to review the readiness of the industry prior to the commercial release of new GM crops in Australia. The review will involve a broad range of stakeholders from across the grains supply chain working together to apply the market choice framework to the crop/trait approved by the OGTR. While the Framework would not be applied until all Australian approvals are in place, technology companies are encouraged to work with the grains supply chain ahead of approval in regard to applying the Framework to the target crop.



GM crops – the criteria

The Australian grains industry encourages companies bringing approved GM crops to market to utilise the market choice criteria as a guidance framework for ensuring that commercialisation of the approved GM varieties enter the nominated supply chain in a manner that minimises disruption and maintains choice.

Approved GM crops are another product within the grains industry supply chain that will be managed according to pre-determined customer and/or regulatory specifications.

The Australian grains industry has demonstrated its capacity and capability to manage seed and grain, including GM crops, to meet customer and consumer demands.

Agriculture occurs in nature and thus, the Australian and global grain industry supply chains routinely produce and handle variations based around product attributes such as quality (e.g. protein % or oil %), and/or other factors which may impact on product quality.

This may be issues such as product variation (e.g. pests, foreign materials, weed seeds), or specialist varieties with specific end uses and/or customer traceability requirements such as the EU sustainability.

The industry has developed and successfully managed the supply chain infrastructure and handling systems that ensure the delivery of products to meet customer specifications and, where required, identity preservation of products and/or varieties from plant breeding through to the producer, onto processor and consumer.

The grains industry recognises that the technology sector has developed comprehensive stewardship program e.g. Excellence through Stewardship and that this provides an excellence program for delivering stewardship as identified by this Framework.



Market Choice Framework

Framework Element	Requirements
1 Australian Approval	Approval granted by OGTR (Human Health Safety and Environment) and if required FSANZ (Food Safety) and APVMA (Pesticide Use)
2 Market Assessment (Customer requirements for choice)	<p>A market assessment to identify key countries of import and their food, feed and environment related regulatory requirements</p> <p>If required, implementation of appropriate processes to manage the GM crop introduction so that choice of production methods and purpose or use (e.g., specialty, identity preservation, commodity) for that crop are available and preserved</p> <p>Identification of risk factors i.e. if a trait has functionally different output properties that make its presence in the general commodity stream inappropriate above certain threshold levels</p> <p>Outcomes of the market & risk assessment used to inform and guide the development of an appropriate stewardship program designed to prevent biotech traits from becoming present in the general commodity stream if their presence would disrupt export or domestic markets</p>
3 Market Risk Assessment & Approvals	<p>GM crops should not be released until regulatory approval has been obtained in all major international markets (identified in the market assessment) for bulk grains and food products, assuming these major markets have functional approval processes in place</p> <p>Conduct a market assessment to identify key countries of production and import prior to the commercialisation of any new GM crop and the GTA Plant Breeding Innovation Committee agree with the supply chain where FFP approvals are required</p>
4 Market Risk Mitigation (Low Level Presence (LLP) Thresholds (note Adventitious Presence (AP) has a zero threshold))	<p>Reasonable thresholds adopted to allow the movement of grains with low level presence – zero thresholds are not feasible for bulk commodity movement of products</p> <p>While a global solution to LLP is still being developed, the technology developer in conjunction with the industry should determine a threshold level at which it is inappropriate for such traits to be present in the general commodity stream because of potential adverse market access and/or food/feed safety or functionality impacts</p> <p>Thresholds should apply to grain and planting seed</p>
5 Market risk management (Stewardship)	<p>The technology provider, in conjunction with the industry, develop and implement stewardship programs that are appropriate for the nominated GM crop. The stewardship program to be sufficient to prevent it from becoming present above established threshold levels in the non-GM stream²</p> <p>If required, supply chain participants develop and implement standards and processes that prevent a GM crop from becoming present above established threshold levels in the non-GM stream</p> <p>Technology providers should make available prior to commercialisation a reliable detection method or test for use by the supply chain that enables identity verification of the GM crop for its intended use and supply chain</p> <p>If required, supply chain participants develop and implement closed loop/identity preserved supply chains (e.g. customer demand, lack of approvals, opportunity to create value, etc.)</p>
6 Unintended Presence (UP) Contingency Plan	<p>The technology provider, in conjunction with the industry, develop a contingency plan to be implemented if a GM crop/event approved in an exporting country, but not yet in Australia, is identified as a UP event in Australia</p> <p>The UP contingency plan should include management and communications strategies which integrates regulatory agencies, the grains/planting seed industries and individual participants affected by the UP event</p>

² This may include recognised programs such as Excellence through Stewardship

Industry ability to deliver market choice

Globally, agricultural commodities are being increasingly differentiated in response to a range of drivers – product safety, consumer preference, product traits, process traits and government regulation.

