

2008 Barley Variety Guide

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Mary Raynes, Barley Industry Development Officer

Baudin (D) Baudin is an export malting variety released, 2004. Baudin is a mid season variety with improved grain size compared to Gairdner, and superior grain plumpness in years with dry and hot spring conditions. Baudin is more susceptible to leaf rust than Gairdner, with superior grain plumpness in years with dry and hot spring conditions. The variety is a shorter plant type than Gairdner and less likely to lodge. Baudin is an alternative malting quality variety to Gairdner in 375-500mm rainfall districts, but should not be grown in areas with greater than 500 mm annual average rainfall as it is very susceptible to the disease scald. Seed is available from AWBSeeds.

Buloke (D) is an export malting barley variety with good grain size, similar to Sloop Vic. Buloke has best adaptation in those regions of southern Australia with 325mm-450mm annual rainfall. Buloke has growth habits similar to Barque. Buloke is susceptible to cereal cyst nematode (CCN). In Victoria, Buloke flowers at approximately the same time as Schooner, and about 3-4 days later than Sloop SA. Buloke is a few days later flowering than Schooner in central NSW. Buloke has reasonable straw strength, similar to Gairdner, moderately good head retention, similar to Sloop VIC and is tolerant to pre harvest sprouting similar to Gairdner. The average grain plumpness of Buloke is similar or slightly inferior to Schooner but superior to Gairdner. Buloke is available through AWBSeeds.

Flagship (D) Flagship released in 2006 is a tall, early to mid season maturity variety, similar in plant type to Schooner and Sloop. Flagship is resistant to CCN. Flagship exhibits good early vigour and competitiveness against weeds, in low rain fall years also exhibits very severe symptoms of boron toxicity. Flagship has modest straw strength, with lodging resistance similar to Schooner. Flagship is free threshing and has good resistance to head loss, significantly better than Schooner. Flagship closely matches the very good physical grain quality of Schooner and Sloop across southern Australia. Flagship is an ideal export malting barley variety. Seed available through ABBSeeds.

Franklin (D) Late maturing malting variety, best suited to high rainfall areas, with a tendency to produce small grains with high screenings in a dry spring. Limited Franklin is grown, being replaced by Gairdner.

Gairdner (D) Gairdner is a moderately late maturing, semi-dwarf variety with grain size inferior to all other malting varieties. Gairdner has good head retention slightly inferior to Baudin. Although Gairdner is a semi-dwarf variety, it can be quite tall under favourable conditions where it may lodge. In drier areas, Gairdner should be sown in May, as late sowing may result in high screenings. The variety is inherently low in grain protein (0.7% lower than Schooner) and appropriate nitrogen

management is essential to avoid excessively low protein levels. Gairdner is very susceptible to spot form of net blotch (SFNB) and growers concerned about this disease should avoid this variety. Gairdner has good resistance to the net form of net blotch (NFNB) and powdery mildew, however, is very susceptible to scald. Gairdner is known for high screenings in a dry spring consequently this variety is not recommended to be grown in area with lower than 325mm annual rainfall.

Schooner released 1983 is a widely adapted, mid season variety with poor head retention. Schooner is susceptible to CCN, powdery mildew, leaf scald and moderately susceptible to the SFNB and moderately resistant to NFNB. Schooner continues to be popular with the domestic brewing industry and has a long-standing market in China. Schooner is soon to be outclassed by Buloke and Flagship.

Sloop is a malting variety of similar maturity to Schooner, with improved head retention, slightly plumper grain and slightly improved yield. It has relatively poor leaf disease resistance and seed should be treated with systemic seed treatments. Sloop is soon to be outclassed by Buloke and Flagship in terms of malting types and by Hindmarsh as a feed variety.

