Inquiry into Primary Producer Access to Gene Technology

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Table of Contents

Introduction

The Australian Barley Board (ABB) is a leading international marketer of grains, pulses and oilseeds (referred to collectively as "grains"). Established in 1939, ABB markets more than 2.5 million tonnes of premium Australian grain each year, equating to an annual turnover of between $400 million and $600 million.

Malting barley is ABB's flagship grain, and has seen ABB rise to become Australia's single largest exporter of this product.

ABB is changing from a government-owned statutory authority to a grower owned and controlled private company – ABB Grain Ltd - effective from 1 July 1999.

ABB Grain Ltd will retain the existing single-desk marketing rights for the export of both malting and feed barley from South Australia and Victoria.

ABB welcomes the opportunity to express its views on the impact of gene technology on the grains industry to the House of Representatives Standing Committee on Primary Industries and Regional Services' "Inquiry into Primary Producers access to Gene Technology".

Executive Summary

There is little argument that the potential benefits from the safe utilisation of gene technology in the grains industry are significant. The Australian grains industry should embrace the appropriate use of gene technology to ensure it has improved commodities and products that will be competitive in world markets.

A reduction in the use of herbicides, pesticides and other chemical treatments will have a positive effect on our environment. Increased crop yields due, for example, to improved utilisation of available soil nutrients, drought and disease resistance and efficient water usage will be of great value to producers.

However;

- the appropriate use of gene technology,
- procedures for the release of transgenic plant varieties into the environment, and;
- the research necessary to declare these plants and their products safe to both consumers and the environment,

needs regulation.

Australia's move into the production of GMO crops should be made with caution.

As Australia is a nation reliant on exports, the majority of consumers worldwide must accept the use of gene technology for GMOs and their products to be of any value. If acceptance is not widespread, GMOs and their products may be trade barriers or discounted commodities.

ABB, like the customers we market to, needs to know that GMOs are safe for both the environment and consumers. To date there has been a tremendous number of fear invoking reports from the media about the possible dangers of GMO crops and their products. If these reports are misleading the public then there must be targeted responses from the advocates of gene technology, complete with evidence of their safety.

ABB supports the Federal government's move to develop a national strategy for biotechnology and the establishment of a statutory office to regulate gene technology and its application.

It is essential that the regulatory system developed;

- Is transparent in its operation
- Provides reports on the reasons for the acceptance or rejection of a GMO written in a "Plain English" format.
- Provides ready access to its reports by producers, marketers and consumers
- Is recognised internationally. It may be beneficial to work globally on a system so that Australia's procedures for assessing environmental and consumer safety are recognised internationally. This may help prevent trade barriers (considering that the WTO encourages governments to regulate in ways that minimise impact on international trade).
- Integrates the work of both GMAC (Genetic Manipulation Advisory Committee) and ANZFA (Australia New Zealand Food Authority).

As a marketer ABB must be acutely aware of customer opinion, and currently the world is not an open market for GMO's or for the goods produced from a GMO. The fact that Australia is a nation reliant on exports makes it essential that Australia actively participates in the global debate on GMO's.

It is also essential that the participants in this debate feed critical information back to all links in the Australian food industry chain. GMO's would be of little value if they were to become a trade barrier.

Consumer awareness and acceptance of gene technology is critical to the adoption of this technology. This applies not only in Australia but also to the rest of the world. Australia must position itself to cope with both acceptance and non-acceptance of GMOs and their

products. It would be a disaster if Australia forged on with the application of gene technology to find that the resulting products have limited markets.

The Federal Government has budgeted for an awareness campaign. This campaign must promote the regulatory system that is developed. And for this regulatory system to be effective, consumers must be confident that the Federal Government is controlling the release of GMO's coupled with adequate testing of their safety prior to that release.

Australia is seen as a very small market by the international Life Science companies that have patent rights for a number of the gene technologies that we may need. Therefore, Australia needs open and responsible regulation of gene technology via a system that is not onerous so as to encourage:

- Acceptance by consumers for those products deemed safe
- Life Science companies to invest in co-operative research with Australian institutions

ABB recommends to the Federal Government that the biotechnology initiatives announced in the 1999 Federal Budget be progressed as a matter of urgency.

