

Barley variety trials - 2006

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Take Home Messages

- 2007 will not be the year for large changes in malting barley variety options. Limitations in seed quantities and/or availability of malting segregation, will restrict adoption in 2007 of the new malting varieties Flagship and Buloke, which primarily target those growers in regions with less than 400mm annual average rainfall.
- The malting market demand for Flagship is likely to be greater in 2007 than for Buloke. Buloke still requires an additional year of commercial scale trials before full accreditation is achieved. Growers should seek advice regarding the likely location of segregation for Buloke and Flagship prior to planting.
- The potential Gairdner replacement WI3586-1747 (also known as Gairdner-Plus) will not be released due to marketing difficulties.
- Fleet and Hindmarsh, are two new feed varieties for which seed is available. Both varieties should be considered as alternatives to Barque and Keel.
- In the longer term, and subject to the successful completion of commercial scale malting and brewing trials, Hindmarsh and the breeding line WI3416-1572 represent substantial yield improvements compared to existing malting varieties, particularly in the Mallee.

Results

Drought resulted in the loss of a large number of barley variety trials in Victoria during 2006. Of 18 NVT trials, only three sites in the Mallee region, and none within the Wimmera, were harvested. Hence, the barley variety trial at the BCG Rupanyup site (Table 1) was one of very few barley variety trials that produced useful data in the Wimmera during 2006.

Table 1: Yield and grain quality for barley varieties evaluated at the BCG trial site at Rupanyup 2006.

Variety	Yield (t/ha)	Yield (% Gairdner)	Screening %	Retention %	Protein	Grade	Price (\$/t) [#]	Gross Return
Barque	1.31	102	2.8	70.0	12.0	F1	\$294	\$385
Baudin	1.36	106	5.1	38.1	11.9	GANR*	\$311	\$423
Buloke	1.42	111	2.2	70.5	11.5	GAM1*	\$328	\$466
Gairdner	1.28	100	5.3	53.2	12.0	GANR	\$311	\$398
WI3586	1.43	112	5.8	36.1	11.7	F1***	\$294	\$420
Hindmarsh	1.58	123	7.6	62.8	11.0	F1**	\$294	\$465
Quasar	1.48	116	8.9	25.2	11.4	GANR*	\$311	\$460
SloopVic	1.32	103	2.4	62.1	12.0	SLNR	\$311	\$411
Lsd (5%)	0.18	14						

[#] Best price at GrainCorp Murtoa storage on 1st Dec 2006.

* Malting classification not available for Buloke, Baudin (NR) and Quasar at Murtoa; price based on Gairdner malting classification assuming markets are available.

** Malting accreditation is currently being sought for Hindmarsh, but full accreditation is not expected before 2010 assuming successful completion of commercial scale trials.

*** WI3586 (also known as "GairdnerPlus") will not be released due to marketing difficulties.

Results in the Rupanyup trial were similar to the Mallee NVT trials (Table 2) harvested at Birchip, Pira and Hopetoun, with the best performing varieties being the early maturing Keel and Hindmarsh, whilst the late maturing Gairdner was one of the lowest yielding varieties at all sites. These results contrast dramatically with the yield rankings in trials from the 2005 season (Table 2), where the favourable spring conditions suited the later maturing varieties.

Table 2: Victorian 2006 Mallee NVT* barley trial results for the Birchip, Hopetoun and Pira sites, and 2005 NVT/DPI barley trial results for the Mallee and Wimmera.

	2006				2005	
	Yield % Gairdner				Yield % Gairdner	
Variety	Birchip	Hopetoun	Pira	Average	Mallee	Wimmera
Barque	119	89	154	120	91	89
Baudin	103	80	122	102	94	96
Buloke	99	103	143	115	89	88
Flagship	88	94	144	108	86	80
Fleet	124	113	157	132	90	91
Gairdner	100	100	100	100	100	100
Hindmarsh	121	137	172	143	98	97
Keel	137	120	182	146	86	92
Maritime	110	103	152	122	79	82
Schooner	105	118	157	127	77	75
Sloop SA	91	110	154	118	83	82
Sloop VIC	88	100	134	108	83	80
Vlamingh	82	77	101	87	87	87
WI3416/1572	90	87	151	109	106	100
WI3586/1747	117	108	138	121	96	93
Yarra	110	104	136	117	96	95
Site Mean (t/ha)	1.67	1.08	1.07			
CV (%)	14.6	9.8	11.6			
LSD (t/ha)	26	17	20			

*2006 trial results courtesy of NVT website <http://www.acasnvt.com.au/ACAS/>

Discussion

The ideal variety should have the ability to perform relatively well under both harsh and favourable seasonal conditions. At present no malting varieties are available that can both capture the benefits of seasons such as 2005 whilst coping with the stress of seasons such as 2006. The new feed variety Hindmarsh, which is still under malting quality evaluation, was the only variety to perform well in both seasons.

New malting varieties - Wimmera

Based on a combination of agronomic performance and grain quality in comparison with Gairdner, the only new variety now worth considering as an alternative to Gairdner in the

Wimmera is Buloke. Unfortunately, the CCN resistant breeding line WI3586-1747 (also known as Gairdner-Plus), which had generated considerable interest, is not being released due to potential marketing difficulties, and will be discontinued in trials.

Prior to 2006, the probability of Gairdner exceeding the yield of SloopSA, SloopVic, Schooner and Flagship in the Wimmera was close to 100%, with a probability of 65 – 70% of exceeding the yield of Buloke (NVT trial data); the 2006 season will not have significantly changed these probabilities. These results indicate that only Buloke has the potential to be higher yielding than Gairdner, mainly in the drier years or more northern areas of the Wimmera.