The Australian grains industry's supply chains are flexible and have the required capacity and capability for existing or new processes to:

- enable GM and non-GM crops to co-exist
- use a semi-integrated system, or
- provide separate supply chains and infrastructure.

The grains supply chain already has protocols, processes and practices available to deliver market choice. Currently, these processes are applied in the growing, transporting, marketing and processing of special malting barley, noodle wheat, canola, sunflower, safflower and maize varieties in Australia. An agreed and comprehensive dataset of measurable standards to specify varietal quality characteristics and parameters is applied along the supply chain as the basis of trade.

The supply chain management processes are driven by standards, quality management procedures, stewardship programs and commercial contractual arrangements.

These support the trade of grain to meet pre-determined industry standards, customer specifications and regulatory requirements at critical points along the supply chain.

The quality management procedures in place vary from formal systems such as those based on Hazard Analysis Critical Control Point (HACCP) and International Organization of Standardization (ISO) through to proprietary systems, industry codes of practices and best agricultural or manufacturing practice. The focus on quality management through the supply chain ensures that the requirements of suppliers and receivers are understood and met, and form part of the verification process.

The industry has a range of stewardship programs and codes of practice or conduct in place or which can be applied to commercial production of GM crops.

These enable sharing of relevant information and consultation for the seamless movement of product into and along the supply chain and, where and when appropriate, the management of non-compliance.

The overarching documents for the industry are the GTA Management of Grain within the Australian Grain Supply Chain: Australian Grain Industry – Code of Practice and the ASF National Code of Practice for Seed Labelling and Marketing. The purpose of these Codes of Practice (Code) are to describe practices that the seed and grain industry use to ensure Australian seed, grain and grain products meet domestic or export customer requirements. Customer requirements include those stipulated in contracts and regulatory requirements at the Australian state, territory and Federal levels and international and overseas country level. There are also a range of industry standards that are covered under this Code.

Commercial contractual arrangements underpin supply chain operations and management. GTA contracts and trade rules are the accepted and recognised basis for facilitating commercial grain trading activity. The GTA contracts and trade rules are currently used in the trading of GM canola and will be used for future GM crops. In addition, there are established contractual procedures between storage and handling operators and marketers, between transport operators and industry participants, and in relation to GM crops there will be contracts between technology developers, seed companies and growers.

These contractual arrangements articulate the responsibilities and obligations of the respective parties and provide a basis for recourse in the event of non-compliance or breach of contract.

Market choice – strong industry support

The Australian grains industry has relied on the adoption of innovation to secure its global competitiveness. The industry needs continued access to new technology to remain at the forefront.

GM crops have been grown for over two decades around the world and numerous studies have proven the environmental, agronomic, economic and social benefits derived from these new technologies and varieties go beyond grain supply chains.

Australia has a strong global reputation of delivering quality grain products that meet customer specifications and a solid track-record of ensuring that the requirements of both domestic and export customers are met.

The industry recognises that not all supply chain participants may choose to adopt GM crops or the resultant grain, and hence, the supply chain must be in a position to offer and provide choice at all times in order to maximise opportunities for all supply chain participants.

The industry also recognises the potential for trade disruptions to occur with GM crops given the rapid growth in the global adoption of biotech crop and the unharmonised regulatory environment that exists globally. Support for the Market Choice Framework from all parties from technology proponents, plant breeders onto producers and through to exporters/domestic customers will ensure the Australian grains industry minimizes risks and maximizes opportunities offered by biotechnology and plant breeding innovations.

The Australian grain industry has demonstrated that it can manage GM crops through the successful introduction and commercial production of GM canola and GM cotton.

The industry will utilise the experience and learnings from Delivering Market Choice with GM Canola to support the introduction of future approved GM crops.



Attachment 1

Reference Documents

- GTA Code of Practice and Technical Guidance documents <http://www.graintrade.org.au/grain-industry-code-practice> and <http://www.graintrade.org.au/grain-industry-code-practice/gta-technical-guidelines>
- Growing Australian Grain <https://grainsguide.grainproducers.com.au>
- ASF National Code of Practice for Seed Labelling and Marketing www.asf.asn.au/code-of-practice/



