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Impact of Food Safety/Traceability upon Commodity Trade

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Introduction

The issue of food safety is an issue across the entire world grain supply chain. When considering the impacts of food safety the focus tends to be on human health and well being. Food safety is an issue for consumers within the intensive livestock industry as well.

Whilst the major grain exporting countries are fiercely competitive, on the issue of food safety a cooperative approach would be to our collective benefit. An adverse occurrence in regards to food safety with an importing country or a new market opportunity could result in alternative products being sourced from outside the obvious suppliers.

This paper will consider the issue of food safety and draw on some experiences within the Australian grain industry.

Issues to be considered:

- Grain production and the Australian supply chain
- The Need for Food Safety
- Australian Initiatives to ensure "Safe Food"
 - Storage & Handling Infrastructure
 - Receival point - monitoring programs
 - Australian Government Residue Monitoring programs
 - Quality Assurance across the food supply chain
 - GM Technologies
 - Food Chain Assurance Advisory Group

Where does NACMA fit?

NACMA was formed in 1991 to standardise grain standards, trade rules and grain contracts across the Australian grain industry to enable the efficient facilitation of trade across the grain supply chain.

NACMA has over 300 member organisations ranging from regional family businesses to large national and international trading/storage and handling companies. Members include the major companies/organisations operating in all sectors of the grain industry in Australia.

- grain production;
- grain storage and handling;
- domestic grain trading;
- export grain trading;
- domestic end users of grain; and
- organisations involved in related commercial activities such as financial (banking, stock exchanges etc), communications, grain advisory services, and professional services (eg solicitors and accountants).

The members of NACMA are responsible for over 95% of all grain storage and freight movements made each year in Australia. Over 90% of the grain contracts executed in Australia each year refer to NACMA grain standards and/or trade rules.

Production and the Australian supply chain – a summary

Major points:

- Production is around 34 million tonnes (down to 19 mt in 2002), coarse grains (10 mt), wheat (20 mt) oilseeds (2.5 mt) and pulses (1.5 mt). Domestic requirement is around 10 million tonnes – this requirement has grown substantially over the last 10 years with increases in intensive livestock production particularly chicken, pork and cattle feedlots.
- Exports of around 20 million tonnes of which approximately 15 million tonnes is wheat.
- The storage and handling operations for the majority of exports are handled through 4 major bulk handling companies who control 675 receival points and 20 export ports.
- Australian grain exporters (around 25) consist of Australian based companies both large and small, the major bulk handlers and major international grain trading companies.
- Australia is the sixth largest exporter of unprocessed food in the world and the fourteenth largest exporter of processed food.

The Need for Food Safety

You can summarise the importance of food safety to any organisation involved in the grains business either as a grain producer, trader, storage operator or processor in one word - survival.

“Yet another cost” some grain industry participants call out, particularly from a producer perspective, who will then inevitably ask “will I get paid more”.

However, doing nothing is not an alternative. There have been prior issues. Export of Australian foods has been halted, from time to time, when an overseas customer has found an unacceptable level of an agricultural or veterinary chemical in a food. For instance, meat destined for the Japanese market was found to contain unacceptable levels of an insecticide used on cotton crops. During a drought year the cattle were subsequently fed the cotton trash. This incident jeopardised beef exports to Japan and affected domestic confidence in meat and highlights the cost of an “incident”.

The Opportunity

Increasing consumer awareness of the foods they eat and their perceptions of “safe” presents the Australian grain industry with a marvelous opportunity to be able to differentiate our product in an increasingly competitive global grain market. This is critical for Australia due to our dependence on export markets for grain and value added products such as feedlot meat.

However, there are emerging markets to consider. Take for example the pharmaceutical industry – can you image this sector being at all interested in your product if you did not have an independently audited accredited HACCP based food safety program.

Australian initiatives to ensure Safe Food

On Farm

On - farm QA programs conducted in Australia are HACCP based and hence are firmly focussed on food safety initiatives. These programs are aligned to requirements for the bulk and specialty markets. The BHC’s will provide segregations for product destined for various specialty markets.

Storage and Handling Infrastructure

Most of the cereal crop is stored by the major Bulk Handling Companies (BHCs) who own and operate the storage infrastructure into which most of the Australian grain crop is delivered immediately after harvest. The Central Storage System is markedly different to post-harvest storage systems in most other countries due to this concentration of ownership.

One advantage this concentration of ownership confers is that export shipments or deliveries to major domestic end users will more than likely be sourced from one BHC, therefore the grain delivered will have been subjected to one QA program, i.e. the quality of the grain delivered will be predictable.

Monitoring Programs

Individual Bulk Handling Companies undertake quality assurance procedures, which include having grain samples analysed to ensure that pesticide residues are within appropriate levels at the receival point from the grain producer, during the storage period, and prior to outturn.

Every load of grain tendered for delivery by a producer is sampled on an individual load basis and once it has passed the appropriate tests and accepted is labeled to allow trace-back into 500 tonne "Grade" samples.

These samples are sealed and collected daily from sites and then analysed at central laboratories during harvest. If there is an issue the offending tonnage and suppliers are traced, the product quarantined and producers notified and appropriate action initiated.