Sloop SA is a moderately early maturing variety with excellent grain size (like Sloop), providing good adaptation over a wide range of environments, especially in low rainfall environments. Sloop SA is similar to Sloop in terms of early vigour, height, harvestability and standability but has shown a greater tendency for head loss than Sloop. SloopSA is slowly being phased out by Gairdner for domestic malting purposes, also by Buloke and Flagship for export markets and Hindmarsh as a feed barley.

Sloop Vic released 2002, is a mid-season maturing (4 days later than Sloop), CCN resistant malting quality variety with moderate boron tolerance. Sloop Vic matures later than Sloop SA, and recommended to 350mm+ rainfall environments. Sloop Vic is best suited to the southern Mallee and northern Wimmera regions where a CCN resistant malting quality variety is required. In drier areas Sloop Vic will be out classed in terms of yield by Flagship and Buloke for export markets; and outclassed by Hindmarsh for the feed barley industry.

Quasar (D) Quasar, only available under license with Barrett Burston Maltings company, is a replacement of Galaxy. Quasar is an early to mid season maturing, semi dwarf, malting barley variety with superior malting characteristics and grain size compared to Gairdner. It has moderate early emergence and seedling vigour with an erect growth habit. At maturity Quasar is shorter compared to Gairdner with excellent straw strength and best suited to the 350+mm rainfall areas. Trials are organised by Heritage seeds throughout south-eastern Australia.

Vlamingh (D) a malting barley variety that was released from Western Australia (WA), 2006. Vlamingh is a high yielding export malting variety with a grain shape between Schooner

and Stirling. The expected levels of screenings are similar to Schooner and lower than Baudin and Gairdner. Vlamigh has improved disease resistance to scald, NFNB and barley leaf rust compared to Baudin. Vlamigh is susceptible to powdery mildew. Vlamigh's area of adaptation is in the medium to high rainfall regions of WA. Overall, yields have been lower than competitor varieties in SA and VIC, however Vlamigh shows more promise in NSW. Seed is available from COGGO seeds.

Feed

Barque A high yielding feed variety, best suited for low to medium rainfall areas. Barque is CCN resistant. Along with Keel, Barque has the best resistance to the SFNB amongst current barley varieties. Barque has vigorous early growth, is comparatively taller at harvest and is similar with relatively weak straw. Barque is considered a good weed competitor with lower average test weight than other feed varieties. Keel is a replacement for Barque.

Capstan (D) High yielding feed variety that is a mid to late maturing variety. Capstan has excellent grain yield potential, broad adaptation and is resistant to CCN while being susceptible to leaf scald, moderately resistant to powdery mildew and NFNB. Capstan has short, stiff straw with excellent head retention and would be suitable for growers targeting very high potential yields. It is most suited to medium to high rainfall areas as Capstan has very short plant height and a tendency for lower test weights will preclude if from drier environments. Seed available through ABBSeeds.

Cowabbie (D) released 2004, has a short straw length with good strength. Cowabbie is very susceptible to the NFNB, susceptible to the SFNB, moderately resistant to powdery mildew and leaf scald. Limited area is sown to Cowabbie in Victoria. Seed is available from ABBSeeds.

Fleet (D) Fleet released in 2006, is a feed quality barley developed as a replacement for Barque and Mundah and an alternative to Keel. Fleet has similar phenology to Barque, and similar adaptation as Mundah in deep sandy soils. Fleet is resistant to CCN, moderately resistant to SFNB. Fleet has an improved physical grain quality compared to Keel and Barque. Seed is available through ABBSeeds.

Keel (D) Keel is a high yielding, early maturing feed-quality barley. It is resistant to CCN and moderately resistant to the SFNB and NFNB, while being very susceptible to leaf rust. Keel is a shorter plant type compared to Barque. Keel has good head retention and is easier to thresh than Barque. This variety is not suitable for sandy soils, where Barque is preferred. Keel performs best on heavy soils and is relatively drought tolerant. It is best suited to low rainfall environments.

