

**HOUSE OF REPRESENTATIVES STANDING COMMITTEE
ON PRIMARY INDUSTRIES AND REGIONAL SERVICES**

**INQUIRY INTO PRIMARY PRODUCERS ACCESS TO GENE
TECHNOLOGY**

JULY 1999

Submission by

AWB Limited

Executive Summary

The AWB Group, comprising AWB Limited and its wholly owned subsidiaries, is Australia's major national and international grain marketing organisation and Australia's third largest exporter with annual sales revenue of around \$4 billion. Sales by AWB contribute around 4 percent to the total value Australia's exports and on average, 15.5 percent of Australia's total farm exports.

Australia is one of the five major wheat exporters in the world. Although a small country producing only around 3 percent of the world's total wheat production, we are responsible for around 15 percent of the world's wheat trade.

Although AWB is one of Australia's largest exporters, AWB is also a significant marketer of wheat and other grains to the human consumption and stockfeed domestic Australian market. In addition, AWB is involved in the import of grains and processed plant products with the potential to be derived from genetically modified material.

Within this context, AWB has strong views on the emerging issue of Biotechnology and Genetically Modified Organisms (GMO).

Continued growth in global population and urbansiation are likely, in the longer term, to lead to a significant increase in demand and consumption of grains and particularly wheat.

The use of biotechnology and gene technology presents us with the opportunity to address this challenge but also improve environmental and economic outcomes. The expectation for this technology is that there will be significant yield increases while at the same time providing the opportunity for sustainable agricultural practice through the development of alternative means for managing pests, weeds and diseases thereby reducing the risk of crop losses and financial hardship.

The development of biotechnology and gene technology, and importantly its treatment in the scientific, trade and social context, will be crucial to how the world responds to growing demand pressures.

In this context, it is critical that there is a distinction made between what is considered low perceived public risk gene technology - or widely accepted gene technology, and that which is perceived to be of a higher public risk - a clear differentiation between the degrees of manipulation.

Plant breeding has long been about changing the genetic make up of varieties and has been a feature of the grain industry for over a thousand years as farmers have worked to breed better varieties for their individual conditions and refine and improve their crop. The major advantage of the adoption of improved gene technology is that it accelerates the plant breeding process allowing many of the traditional steps to be "leap frogged". This has obvious commercial and social implications in that new, improved, varieties can be introduced into the market quicker using less resources.

Whilst the use of this type of technology would, under industry definitions, be classified as a GMO, AWB believes that the outcomes of these techniques would not be perceived as a high public risk by consumers and, hence, would be considered as acceptable and responsible use of the technology.

AWB would submit that gene technology which covers the areas of "within plant species" and "between plant species" are natural extensions of planting breeding programs and utilise extremely tried, tested and stable technology. Therefore, they should be recognised as low risk and publicly acceptable forms of GMO products.

There is no doubt that, globally, in the past three to four years we have witnessed rapid advances in technology associated with biotechnology and the production of food utilising GMOs. This rapid progress has required Australia to quickly develop a stance on the use of gene technology and work towards the setting of appropriate standards.

Whilst there are no grains marketed by AWB which are produced by GMO means, there are several projects currently underway by Australian researchers. A technique to identify genes responsible for resistance to rusts, nematodes and bacterial diseases has been developed.

AWB supports the use of new technologies and processes which enhance the safe, efficient and sustainable production of wheat and other grains. AWB would consider marketing wheat and other grains derived from genetic technology providing that the grain has been produced taking into account ethical considerations, environmental concerns and any Australian or importing country's government regulations and in accordance with there being demand for these products.

Should importing country's regulations require notification that the grain may have been produced using GMO technology, AWB would advise the importer accordingly. Likewise, if GMO grain was required to be segregated, AWB would segregate that grain. However, the commercial cost impositions of such a requirement may prohibit AWB trade in such a market.