The Future Value and Importance of Genetically Modified Varieties

Assuming majority consumer acceptance, ABB believes that the future value and importance of genetically modified varieties will be significant. Australia must embrace the appropriate use of gene technology to ensure it has improved commodities and products that will be competitive in world markets.

A reduction in the use of herbicides, pesticides and other chemical treatments will have a positive effect on our environment. Increased crop yields due, for example, to improved utilisation of available soil nutrients; drought and disease resistance and efficient water usage will be of great value to producers.

Marketers and producers will benefit from the reduction in time taken to develop varieties to meet changing market and agronomic demands.

However, it is important that we do not view GMO's as the panacea. Traditional research must continue. Many are saying that genetic manipulation will go a long way in solving the world's future problems – for example - feeding the world's ever increasing population from the same amount of arable land. It is fairly clear that with their acceptance, GMO's will play a role, but they will not do it alone.

Australia and the rest of the world must not rely solely on genetic manipulation of plants to solve the perceived problems of the future. Environmental impact and land management research must continue and be given high priority. We need balanced research and traditional breeding methods will still play a major role in variety development. Gene technology is an additional tool for scientists to use as we work towards a sustainable, safe environment and lifestyle into the future.

The first wave of genetically modified varieties available to Australian grain producers is likely to be the herbicide/insect resistant types. The use of these varieties, if successful, will not only have positive impacts on the environment, through the reduced application of herbicide/pesticide; they may result in a reduction in input costs for the producer.

A reduction in input costs to producers resulting from the use of these varieties is a very important issue. The manner in which GMO varieties are commercialised will also have an impact on a producer's input costs and net return. We will not be able to evaluate the cost of GMO varieties until they are released and have proven themselves in Australian broad-acre farming systems.

Although ABB supports the safe use of appropriately tested GMO's, it also recognises the importance of the continued funding of traditional breeding methods.

As a marketer ABB must be acutely aware of customer opinion, and currently the world is not an open market for GMO's or for the goods produced from a GMO. The fact that

Australia is a nation reliant on exports makes it essential that Australia actively participates in the global debate on GMO's.

It is also essential that the participants in this debate feed critical information back to all links in the Australian food industry chain. GMO's would be of little value if they were to become a trade barrier.

There appears to be a strong belief that the "No GMO" attitudes of some European countries may eventually change. They may, but this is likely to take some time. They may not – so the fact that Australia may have differentiated markets due to GMOs must be considered. The implications of this are discussed under "The Cost to Producers of New Varieties**".**

Recommendation

That Australia supports the development and release of GMOs under open and responsible regulation.

The Ability For Producers To Compete Using Traditionally Available Varieties

If plant breeders are working with the necessary commercial focus and are well informed on agronomic and market needs, all varieties released to producers should be competitive regardless of whether they are a product of biotechnology methods or not.

Some producers may choose to remain “GMO free” and if consumers are divided on the GMO issue then markets for GMO free products should be available to the producers.

Market forces coupled with agronomic suitability will always influence the commodities that a grain producer sows.

We must not overlook the fact that traditional breeding methods will still play a significant role in future variety improvement.

The Commercialisation and Marketing of Agricultural Production Varieties and the Appropriateness of Current Variety Protection Rights

ABB's experience to date is that variety commercialisation is cumbersome and costly.

The dominant commercialisation tool being used in Australia at this time is the *Plant Breeders Rights Act 1994 (*PBR*). (The PBR Act is currently the subject of High Court action so it is not fitting to explain its appropriateness at length)*

Registering a variety under PBR defines the ownership of the intellectual property. Commercial arrangements are then made and enforced by contract for the collection of royalties from the sale of;

- seed of the variety ("seed royalty"),
- grain produced from the seed*

or

- a processed product of the grain*

*Grain and product royalties are referred to as "end-point" royalties

The difficulties associated with the use of PBR are:

- Producers can save seed for future sowing from a crop; therefore the opportunity to collect seed royalties is limited to a very short term.
- Deregulated markets make equitable collection of end-point royalties extremely difficult without the use of "closed-loop" marketing, which to date has not been favoured by public plant breeding institutions.