Hindmarsh (D) early maturing semi-dwarf feed variety with exceptional yield potential, especially in drier years; has excellent head retention and lodging resistance. Hindmarsh is CCN resistant and is rated as moderately resistant to leaf scald, moderately susceptible to leaf rust and susceptible to the SFNB. Hindmarsh has approximately the same maturity as Barque, being approximately 5 days earlier flowering than Schooner and approximately 4 days later flowering than Keel. Hindmarsh entered the first of a two phase process for malting accreditation in 2008 and is under review of the Malting and Brewing Industry Technical Committee (MBIBTC). Seed is available through AWBSeeds.

Maritime (D) Maritime is an early maturing, moderately tall, CCN resistant feed variety with excellent tolerance to manganese deficiency, such as is found on the lower Yorke Peninsula region

of South Australia. In areas without chronic manganese deficiency, yields of Maritime are similar to Barque and Keel. Test weights of Maritime are superior to Barque and Keel. Maritime is an alternative to Barque and Keel, especially in areas with low soil manganese or where there is difficulty in obtaining high test weights. Maritime performs well on sandy soils compared to Keel.

Tantangara High yielding feed variety, short strong straw, susceptible to barley grass stripe rust. Best suited to lower New South Wales regions. Seed available from ABBSeeds.

Tulla (D) released 2003, is an acid tolerant, semi-dwarf feed variety which has good straw strength and is moderately resistant to the SFNB and moderately susceptible to NFNB. Very susceptible to powdery mildew. Early May-mid June sowing. Limited Tulla is sown in Victoria. Seed available from Waratah Seeds.

Unicorn introduced into Western Australia (WA) from Japan through a joint project between Kirin Australia and University of Western Australia in 1998. An extremely early maturing variety with CCN resistance. Not recommend for Victoria.

Urambie (WB234) (D) was released from New South Wales, 2005. Urambie offers an alternative feed grain cultivar comparable in yield to Binalong in the north. Not recommended for Victoria.

Yambla An acid soils-tolerant, semi dwarf feed barley suited to earlier sowings. Yambla is taller than Tantangara and higher grain yields than Yerong in grazed and ungrazed trials.

Yarra (D) Yarra has greater grain plumpness compared to Gairdner. Yarra has similar CCN resistance to Barque while grain screenings are lower than all other feed varieties. Yarra has equal to or higher hecta-litre weight compare to all other feed varieties and 0.5% lower grain protein levels than Schooner and Barque. Yarra has a prostrate early growth habit and moderately late maturing, similar to Capstan. Yarra's is best adapted in regions with 375mm – 450mm annual rainfall and particularly well suited to the Yorke and Lower Eyre Peninsula regions of South Australia. Seed available for ABBSeeds.

Recently Release Varieties

Three new feed barley varieties were released in WA by the Department of Agriculture and Food in 2007. Hannan (WABAR2321), Lockyer (WABAR2288) and Roe (WABAR2310). Limited seed is available for in 2008. Seed enquiries can be made to COGGO.

Quickstar and Starmalt

Are new malting barley varieties develop by Syngenta Seeds Ltd (UK) and under evaluation by Heritage Seeds and Barrett Burston Maltings. Starmalt is a tall early/midseason variety with flowering time similar to Sloop. Quickstar exhibits medium plant height and midseason maturity with flowering time similar to Baudin. Both varieties are undergoing commercial scale malting and brewing evaluation and commercial release decisions are likely to be made in 2009.

Fairview is a malting variety developed by ADM Malting and is currently in commercial production in New Zealand. Fairview is a semi dwarf variety with moderately late flowering time similar to Gairdner. Pure seed production will proceed in 2008 prior to contract crop production expected to support the Geelong based ADM malting plant.

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GROWING AREAS

Table 1. Suitability of varieties to Victorian cropping regions.