New malting varieties - Mallee

The two new options to replace the CCN resistant Sloop types and Schooner in the Mallee are Flagship and Buloke. Buloke, available through AWB Seeds, represents a 5-7% yield improvement over the CCN resistant Sloop types but lacks CCN resistance. Flagship, available through ABB, provides no yield improvement compared to the CCN resistant Sloop types, but is CCN resistant and has superior malting quality compared to the existing varieties. Both Buloke and Flagship are relatively early maturing and have good general leaf disease resistance; Buloke has superior resistance to scald and powdery mildew, whilst Flagship has superior resistance to SFNB. Both varieties are slightly inferior to the Sloop types for grain plumpness.

Flagship has received full malting quality accreditation and has gained positive reviews from the majority of the domestic maltsters. Commercial malting quality evaluation / market development of Buloke is less advanced, and requires an additional year of commercial malting and pilot brewing trials prior to receiving accreditation. Potentially the malting quality of Buloke is similar to Flagship however favourable commercial trials are required before markets will develop for this variety.

Feed varieties

Feed variety options include the new early maturing, CCN resistant varieties Fleet (available through ABB) and Hindmarsh (available through AWB Seeds), and the older varieties Barque and Keel. Hindmarsh and Keel were the highest yielding varieties in trials during 2006, with Fleet also performing very well. Hindmarsh was the only one of these varieties that was able to fully capitalise on the favourable spring in 2005 (see Table 2).

Fleet was developed by the Adelaide University breeding program as a direct replacement for Barque and Mundah, representing a 5% yield improvement compared to Barque in Mallee environments.

Hindmarsh was developed by the DPI-Horsham breeding program, as an early maturing semi-dwarf variety with exceptional yield potential, excellent head retention, good leaf disease resistance, and good physical grain characteristics, offering higher test weights than any other feed barley variety. Whilst Hindmarsh possesses a yield advantage over Fleet, it is relatively susceptible to the Spot Form Net Blotch (SFNB) whereas Fleet is moderately resistant.

Hindmarsh would be a high yielding feed variety in either the Wimmera or the Mallee, whilst Fleet is best suited to the Mallee.

Grain marketing issues in 2006

The lower prices available at some receival points during the 2006 harvest for the Sloop types compared to Schooner and Gairdner were due to the aberration of the season, rather than an indicator of any long term price trend, occurring through local “Australian domestic” demand pressures only. The very strong domestic demand this season has resulted in higher prices for

domestically preferred varieties than can be achieved on export markets, into which the majority of malting production is sold in more typical seasons.

Future malting varieties

In terms of future malting varieties, the most promising varieties/lines are Hindmarsh and WI3416-1572. Both are CCN resistant but contrast in maturity, with Hindmarsh and WI3416-1572 being respectively a few days earlier and a few days later than Schooner. The earlier maturing Hindmarsh performed well in both 2005 and 2006, whilst the later maturing WI3416-1572 yielded exceptionally well in 2005 but was disappointing in 2006 (Table 2). Commercial scale trials are continuing for both lines, with classification for WI3416-1572 unlikely before 2009 and for Hindmarsh unlikely before 2010. For both lines, individual crops may be used as part of the commercial scale malting and brewing evaluation trials during the intervening period. WI3416-1572 is better suited to the domestic brewing industries, as an alternative to Schooner, whilst Hindmarsh would be better suited to the export brewing markets, as an alternative to Baudin, Flagship and Buloke. In the Victorian Mallee, long term NVT yield results suggest both lines have substantial yield advantages compared to all other malting varieties. Yields of Hindmarsh are slightly superior, and yields of WI3416-1572 slightly inferior, to Gairdner in the Wimmera. Both lines have good grain plumpness, being superior to Gairdner and Schooner, and both have good leaf disease resistance profiles although Hindmarsh is susceptible, and WI3416-1572 is moderately susceptible, to the SFNB.

Commercial practice

On the basis of long term yield performance, Gairdner remains the preferred option in the Wimmera for growers in districts south of Warracknabeal despite its relatively poor performance in trials in 2006. For growers optimistic enough to believe that rainfall in the 2007 season will above a decile 5, the growing region for Gairdner could extend further north from Warracknabeal.

Buloke provides a higher yielding alternative to Gairdner in drier seasons and in the more northern areas of the Wimmera. However, until full malting accreditation is achieved, malting segregation for Buloke will be extremely limited.

As both Gairdner and Buloke are CCN susceptible, growers should be mindful of the potential risk of continuing to grow CCN susceptible cereal varieties, especially when the benefit of CCN break or rotational crops (CCN resistant wheat, pulses, oilseeds) is severely negated in dry/drought seasons such as have occurred in 2002, 2004 and 2006. A paddock with a history with Gairdner in 2001, 2003 and 2005 and “break” crops in 2002, 2004 and 2006 represents a very high CCN risk for a cereal crop in 2007.

For the Mallee, in the longer term, the superior malting quality of Flagship will result in a market preference for this variety although it is unclear how long before these market preferences will translate into price differences at receival points. Growers should consider moving towards Flagship as the marketing options are likely to be superior for this variety compared to the Sloop types based on feedback from domestic maltsters and grain marketers. Despite the quality potential of Flagship, limited segregation will be available in 2007 and growers should make enquiries as to potential delivery points prior to committing to this variety.

Buloke provides a high yielding alternative to Flagship, but the lack of CCN resistance in this variety will restrict its adoption in the Mallee.