While ABB supports the right for those investing in research to get a return on that investment, we are concerned that the market competition that the Federal government has encouraged via deregulation will be reduced with the implementation of long-term closed-loop marketing contracts.

Closed-loop marketing has a place, for;

- the market development of a variety

and

- providing an opportunity for companies to gain some return on their research investments

ABB understands that GMO's may require more control than a traditionally bred variety. This being due to the crop management required and also for the IP owner to get a return on the huge capital investment that has been made to develop the GMO.

The use of the patent system is likely, with the genetic discovery being the patentable object/sequence.

ABB is of the understanding that the use of a patent is the strongest IP protection system available and likely to be the tool to be used in the commercialisation of GMO varieties.

ABB is confident that as Australian plant breeding becomes more commercially focussed and improved commercialisation tools and systems for grain varieties are developed, participation in variety commercialisation will become more viable.

ABB supports a national approach to IP protection and the development of a training program for its effective management. Having an efficient, standard IP protection system will encourage companies to invest in biotechnology.

Recommendation

That the Federal Government progress as a matter of urgency, the establishment of Biotechnology Australia, the investigation of a uniform IP protection system for Australia and the development of training for the effective management of this IP system.

The Appropriateness of Current Administrative Arrangements and Legislation, in Relation to Genetically Modified Organisms

There appears to be a significant amount of consumer concern regarding the use of GMO's in food and ABB supports the right of individuals to make informed decisions on the foods that they eat.

ABB too needs evidence that the varieties it encourages producers to sow are safe for the environment and that the grain produced from those crops is safe for the consumer, whether that be in raw or processed form. As a supplier of raw product that will be used in the food chain, ABB has a legal obligation to ensure that its products are safe for the purposes for which they are to be used.

Although the work of GMAC has been excellent to date, the current voluntary system needs legislative backing.

ABB supports the Federal Government's move to develop a national strategy for biotechnology and the establishment of a statutory office to regulate gene technology and its application. These initiatives must be in place as soon as possible.

Maximising efforts to establish a transparent regulatory system will embrace the fact that Australia is making informed decisions on the use of biotechnology, through the collection and assessment of all credible evidence on each GMO proposed for release.

For marketers such as ABB, it will simply not be enough to *say* to our customers that a commodity or product is "safe". Customers will want evidence that it is safe and that evidence must come from a regulated system that has consumer confidence.

Therefore it is essential that the regulatory system:

- Is transparent in its operation
- Provides reports on the reasons for the acceptance or rejection of a GMO written in a "Plain English" format.
- Provides ready access to its reports by producers, marketers and consumers

- Is recognised internationally. It may be beneficial to work globally on a system so that Australia's procedures for assessing environmental and consumer safety are recognised internationally. This may help prevent trade barriers (considering that the WTO encourages governments to regulate in ways that minimise impact on international trade).

- Integrates the work of both GMAC and ANZFA.

Recommendation

That the Federal Government's plans for the development of a national strategy for biotechnology and a statutory office to regulate gene technology are progressed as a matter of urgency.

Opportunities to Educate the Community of the Benefits of Gene Technology

For consumers to be able to make informed decisions on the foods they eat they need access to credible information from a trusted source.

The Federal Government has budgeted for an awareness campaign. It is hoped that the available funds are sufficient to develop campaigns to cover all community groups and to provide the campaigners with access to the most effective forms of media. It may be beneficial to have the direct involvement of a number of consumers who have little awareness of the issues in the development and promotion of the campaign.

The awareness program should cover both sides of the gene technology debate. To not do so would create public mistrust of any regulatory system developed and the technology itself. The campaign should provide answers to the key issues of concern identified at the Australian Consensus on Gene Technology, held in March of this year.

In addition to providing a balance of facts regarding the benefits and risks associated with gene technology, this campaign should strongly promote the regulatory system that is developed. As a result the campaign should develop consumer confidence that the Federal Government is controlling the release of GMO's and adequately testing for their safety prior to that release.