Variety	Quality	Low Rainfall (<350 mm)	Medium Rainfall (350-450 mm)	High Rainfall (>450 mm)
Baudin	Malting		✓	
Buloke	Malting	✓	✓	
Flagship	Malting	✓	✓	
Franklin	Malting			✓
Gairdner	Malting		✓	✓
Quasar	Malting		✓	✓
Schooner	Malting	✓	✓	
Sloop	Malting	✓	✓	
SloopSA	Malting	✓		
SloopVic	Malting		✓	
Vlamingh	Malting		✓	
WI3416-1572	Malting (Provisional)		✓	✓
Barque	Feed	✓	✓	
Capstan	Feed		✓	
Cowabbie	Feed	✓	✓	
Fleet	Feed	✓	✓	
Hindmarsh	Feed	✓	✓	
Keel	Feed	✓	✓	
Maritime	Feed	✓	✓	
Tulla	Feed		✓	
Unicorn	Feed	✓		
Urambie	Feed	✓		
Yarra	Feed		✓	✓

YIELD

Table 2. Long-term yield of barley varieties in Victoria, 2000 - 2007 (yield as % Sloop SA or Gairdner).

Variety	Mallee	Wimmera	North Central	North East	South West Ballinaga	South West
t/ha	Sloop SA 2.43 t/ha	Gairdner 2.88 t/ha	Gairdner 2.79 t/ha	Gairdner 2.36 t/ha	Gairdner 2.38 t/ha	Gairdner 5.45 t/ha
MALTING						
Baudin	100	101	98	98	89	95
Buloke	108	103	104	101	100	-
Flagship	101	96	96	93	88	87
Franklin	84	87	90	91	86	91
Gairdner	99	100	100	100	100	100
Quasar	-	97	96	98	-	-
Schooner	98	90	93	90	85	-
Sloop	99	94	96	93	89	-
Sloop SA	100	94	96	92	90	-
Sloop VIC	99	93	98	92	89	-
Vlamingh	99	96	97	-	-	91
WI3416-1572	111	106	105	103	-	101
FEED						
Barque	106	100	99	99	93	-
Capstan	108	107	100	108	97	105
Fleet	111	107	106	104	-	100
Hindmarsh	118	113	110	105	-	-
Keel	110	107	101	98	90	-
Maritime	105	100	-	-	-	92
Tantangara	102	103	97	100	93	98
Yarra	107	103	99	101	98	96

DISEASE

Table 3. Disease reaction of selected barley varieties.