As a major exporter of Australian grains, AWB will only export grain which meets both export customer and Australian domestic standards. It would be extremely difficult for AWB to market grains on the export market produced by genetically modified means if there are no clear guidelines on their production and appropriate standards set in Australia. To this end, AWB supports the introduction of a package of measures designed to provide uniform and comprehensive regulation of gene technology in Australia.

At this early stage in the development of policies globally on the use of GMOs, there still remains a tremendous number of variables in determining how extensive GMOs products will be used. However, Australia and AWB cannot afford to ignore the very real prospect that GMO technology may become a mainstream product with broad and general acceptance amongst consumers.

Many of the large agrichemical companies such as Monsanto, have long recognised the potential value of gene technology and are investing heavily in both research and acquisition. Without access to the intellectual property being generated by these companies, Australia may be left behind in the gene technology race.

The other side of this equation is whether Australia would be able to compete in the international market place without access to GMO products. The answer to this is subjective and heavily dependent on the general acceptance or otherwise of gene technology as a mainstream product. However, if wide acceptance of these products does occur, not having access to GMO products would put Australian growers at a significant disadvantage to their international competitors who would be able to benefit from any yield, productivity and/or cost to produce advantages associated with using such products.

AWB has recognised the need to be a participant in this area of agribusiness and, in April 1999 announced its participation in a strategic alliance involving three of Australia's leading agricultural organisations - AWB Limited, CSIRO and the Grains Research and Development Corporation (GRDC). The joint venture project - called Graingene - aims to generate innovative intellectual property and new generation plant biotechnology research for the Australian grains industry and create commercialisation opportunities for Australian grain and enhance Australia's investment capability in new technologies.

There are clearly many public perceptions regarding the safety and labeling of foods produced by genetically modified means. AWB strongly supports a public awareness and education process in Australia to fully explain to consumers all issues surrounding the use of such technology.

The concerns consumers may have with GMO products are understandable and, in some cases, completely legitimate as they deal with human health safety. However, emotive arguments cannot be allowed to hijack the debate. It is absolutely critical that the issue of GMOs is debated in a rational manner and that the burden of proof of safety rest with the promoters of the product - not with the consumer to prove the health hazard.

The high profile attributed to this debate to date will almost guarantee that it will also have a high profile in the forthcoming World Trade Organization (WTO) multilateral trade negotiations on agriculture.

AWB would strongly urge the Government to resist any proposals which would result in disguised restrictions on trade, or the inclusion of provisions which would constrain the movement of products containing GMOs on grounds other than sound science.

Any measures to deal with biotechnology and GMOs should conform to established rules and practices of the WTO and should complement, rather than hinder, further trade liberalisation. We would submit that it is important to distinguish between rules which govern trade and responses to the demands of consumers.

1. Introduction

The AWB Group comprising AWB Limited and its wholly owned subsidiaries is Australia's major national and international grain marketing organisation and Australia's third largest exporter with annual sales revenue of around \$4 billion. We market and sell Australian grain on behalf of Australia's 45,000 wheat growers to more than 70 countries and 100 individual customers. Sales by AWB single-handedly contribute around 4 percent to the total value Australia's exports and on average, 15.5 percent of Australia's total farm exports.

In 1997/98 we were the second largest exporter of wheat in the world (see Table 1) and the company made a significant contribution to the Australian community through its generation of wealth and employment as outlined in Table 2 below.

AWB completed its transition from a statutory marketing authority to a grower-owned and controlled company operating under Australian Corporations Law with operating subsidiaries.

- AWB Limited is responsible for the provision of all shared business and corporate.
- AWB Finance Limited provides financial service products to pool growers by way of underwriting pool returns and loans and also providing working capital finance for AWB (International) Limited.
- AWB (International) Limited is responsible for the wheat export pools and will be focused on maximising pool returns.
- AWB (Australia) Limited is responsible for domestic wheat and other grain trading as well as the export of other grains.

