Current and Future Trends in Barley Quality Requirements

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A. Introduction

ABB Grain Ltd. is the successor company of the former Australian Barley Board (ABB), a Government Statutory Authority established under the National Security Act in 1939, primarily responsible for the marketing of the barley crop in South Australia and Victoria on behalf of growers.

ABB's primary focus is to achieve a maximum net return on barley on behalf of growers and an acceptable return on shareholding for shareholders.

Business has been built on over 60 years of marketing Malting and Feed Barley and its current valuation is estimated at over A$60 Million.

ABB's client base spans 30 countries and consists of approximately 50 international and 700 domestic customers.

Annual sales range from A$400 – A$600 Million.

ABB has a worldwide reputation for supplying a quality product against ISO 9002 Quality Assurance accreditation standards.

ABB's market position has resulted in it being the world's largest single exporter of barley, being the market leader in China and Japan.

ABB receivals average 2.8 – 3.0 Million tonnes per annum, comprising of approximately 2.5 Million tonnes of Barley and approximately 300,000 tonnes of Other Grains (these include pulses, oil seeds, coarse grains and wheat).

From a "Global Market Position", ABB's market share of world barley trade comprises 11% Feed Barley and 35% Malting Barley.

However, from a "premium market" perspective, ABB's market share position for Malting Barley comprises 45% in Japan and 40% in China.

B. International Market Observations

Macro Outlook

The dynamics of world political intervention and free economic trade forces have been clashing more intensely in recent times and the outlook is for this to continue.

We are all acutely aware of the impact of the current rounds of world trade organisation discussions, the Cairns Group, the G7 and the world trend in dismantling trade and tariff barriers.

This interaction between political intervention and free economic trade forces is having a greater direct influence on all agricultural based economies. We are seeing agricultural policies in the United States and the EU looking to make adjustments in the way that they structure and fund their current arrangements with the overall intention of reducing their intervention actions.

A small shift in either of these two forces will dramatically impact and override the efforts of any single commercial or industry specific organisation in forging its market niche.

World barley and malt trade patterns have been significantly changing in response to these major world economic and political shifts as is evident in the restructuring that we are seeing in Asia and Eastern European Block countries.

The last 60 years has seen a period of political control and intervention dominating world trade via Government Buying and Selling Authorities. Under this framework Government policy had a significant influence on quality control, development and values attributed to. What we are now evidencing is a dynamic shift away from this framework to a world economic rationality undermining previous marketing principles to the extent that it is now becoming the dominant influence on future quality trends.

Accordingly, quality requirements will respond much more directly to pragmatic economics of quality and assigned value than they have in the past.

C. Malting Barley / Malt - Future Trends

Any discussion on barley quality must recognise the impact on both malt and beer quality.

There is some conflict between these customer demands whereby the barley supplier is reacting directly to the requirements of maltsters, while obviously maltsters directly react to the demands of the major brewers.

These two customers (maltsters and brewers) have different economic drivers resulting in mixed quality messages and possible direction.

Accordingly, it is identification of these individual economic drivers that will determine the future quality trends.

Currently, the following trends have become evident with an increased emphasis towards:

- high malt extract at low modification levels
- high diastatic power levels
- low malt colour levels
- uniformity of grain size

The emphasis on future brewery quality requirements is seen to be in the following key areas:

- filterability
- head retention
- improved shelf life
- haze and flavour

These quality trends have crystallised themselves in recent years due to:

A narrowing spread between non-quality conscious markets and quality conscious markets resulting in a greater demand for tighter quality specifications and narrower bands worldwide

It has been seen by sales over the last 40 years that the quality specifications for malting barley physical characteristics and their specification bands have tightened.

This has been driven by the demand for maltsters to address specific quality parameters as breweries become more stringent in their requirements.

In any one particular customer for example looking specifically for DP then this would lead them towards this requirement being highlighted, and in many instances specifying the variety.

An example of this specific varietal requirement is the requirements by the Japanese brewery industry for Australian malt whereby due to the quality requirements of “dry” beers, high DP malts are required.

With world subsidies still evident, Australian maltsters have also had to capture the premium markets to ensure their survival

Internationalisation of brewing and globalisation of maltings.

The downsizing of the world has continued to occur by the expansion of the international brewer and maltster.

This has been facilitated by the reduction of tariffs and world trade barriers, thereby opening the opportunity for companies to engage investment in other countries.

The resultant freer flow of technology and quality transfer intelligence to previously non sophisticated or developing markets (specifically the Chinese market) in the last few years and the large investment base of international brewers and maltsters in China have seen the demand for quality barley within the China market increase dramatically.

The development of these modern malt houses and breweries in these developing markets has meant that there is little demand for second grade malting barley.

Accordingly, quantum leaps in technology in quality are being made by these previously under-developed and developing countries to the latest management practices.

The increasing modernisation and technological advancements within malting houses together with the larger number of malting varieties available have enabled a greater production capacity to blend malt of different barley varieties in order to be able to meet the minimum malt standards being imposed by many breweries.

Premium markets which the domestic maltsters predominantly supply continue however to be varietal specific in their requirements.