BHCs are moving to retaining reference samples for each load which will allow traceability to the paddock of production.

Samples collected by the Bulk Handling Companies are part of their Quality Assurance and/or contractual obligations. Separate samples are collected under the Government National Residue Survey Program, thus providing an additional check on MRL compliance.

National Residue Survey

The National Residue Survey (NRS) is part of the Australian Government Department of Agriculture, Fisheries and Forestry. The NRS also monitors chemical residues in meat, horticultural products and fish produced in Australia.

The NRS operates as a government-based independent arbiter of the residue integrity of Australian grain and is funded by a 0.015% farm gate value levy on monitored grains. The commodities monitored in the NRS Grains Program are wheat (including the flour and bran), barley, oat, sorghum, field pea, chickpea, lupin and canola.

NRS tests:

1. every hatch of every export shipment of grain is sampled at terminals as ships are loaded. Each sample is collected by accredited NRS sampling staff, usually using automatic sampling equipment.
2. Grain samples from companies exporting grain in containers either in bulk form or bags.
3. Domestically traded grain sampled at BHCs, stockfeed manufacturers, feedlots, maltsters, oat processors and oilseed crushers. Samples of wheat, flour and bran are also collected from flour mills throughout Australia.

NRS tests for a wide range of chemicals. These include the registered grain protectants used against insect infestation in storage and about 40 in-crop agricultural chemicals such as fungicides, insecticides and herbicides. . NRS also monitors for environmental contaminants such as heavy metals and persistent organochlorines, which are no longer used in agriculture.

The consolidated information in the following table has been provided by the NRS, and relates to 5866 samples collected and analysed for residues for the period July 2004 to June 2005. It records compliance with the Australian Food Standards MRLs

Program	% Compliance
Bulk Export Grains	99.9%
Export Container	100%

The results above demonstrate that a combination of the residue testing program and comprehensive industry Quality Assurance activities has promoted continuous improvements in adherence to Good Agricultural Practice. These efforts have proven very effective in supporting Australia's excellent record of exporting grain which meets international food standards and import tolerances.

Quality Assurance across the food supply sectors

Food safety issues have led to development of HACCP programs in the various sectors of the supply chain though these programs have tended to be developed in isolation. This situation has changed, particularly over the last 12 months, with recognition by the industry that the programs need to have seamless exit and entry levels to ensure links between the programs. An excellent example of this collaboration is the link between the BHCs programs and FeedSafe - the HACCP program conducted by the Stock Feed Manufacturers' Council of Australia.

The development of these links between the HACCP programs across the supply chain allows for a complete supply chain from paddock to plate and if an issue is detected in one part of the link, then traceability back down the chain and reference to keeper samples identifies where the problem resides.

Grains Research & Development Corporation (GRDC)

GRDC is a producer funded statutory organisation devoted to grains industry research from paddock to end user. GRDC has an annual budget of CAD 100 million for pan Australian research which covers the grain supply chain.

The increasing recognition of food safety in relation to the Australian grain industry is demonstrated by the move of GRDC to become a member of the newly established Australian Food Safety Centre of Excellence. Whilst the actual food safety risks in the grains industry are deemed to be low, based on current activities such as the National Residue Survey, it is essential for the industry to manage domestic and international perceptions of risk in order to maintain and enhance market access.

GM Technologies

GM falls very much into the perception camp with strong support for the introduction of GM technologies from producer groups who are squaring off against the various state governments who have introduced bans on the commercial cultivation of GM crops. It is reasonable to say the political decisions are emotionally based and 'politically correct' rather than science based. These bans have various time limits but will generally be up for review within the next 2 years.

Interestingly, the state governments at the end of 2005, agreed to a limit of 0.9% for the adventitious presence of GM canola in commercial canola.

As an aside Australia uses vegetable oil sourced from GM cottonseed.

Food Chain Assurance Advisory group

In 2003, the Australian Government established a forum for owners and operators of critical infrastructure to work together to share information on security issues which affect critical infrastructure. It is made up of a number of different business sectors such as banking, water and the food chain.

The Food Chain Assurance Advisory Group has been tasked to improve the security of our agriculture and food supply chain in the changed global security environment. Australia's HACCP-based food safety and security systems and our food regulatory arrangements are primarily aimed at preventing and detecting natural or accidental risks. The new challenge is to ensure these systems are now capable of responding to the new increased potential for acts of deliberate and malicious intervention in the food supply.

This initiative is another example of Australia's determination to protect the food supply chain for consumers be they Australian or just as importantly consumers in a food importing country.

The Future

Food safety is all about retaining the confidence of consumers that the product they are prepared to purchase is safe for the intended purpose. The Australia grain industry has an enviable record in world and domestic markets on this issue.

However, more needs to be done to retain these markets and attract new ones in the face of increased competition from traditional and emerging competitors. QA programs underpinning food safety at a grain producer level needs to be a key priority.

The focus must continually be pushed wider to ensure that potential factors that could affect food safety and then by implication the viability of the Australian grain trade are considered. The industry to date has demonstrated preparedness for this to occur.

Many thanks for the opportunity to share the Australian experience on this matter.

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