Table 1: Wheat Production and Trade

	Production		Trade	
	1997	1998	1997	1998
European Union	94.7	103.8	13.1	15.0
United States	67.5	69.4	28.0	29.5
Australia	18.6	23.4	15.1	16.0
Canada	24.3	24.4	21.1	15.0
Argentina	14.8	10.7	9.6	7.5

Source: IGC, AWB

Table 2: AWB's Value Added Contribution

	1996-97	1997-98
Remuneration to employees and contractors	31,220	34,863
Interest to financial institutions	120,470	110,884
Reinvestment in business	5,060	9,003
Payments to growers	3,361,876	2,662,947
Contribution to storage, handling, transport industry	787,770	621,258
Payments to government	3,113	3,056
Total (\$'000)	4,309,509	3,442,011

Under AWB Limited's Constitution (Article 2.3) the objectives of the company are:

“...the undertaking of Grain Trading activities and investments (whether directly or through subsidiaries) with a view:

- a. in relation to wheat growers who sell pool return wheat to the company or its subsidiaries, to maximise their net returns from the pools by securing, developing and maintaining markets for wheat and wheat products and by minimising costs as far as practicable;
- b. in relation to grain growers and especially wheat growers by participating in a commercial manner, in the market for grain and grain products, to provide them with a choice of marketing options; and
- c. in relation to grain growers generally, to participate in providing services to or for them.”

2. Australia’s Position in the Global Wheat Market

Table 1 above, briefly summarises Australia’s position in the global wheat market compared to the other major exporters for the 1996/97 and 1997/98 seasons. Australia is one of the five major wheat exporters in the world. Although a small country producing only around 3 percent of the world’s total wheat production, we are responsible for around 15 percent of the world’s wheat trade. On average, just over 100 million tonnes of wheat is traded each year and (on a five year average) Australia contributes on average between 16-19 million tonnes to this trade. Around 85 per cent of all wheat produced in Australia is exported.

Although AWB is one of Australia’s largest exporters, AWB is also a significant marketer of wheat and other grains to the human consumption and stockfeed domestic Australian market. In addition, AWB is involved in the import of grains and processed plant products with the potential to be derived from genetically modified material.

Within this context, AWB has considered views on the emerging issue of Biotechnology and Genetically Modified Organisms (GMOs).

3. Value and Importance of Biotechnology and Gene Technology

World Bank studies have concluded that the population of low and middle-income countries will continue to grow and that while rates of growth will decline, the absolute increases will be large. To put this into some perspective, between 1997 and 2010, the World Bank has forecast an average annual population growth rate for Indonesia of 1.6%; South Korea 1.5%; Malaysia 2.1%; the Philippines 2.3%; and Thailand 1%. This compares to 0.06% and 0.5% for the UK and US respectively over the same period.

Likewise, while only 3 in 10 of the world’s population lived in urban areas in 1950, 6 in 10 will by 2030 - a trend that is increasingly be driven by urbanisation in Asia. World Bank statistics show that from 1980 to 1997 the urban population in Indonesia increased from 22% to 37%; in Malaysia from 42% to 55%; in the Philippines from 37% to 56%; and in Thailand from 17% to 21%.

The combination of these factors is likely, in the longer term, to lead to a significant increase in demand and consumption of grains and particularly wheat. AWB estimates that by 2020 total wheat consumption will be in excess of 810 million tonnes - an increase of some 38% on current consumption levels of 587 million tonnes. China’s consumption of wheat alone is forecast to increase by 25% over the same period to 146 million tonnes

With limited global resources and finite arable land, the question in the longer term then becomes can exporters meet the demand for the product and do so at an affordable price?

The use of biotechnology and gene technology presents us with the opportunity to address this challenge but also improve environmental and economic outcomes. The expectation for this technology is that there will be significant yield increases as these new technologies enable researchers to break through existing performance barriers. At the same time, the new technologies will provide the opportunity for sustainable agricultural practice through the development of alternative means for managing pests, weeds and diseases thereby reducing the risk of crop losses and financial hardship.

4. Differentiating between Degrees of Genetic Manipulation

With growing population and consumption and finite land and financial resources the issue then becomes producing more with existing resources. The development of biotechnology and gene technology, and importantly its treatment in the scientific, trade and social context, will be crucial to how the world responds to these demand and consumption pressures.