With the globalisation of the malting industry it has given rise to an increase in least cost or formulation mixes by many of the more astute commercial maltsters. They have actively identified specific quality requirements in barley and the resultant malt produced enabling them to blend after the malting process.

This is a direct outcome of the earlier mentioned pragmatic economic forces coupled with technological and production advances enabling this to occur.

It is this combined trend that is fundamentally driving the future quality parameters of malt and malt barley.

Maltsters will identify specific varieties that are able to show qualities of either protein, extract, yield, low modification, germination etc., isolate this in a specific variety and then choose another variety which may be able to then give them the overall combination of not simply quality but also least cost from their purchase position. This is driving the demand at times for specific varieties by maltsters.

On the other hand we have seen brewers identify within their own internal production and filtration processes including taste and other characteristics malt which they would like to specify from a specific variety. This in itself is a conflict with the modernisation of malt houses though none the less overridingly derived by the demand for a higher malt specification that in many instances cannot be produced by one particular variety.

In trying to meet these varying demands an explosion in the release of new varieties has occurred.

This has resulted in the life of varieties having a much shorter lifespan as new ones meet the quality targets.

With the advanced breeding techniques in fast tracking and the current trend towards PBR coupled with the economic opportunity of obtaining a return on investment from breeding is further promoting the trend to more varieties being grown to meet individual quality requirements.

Obviously these trends reflect the economic opportunity from research and development activities, expedited by the improvements in scientific technology enhanced genetic manipulation.

Genetic engineering, accompanied by molecular techniques such as “molecular markers” and “doubled haploids”, has great potential to improve the quality of the barley varieties of the future.

As most of us here appreciate, malting barley quality is, not withstanding other key influences on quality, predominantly about extract and DP. Breeding for malting enzyme enhancement and increased starch deposition could well be assisted by this currently controversial technology.

The controversy surrounding the genetic engineering of plants affects ABB as a marketer and the industry as a whole. ABB must be mindful of customer attitudes ie maltsters and breweries to GMOs. So whilst ABB supports technological advancement it must at the same time be in a position to meet the needs of its customers and markets. And while many believe that there will eventually be a general acceptance of GMOs, the transition period could be difficult one for all in the food chain from breeders through to food processors.

Suppliers, maltsters and brewers will be focusing on the individual economic benefits of malting barley on the basis of individual variety identification.

The perennial offset between quality characteristics and yield will be brought more into focus. Australia and other countries around the world need to meet these minimum quality targets which today is still currently the hurdle Australia needs to address over the next few years.

We are also seeing at the cutting edge of customer (brewer) requirements malt being specified by variety specific with individual customer or end-used products.

The demand for specific quality requirements in barley and malt and the demand of individual customers results in the development of niche barley varieties, grown to meet those specific requirements.

This has been evidenced over recent years with the introduction of a large number of new malting varieties.

These varieties on a regional level have been:

Europe:	Optic, Chariot, Regina, Halcyon, Gleam, Esterel, Nevada
Canada:	Oxbow, B1215, Manley, Excel, Robust, Stander, B1602
Australia:	Arapiles, Galaxy, Gairdner, Sloop, Wyalong

In summary, malting barley future trends will be focused toward specific quality characteristics that provide a direct economic value to its customers.

The individual future quality focuses will be targeted towards the following areas:

- filterability
- head retention
- improved shelf life
- haze and flavour

We will see as a result ongoing tighter specifications, higher extract varieties and the selection on a least cost basis of varieties on the basis of their individual quality characteristics to enable maltsters to achieve the specific demands of brewers.

Feed Barley

World feed barley trends and trade have been in decline over the last 10 years.

This has been a reflection of the changing customer requirements and the inherent quality characteristics of feed barley within the feed grain complex.

It is imperative that one understands feed barleys place within the feed grain complex from a least cost formulation point of view.

Current trends reflect Australian feed barley being extremely price sensitive and being placed in the least quality discerning market e.g. Saudi Arabia.

Globally there has been significant expansion in flour milling and other food consumption processing e.g. vegetable oil processing facilities which has given rise to a greater quantity of by-product.

This structural reform has enhanced the development of complex feed grain products e.g. Middle East where large flour mills have been built, which has also seen rise of feed mills being built next door producing pelletized feed.

The focus on yield within feed barley over a number of years has meant that the nutritional and economic value of feed barley within the feed grain complex has been marginalised.

Social acceptances within various markets will hinder any rapid change in the next 10 years, though the trend is clear e.g. Saudi Arabia the largest feed buyer in the world will continue to purchase feed barley in a raw state, rather than processed.

Accordingly, ongoing emphasis towards yield will be a key component in maintaining the survival and economic return for feed barley, however the trend under the complex least cost formulation feed mixes will heighten attention towards the nutritional and quality aspects within the grain mix of feed barley.

Accordingly, focus on quality will be towards high metabolic energy varieties.

The processing advantages of feed barley will need to be retained, such as cleanliness, that is low foreign material, colour (brightness), low moisture content having impact on storage considerations, digestibility and ease of processing within manufacturing.