To date, consumers are predominantly receiving messages about the benefits that gene technology will bring grain producers. The benefits to the consumer and the environment must also be promoted. It is interesting that people have readily accepted benefit to their health that have resulted from biotechnology's application to medicine.

Large grain marketers, such as ABB, are in a position to raise our producers' and customers' awareness of the issues pertaining to gene technology. This can be done in written form (covering a very wide audience) or personally, provided ABB has sufficient information with which to work.

The gap in information at this time appears to be from the "safe" side. Fear provoking headlines and articles promoting a "dark" side to GMOs seem to be winning the media race. And unfortunately, there appears to be a distinct lack of targeted responses, having supported evidence, from the advocates of gene technology's safety.

The "safe" side must present facts, promote the current and future regulatory systems and dispute the reporting that is non-factual. ABB feels that the current roles and achievements of GMAC and ANZFA lack promotion.

Recommendation

That the Federal Government commences its public awareness campaign as soon as the framework for a regulatory system is agreed on.

The Cost to Producers of New Varieties

Other Impediments to the Utilisation of New Varieties by Small Producers

Until GMO grain varieties are released to producers it is difficult to estimate their cost.

The owners of GMO varieties have commented that the cost of GMO seed is unlikely to be that different from traditionally bred seed.

However it is unlikely that producers will be allowed to sell GMO seed "across-the-fence" which has been a farming tradition for many years. Therefore smaller producers who have been able to access seed at a reduced cost by this method will have to pay a higher price.

This is likely to be the case for traditionally bred varieties also, with the level of "across-the-fence" trading of seed reducing since the introduction of the Plant Breeders Rights Act 1994.

In addition to this, it may be that producers will not be able to retain seed from their crop for future sowing. In this case new seed will have to be purchased for each sowing.

In other countries, and ABB understands with GMO cotton in Australia, purchasing a GMO variety can bring with it "stewardship". This means that a producer is required to purchase additional inputs for the crop from specified retailers. This may be more costly for the producer as his freedom of choice and price negotiation power is lost. However ABB appreciates that the companies developing GMO's use this stewardship to capture returns on their research investment.

In the early stages of release, GMO crops may require monitoring until producers are familiar with the essential management of the crop. This cost is likely to be borne by the producer.

It is possible that a royalty will be payable on the GMO, to the IP owners. If the current Grains Research and Development Corporation (GRDC) research levy remains payable, the GMO royalty will be an additional cost.

With the large Life Science companies owning much of the technology Australia wishes to access, we are seeing our researchers and marketers developing research alliances with these companies. These alliances will provide our producers with the improvements gene technology offers but one must ask at what cost?

Members in an alliance will want a return on their capital investment. It is difficult to imagine how each participant will make a significant return with only the producer to extract this from.

However, should a variety have end-use benefits, rather than agronomic, it is feasible that a premium may be paid by the market, improving the producer's and GMO owner's returns. Significant yield improvements in varieties may also mean an increased return to producers.

An additional cost may be identity preservation. If GMOs are released prior to complete market/consumer acceptance of the technology, identity preservation will be an enormous issue, given Australia's bulk handling of grain.

If identity preservation is required, bulk handling charges to the producer are likely to rise due to:

- the segregation of GMO from non-GMO
- Routine testing for the positive identification of non-GMO
- Thorough cleaning down of equipment between receivals, transport and shipping of GMO varieties

Producers may have increases in freight from their farm to silo depending on where segregations for GMO varieties are located.

Until a broad acre GMO grain variety is released in Australia and tried over a number of seasons, the cost to the grower is speculation. According to recent US studies, their producers are getting a big advantage from GMO varieties that have eliminated the damage caused by grain damaging pests (thereby increasing yield) and the reduction in input costs for herbicides.

If Australian producers get these same advantages without significant costs being added elsewhere in the chain, GMO varieties will be viable for small and large producers.

However in the short term it is unlikely that there will be a significant positive change in a producer's net return for their production from a GMO.