However, it is absolutely critical there is a distinction made between what is considered low perceived public risk gene technology - or general accepted technology - and that which is perceived to be of a higher public risk. There is a worrying trend in the current debate to bundle all biotechnology work under the one umbrella of "gene technology" or "genetic modification" and label it as a high risk product. Contrary to this, it is important, however, to clearly differentiate between the degrees of manipulation.

Plant breeding has long been about changing the genetic make up of varieties, in one form or another, and has been a feature of the grain industry for over a thousand years as farmers have worked to breed better varieties for their individual conditions and refine and improve their crop. Traditionally, through a process of cross breeding varieties and selections, farmers and scientists have been able to breed better, more adaptable varieties and improve output and disease resistance. However, by its very nature, plant breeding processes are resource and time intensive.

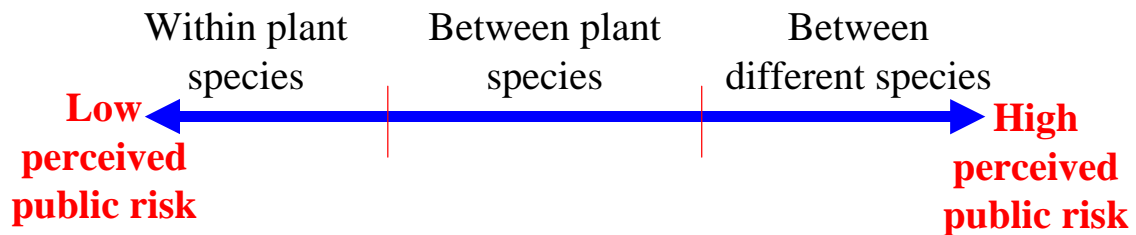
The tremendous advantage of the adoption of gene technology is that it accelerates the plant breeding process allowing many of the traditional steps to be "leap frogged". This has obviously commercial and social implications in that new, improved, varieties can be introduced into the market quicker using potentially fewer resources.

For example, the disease Cereal Cyst Nematode effects the root systems of plants and costs approximately A\$26 million in both management costs and loss of crop. This disease is regulated by a complex of about four genes in wheat and, using traditional breeding methods, takes at least 12 years to incorporate good resistance into a new wheat variety. These four genes have now been identified and through a combination of traditional breeding techniques and biotechnology, the breeding cycle may be reduced to as little as five years.

Whilst the creation of this resistant wheat variety through biotechnology would, under industry definitions, be classified as a GMO (despite utilising a gene which has been in wheat varieties for sometime and was originally transferred from rye through traditional plant breeding methods) we believe that this product is not perceived as a high public risk by consumers and, hence, would be considered a perfectly acceptable use of the technology.

For these reasons, it is critical that a clear distinction is made between what is considered acceptable, low public risk gene technology (ie. "within plant species" or "between plant species") and the more exotic forms of gene technology (ie. "between different species") and that there is a clear separation of what constitutes low and high perceived risks.

GENE TECHNOLOGY LINE



AWB would submit that gene technology which covers the areas of “within plant species” and “ between plant species” are natural extensions of planting breeding programs and utilise extremely tried, tested and stable technology. Therefore, they should be recognised as low risk and publicly acceptable forms of GMO products. Which ever way the debate goes on the use of more exotic forms of GMOs, it is important that the public perception of what is an acceptable GMO is preserved.

5. The Biotechnology Revolution and its Use in Australia

There is no doubt that, globally, in the past three to four years we have witnessed rapid advances in technology associated with biotechnology and the production of food utilising GMOs.

This rapid progress has required Australia to quickly develop a stance on the use of gene technology and work towards the setting of appropriate standards. This process is still occurring.

