Barley variety update 2005

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- The growing season both regionally and nationally was characterised by very favourable late spring conditions, favouring later maturing varieties. For many growers, the rains arrived in time to allow average to above average yields, particularly for the later maturing varieties. But for some growers, and for very early maturing varieties, the crops had past the point of response and disappointing yields resulted. In most areas, grain plumpness has been quite good although cleaved grain has been a problem in some of the earlier maturing areas.
- In Victoria, the harvest period has been dominated by strong winds, interspersed with minor rain events. Frequent wetting and drying of barley crops, followed by strong winds is a recipe for head loss, and many growers have experienced high losses due to head loss.
- Whilst the majority of the NVT trial data is not yet available, review of preliminary results allows some broad conclusions to be drawn:
- Later maturing varieties were 20 – 30% higher yielding than earlier maturing varieties
- Semi-dwarf varieties, which generally have superior head retention to standard height varieties, were far more stable in yield across sites. Relative yields for some taller varieties fluctuated widely between sites, presumably due to the timing of harvest influencing the level of head loss at the different sites. A change 20% in the relative performance of varieties at different sites is not uncommon when head loss becomes a factor. Varietal differences in grain plumpness in Victoria were generally not an issue of concern to growers given the generally high levels of plumpness achieved by most varieties.
- Given the importance of head retention, the question can be asked as to why breeding programs continue to develop standard height varieties. The answer is relatively simple: standard height varieties have better early vigour, are generally higher yielding in environments yielding less than 2.0 – 2.5t/ha, and tend to have improved grain size. As further development of semi-dwarf varieties occurs, these limitations of semi-dwarfs will gradually be overcome.
- As a consequence of the seasonal conditions, varieties such as **Gairdner**, and the replacement variety **Gairdner Plus**, have performed exceptionally well with yields approximately 20% above the early maturing varieties. In contrast, the very early maturing feed varieties **Barque** and **Keel**, which has been the standout feed variety in recent years, were significantly lower yielding than Gairdner.
- In terms of the new varieties, all have their agronomic strengths and weaknesses.
- The strengths of the now established SA bred early maturing **SloopSA** and Victorian bred mid-season maturity **SloopVic** are that both have excellent grain plumpness and CCN resistance. Their weaknesses include a lack of resistance to a number of foliar diseases, lower yield potential in high yielding environments and a tendency for head loss. Their yields continue to be similar to Sloop and a few percent above Schooner.

- The WA bred mid-season maturity **Baudin** has excellent straw strength and it's short stature minimises head loss. These characteristics resulted in Baudin performing reasonably well during 2005 compared to the other newer malting varieties, but yields were below Gairdner and Gairdner Plus. Baudin also has improved grain plumpness compared to Gairdner, although it's grain plumpness is inferior to the Sloop types. Unfortunately, Baudin is highly susceptible to a range of leaf diseases, in particular leaf rust.

Buloke is a mid season maturity variety also bred in Victoria, with wide adaptation to the low – medium rainfall districts in southern Australia. Buloke's key strengths are it's yield potential in low rainfall districts, particularly in the Mallee, and good general leaf disease resistance. Compared to varieties of similar maturity, in 2005 Buloke's yields were about 5% above the CCN resistant Sloop types. Buloke's key weaknesses are a lack of CCN resistance for the Mallee environment, moderately tall stature resulting in some head loss, and a level of grain plumpness that is inferior to Schooner although superior to Gairdner.

Flagship is an early to mid-season maturity variety bred in SA suited to the low – medium rainfall districts. Flagship's strengths include excellent general leaf disease resistance and resistance to CCN, and good yields under conditions of average to above average rainfall. Yields in Victoria in 2005 were similar to the CCN resistant Sloop types. It's principal weaknesses include poor yield in the Mallee environment during stressful years, poor head retention, grain plumpness that is similar to Buloke, and an increased tendency for pre-harvest sprouting.

Gairdner Plus is a moderately late maturing "Gairdner look-alike" variety developed in SA. Gairdner Plus's strengths are CCN resistance, improved resistance to the Spot Form of Net Blotch and general yield potential matching Gairdner. It's weaknesses are similar to those of Gairdner, with a tendency to small grain under stress and susceptibility to scald and powdery mildew, particularly in Western Australia.

WABAR2175 has not been extensively trialed in eastern Australia, but in Western Australia it is extremely well adapted to many of the Western Australian medium – low rainfall districts. WABAR2175's strengths include a high yield potential in the medium – low rainfall districts and very good grain plumpness. Weaknesses include lower relative yields on alkaline soils, lack of CCN resistance, and some weaknesses in foliar disease resistance.

The next 2-3 years will determine which of these malting varieties can be successfully accommodated into the Australian malting barley market. From a grower's point of view, classification of a "malting variety" is based on availability of segregation. In this sense a malting variety is a variety that has both the inherent quality attributes (both physical and chemical) and has sufficient volume of production to warrant the interest of brewing customers. Unless both these criteria are met, then a variety will not become accepted as a "malting variety". By 2010, Australian barley growers will know what level of choice they will have in the selection of malting varieties: whether the industry is capable of utilising a larger number of varieties or whether it will revert to historic acceptance of a few.