	Leaf scald	Net blotch		Powdery mildew	Leaf rust	BYDV	Cereal cyst nematode		Root lesion Nematode				Barley grass stripe rust
		Spot	Net				Res	Tol	<i>P.neglectus</i>		<i>P.thornei</i>		
									Res	Tol	Res	Tol	
MALTING BARLEY													
Arapiles*	S	MS	MR-MS	VS	S	S	S	T	MR	-	R	MT	R
Baudin	S	S	MS	S-VS	VS	MR	S	T	-	-	-	-	R
Buloke	MS	MS-S	MR	MR	MS-S	S*	S	T	-	-	-	-	R
Dhow*	MS-S	S	MR-MS	MS*	S	S	R	T	MS	T	R	-	MS
Fitzroy*	MR/MS*	MS-S	MR-MS	S	R	-	S	T	-	-	-	-	R
Flagship	MS	MS	MR-MS	MR-MR	MS-S	S	R	T	MR	-	MR-MS	T	R
Franklin	MS-S	S-VS	S	R	S	MR	S	T	MR	-	MS	MT	R
Gairdner	S-VS	S-VS	MR-MS	MR	MS-S	MR	S	T	MR	MT	MR-MS	I	R
Schooner	MS	MS-S	MR-MS	VS	S-VS	S	S	T	MR-MS	MT	R	MT	R
Sloop	S	S	MR-MS	VS	S-VS	S	S	T	MS	T	MR	T	R
SloopSA	S	S	MR	VS	S	S	R	T	MS	MT	R	-	R
SloopVic	S	MS-S	MR	MR-MS	MS	S	R	T	MS	MT	R	-	R
Vlamingh	MR-MS	MS-S	MR	S	MS-S	-	S	T	-	-	-	-	R
WI3416-1572	S?	S*	MR-MS	-	S	S	R	T	-	-	-	-	R
FEED BARLEY													
Barque	S-VS	MR	MS	MR-MS	S	S	R	T	MR	MT	MR	MT	MR
Capstan	S	MS-S	MR-MS	MR	MS-S	S	R	T	MR	T	-	-	MR
Cowabbie	MR	S	VS	MS*	S	-	S	T	-	-	-	MR-MI	MR
Fleet	MR-MS	MR-MS	MR-MS	MR	MS	S	R	T	-	-	-	MT	R
Hindmarsh	MR	S	MR-MS	MS	MS	S	R	T	-	-	-	-	R
Keel	MS	MR	MR	MS	VS	S	R	T	MR	T	MR	-	MS
Maritime	S	MS	MR	S	MS	S	R	T	MR	T	-	-	S
Mundah*	S-VS	MS-S*	MR-MS	MS*	S	S	S	T	MR-MS	-	-	-	R
Unicorn*	S	S*	MS-MR*	MR*	S	MR*	S	T*	-	-	-	-	-
Urambie*	R	MS*	R	MS-MR	R	MS*	-	-	-	-	-	-	R
Tantangara	MR-MS	S-VS	MS	VS	MR-MS	S	S	T	-	-	-	T-MT	S
Tulla*	-	MR	-	-	-	-	-	-	-	-	-	-	-
Yarra	S-VS	MS-S	MR-MS	S-VS	R	S	R	T	-	-	-	-	R
HULLESS													
Torrens*	MR-MS	MS	MR-MS	MR-MS	S	S	R	T	MR	-	R*	-	R
WI3930?	R*	MS	MR-MS	MS	R	S	R	T	-	-	-	-	MR

Source: Cereal Disease Guide 2008, Grant Hollaway.

Disease resistance;

R = resistant MR = moderately resistant MS = moderately susceptible, S = susceptible, VS = very susceptible
T = tolerant MT = moderately tolerant MI = moderately intolerant I = intolerant

Varieties marked may no longer be resistant due to the occurrence of new races making these varieties susceptible.

* These ratings are less reliable and should be treated with caution. ? = disease status yet to be confirmed for Victoria.

Barley Varieties Continued....

Potential Release Varieties

WI3416-1572 is a 'provisional domestic malting' barley variety currently under varietal development. WI3416 is a mid to late maturing variety best suited to medium to high rainfall areas. WI3416 is susceptible to SFNB and moderately resistant to NFNB. This evaluation line is still under review of the Malting and Brewing Industry Barley Technical Committee (MBIBTC).

WI4262 is a semi dwarf variety with very stiff straw and flowering time similar to Gairdner targeted to the higher rainfall regions. WI4262 exhibits physical grain quality and plant type better suited to high input farming systems than Gairdner. WI4262 is susceptible to leaf rust and resistance to scald. WI4262 is aimed at the domestic brewing industry. This

evaluation line is still under review of the Malting and Brewing Industry Barley Technical Committee (MBIBTC).

WI3930 Hulless animal feed type targeting higher rainfall areas of southern Australia. WI3930 is higher yielding than Torrens, equivalent to Schooner. Grain size and weight is lower than Schooner. WI3930 has a semi-dwarf growth habit with stiff straw coupled with lodging and head loss resistance. WI3930 matures later than Schooner., is resistant to CCN, scald and leaf rust. Superior feed quality compared to Torrens and Schooner. Seed production commenced in 2005 (5tn). Long tem Wimmera yields indicate WI3930 yields 2% and 12% less than Schooner and Gairdner respectively.

For further information:

Refer to the "Victorian Winter Crop Summary 2008", or
Go to Agnotes: www.dpi.vic.gov.au/notes (click on Crops and Pastures, Cereals)

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