Commercial application of GMO technology in Australia is relatively new and there are few products using this technology on the market. Two significant examples are the BT gene used in cotton production against insect attack and "Round-up Ready" soybeans which are being used as feed for animals and are expected to be used soon as food for direct human consumption. Other uses of this technology include leaner pigs, blue carnations, herbicide resistant cotton and lupins. Future releases include additional herbicide resistant crops, delaying senescence in flowers, improved taste of various fruit crops, manipulating crop oil content, improving digestibility of plant cellulose for animal consumption and improved starch properties of potatoes, wheat and barley.

Whilst there are no grains marketed by AWB which are produced by GMO means, there are several projects currently underway by Australian researchers. For example, a technique to identify genes responsible for resistance to rusts, nematodes and bacterial diseases has been developed. Once isolated, the genes will be transferred to other grain plants. The same technique could be used to insert genes for protein content, starch quality etc. However this technology is not expected to make commercial wheat products available within the next two years.

6. AWB Position

AWB supports the use of new technologies and processes which enhance the safe, efficient and sustainable production of wheat and other grains. AWB would consider marketing wheat and other grains derived from genetic technology providing that the grain has been produced taking into account ethical considerations, environmental concerns and any Australian or importing country's government regulations. In essence, it is AWB's customers, both domestically and abroad which, through their acceptance or rejection of GMO technologies, will drive how AWB approaches the marketing of products utilising gene technology.

Growers will make a decision to grow GMO products based on whether they believe the economic return justifies their use and will make an assessment of the value of the product and its long term value.

Internationally, in all aspects of its business, AWB is driven by the needs and requirements of its customers. This will be the same in our approach to GMO technology and products. The customer's desire to accept GMO products or require their segregation or labeling or even the certification of shipments as GMO free will dictate how AWB treats the marketing of these products.

Should importing country's regulations require notification that the grain may have been produced using GMO technology, AWB would advise the importer accordingly. Likewise, if GMO grain was required to be segregated, AWB would segregate that grain. However, the commercial cost impositions of such a requirement may prohibit AWB trade in such a market. We would not consider testing grain to determine if it were produced by genetically modified means or segregating this grain, unless there was a market requirement, premium or a market access issue.

As a major exporter of Australian grains, AWB will only export grain which meets both export customer and Australian domestic standards. It would be extremely difficult for AWB to market grains on the export market produced by genetically modified means if there are no clear guidelines on their production and appropriate standards set in Australia. To this end, AWB supports the introduction of a package of measures designed to provide uniform and comprehensive regulation of gene technology in Australia.

At this early stage in the development of policies globally on the use of GMOs, there still remains a tremendous number of variables in determining how extensively GMOs products will be used including whether there will be general consumer acceptance of these products or whether these products will be subject to onerous labeling provisions and segregation programs. However, Australia, as a nation, and AWB as a leading grain agribusiness, cannot afford to ignore the very real prospect that GMO technology may become a mainstream product with broad and general acceptance amongst consumers.

Many of the large agrichemical companies such as Monsanto and DuPont, have long recognised the potential value of gene technology and are investing heavily in both research and acquisition.

These companies are vertically integrating their businesses and acquiring small biotechnology companies, merging with others and forming alliances with each other to maximise their genetic resources. Their extensive financial resources allow these companies to rapidly identify and patent critical genes and then limit the access of their competitors. Each of the many sections that make up a gene may be covered by intellectual property rights which can be owned by a different organisation while many of the critical techniques and key enabling technologies are also covered by patents. Without access to this intellectual property, Australia may be left behind in the gene technology race.

Australian plant gene technology research is of a high international standard and in some areas is at the forefront of development. However, on a world scale, it is limited by resources at a time when major multinationals are making large investments. If Australia does not want to be relegated to the role of a dependent player, it must secure a strong position in this new and fast moving area of global agribusiness and generate intellectual property that will be sought after by these multinationals for inclusion in their own business systems. In this way Australia will be certain of access to appropriate and necessary technology.

The other side of this equation is whether Australia would be able to compete in the international market place without access to GMO products. The answer to this is subjective and heavily dependent on the general acceptance or otherwise of gene technology as a mainstream product. However, if wide acceptance of these products does occur, not having access to GMO products would put Australian growers at a significant disadvantage to their international competitors who would be able to benefit from any yield, productivity and/or cost to produce advantages associated with using such products.

7. AWB's Participation in Gene Technology

In order to facilitate the type of access referred to above, and recognising the need to be a participant in this area of agribusiness, in April 1999 AWB announced its participation in a strategic alliance involving three of Australia's leading agricultural organisations - AWB Limited, CSIRO and the Grains Research and Development Corporation (GRDC). The joint venture project - called Graingene - aims to generate innovative intellectual property and new generation plant biotechnology research for the Australian grains industry and create commercialisation opportunities for Australian grain and enhance Australia's investment capability in new technologies.

It is envisaged that Australian and international research organisations and companies will be invited to become Graingene "Associates" to participate in the alliance through involvement in individual research projects.

The research portfolio adopted by Graingene will consist of six research areas of significant importance to Australian agribusiness. These research areas include:

- genomics;
- new breeding technologies;
- yield increase in Australian wheat;
- resistance to pests and diseases;
- environmental stress; and
- product quality.

8. Community Education

There are clearly many public perceptions regarding the safety and labeling of foods produced by genetically modified means. AWB strongly supports a public awareness and education process in Australia to fully explain to consumers all issues surrounding the use of such technology. Decisions in relation to the regulation or labeling of GMO products must be made in an atmosphere of rational debate and must not unnecessarily constrain the legitimate flow of trade in these products.

It is extremely important in this debate that policy makers do not focus solely on the emotional arguments and give equal weight to scientific evidence. The concerns consumers may have with GMO products are understandable and, in some cases, completely legitimate

as they deal with their health and their safety. This fact alone makes the issue important and the debate emotional.

However, these emotive arguments, often with little or no factual backing, cannot be allowed to hijack the debate. It is absolutely critical that the issue of GMOs is debated in a rational manner and that the burden of proof of safety rest with the promoters of the product - not with the consumer to prove the health hazard.

While biotechnology may present significant opportunities for our industry as a whole, these will not be captured if the costs of regulation and compliance outweigh the benefits available from the technology or if access is unnecessarily constrained. There must be sufficient information to make an informed decision, but these sorts of requirements should not dictate the outcome.

9. GMOs and the WTO Multilateral Trade Negotiations

It is quite clear that in order to get the best outcomes and the most appropriate regulatory mechanisms for GMOs we must move beyond the sensational headline grabbing and consider the real benefits - not just the perceived costs. As noted above, the debate must be rational. The high profile attributed to this debate to date will almost guarantee that it will also have a high profile in the forthcoming World Trade Organization (WTO) multilateral trade negotiations on agriculture.

AWB would strongly urge the Government to resist any proposals which would result in disguised restrictions on trade, or the inclusion of provisions which would constrain the movement of products containing GMOs on grounds other than sound science.

Any measures to deal with biotechnology and GMOs should conform to established rules and practices of the WTO and should complement, rather than hinder, further trade liberalisation. In essence this means that responsibility for biodiversity rests with sovereign governments and should be observed with reference to scientific considerations.

We would submit that it is important to distinguish between rules which govern trade and responses to the demands of consumers. For example, the Sanitary and Phytosanitary (SPS) Agreement seeks to ensure that any SPS measures are only imposed to the extent necessary to ensure adequate food safety and animal and plant health on the basis of scientific information and are the least trade restrictive measures available to achieve the risk reduction required. Should consumers require more information, then this is an issue for the suppliers of the product concerned in order to preserve demand. Quarantine instruments should not be used as a blunt tool to restrict imports beyond that which is necessary to protect human, plant and animal health.

Similarly, it would be inappropriate to seek to use trade measures as a means of dealing with human health and safety concerns. Trade rules are clearly not designed (and nor should they be) to deal with such concerns and the most likely outcome is reducing the credibility of trade reform without addressing the concerns of the broader public. Similarly, rules regarding consumer safety should not be seen as a vehicle by which to restrict trade or unjustifiably constrain the movement of GMO products.