



# Barley variety sowing guide 2008

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This sowing guide provides data and guidance on the most suitable barley varieties for sowing in South Australia in 2008. While no new varieties have been commercialised over the past twelve months, several released earlier, including Fleet<sup>®</sup>, Hindmarsh<sup>®</sup> and Flagship<sup>®</sup> will become more available for sowing in South Australia in 2008. Comments on these are included in this leaflet, although Hindmarsh has had insufficient long term evaluation within SARDI and NVT trials to be included with confidence in the preferred list below.

The list of barley variety choices most suitable for South Australian growers is provided below and has several changes from the previous guide. The varieties, Chebec, Dhow and SloopVic have been deleted on the basis they are being outclassed or no longer preferred by markets.

The remaining varieties have been listed according to quality classification grade and are listed in alphabetical order and not in order of preference.

The decision to grow either a malting or feed variety may depend on one or more factors, including;

- the difference in payments between malting and feed grades as related to yield differences (Table 1);
- the probability of producing a malting grade barley;
- disease resistance and agronomic considerations (Table 2 and Table 3 respectively).

For long term stability in farm returns and market supply and demand, farmers now growing only feed varieties should consider including some malting varieties in their cropping. Cereal cyst nematode levels should be carefully monitored when susceptible varieties such as Schooner, Sloop, Buloke, Baudin and Gairdner are grown. **Seed dressings having activity on powdery mildew should be applied to all varieties susceptible to powdery mildew, particularly when sown before June.**

Variety	Maximum grade	Suitability and significant features
Baudin <sup>®</sup>	malting	medium to high rainfall areas (>400 mm), avoid areas prone to leaf rust
Buloke <sup>®</sup>	prov. malting	all areas
Flagship <sup>®</sup>	malting	all areas, with timely harvest a priority
Gairdner <sup>®</sup>	malting	medium to high rainfall areas (>400 mm) except where high risk of spot form net blotch
Schooner	malting	all areas, and most suitable for Shochu market
Sloop	malting	all areas, except where high risk of spot form net blotch, outclassed by SloopSA
Sloop SA <sup>®</sup>	malting	all areas where CCN resistance is required, with timely harvest or windrowing a priority; avoid areas prone to spot form net blotch
Barque <sup>®</sup>	feed	all areas, except where high risk of leaf scald or net form net blotch
Capstan <sup>®</sup>	feed	medium to high rainfall areas where very high yields are targeted and test weight is easily achieved
Fleet <sup>®</sup>	feed	all areas, particularly for districts with lower rainfall and light soils
Keel	feed	all areas except deep sandy soils of lower fertility and avoid areas prone to leaf rust
Maritime <sup>®</sup>	feed	all areas and particularly manganese deficient soils
Mundah	feed	deep sandy soils of low fertility
Torrens <sup>®</sup>	feed – hull-less	specialised variety for on-farm animal feed use in all areas
Yarra <sup>®</sup>	feed	all areas and particularly districts prone to leaf rust, but avoid grass competitive situations

## Notes on varieties

**Baudin<sup>®</sup>** is derived from Franklin and Stirling and was released by the Department of Agriculture & Food WA in 2002. It is a Gairdner replacement for Western Australia with earlier maturity, slightly improved grain size and wider regional adaptation. It is a mid season malting variety with excellent straw strength and head retention. Leaf rust susceptibility is a concern in prone areas of SA. Baudin is available through AWB Seeds.

**Buloke<sup>®</sup>** is a high yielding, malting variety (provisional) developed by VicDPI and released in 2005. It is a tall, early to midseason variety, with a flowering time similar to or slightly later than Schooner. Buloke offers outstanding yield potential, typically exhibiting a 9% yield advantage over Schooner. It has good levels of resistance to scald and net form net blotch, better head retention than Schooner, but is susceptible to CCN. Buloke has grain

plumpness and test weight superior to Gairdner but slightly inferior to Schooner and Flagship, and exhibits sprouting tolerance similar to Gairdner. Buloke is available through AWB Seeds.

**Capstan<sup>®</sup>** is a very short CCN resistant feed variety with outstanding straw strength and head retention developed by the University of Adelaide Barley Program and released to growers in 2004. Capstan is best suited to high input farming systems targeting very high yield, and it also offers advantages in stubble management. Modest early vigour and potential for low test weights under drought stress should preclude it from drier districts. Capstan is available through ABB Grain.

**Flagship<sup>®</sup>** Developed and released from the University of Adelaide Barley Program in 2005, Flagship exhibits an outstanding malting quality profile, at least equivalent to the current elite European and Canadian varieties, and ideally suited to

**Table 1.** Yield of barley varieties in South Australian agricultural districts expressed as % Schooner (SARDI data, 2000–2006 inclusive). Number of observations in italics.

Variety	Yorke Peninsula		Murray Mallee		Mid North		Lower Eyre Peninsula		Central & Western Eyre Peninsula		South East	
<b>MALTING (SA)</b>												
Baudin	105	<i>30</i>	100	<i>19</i>	104	<i>18</i>	103	<i>12</i>	101	<i>29</i>	102	<i>12</i>
Buloke	111	<i>20</i>	114	<i>13</i>	106	<i>12</i>	109	<i>8</i>	104	<i>19</i>	105	<i>8</i>
Flagship	109	<i>30</i>	114	<i>19</i>	104	<i>18</i>	104	<i>12</i>	103	<i>29</i>	106	<i>12</i>
Gairdner	107	<i>35</i>	108	<i>22</i>	104	<i>21</i>	100	<i>14</i>	99	<i>29</i>	104	<i>14</i>
Schooner	100	<i>35</i>	100	<i>22</i>	100	<i>21</i>	100	<i>14</i>	100	<i>34</i>	100	<i>14</i>
Sloop	100	<i>35</i>	105	<i>22</i>	101	<i>21</i>	99	<i>14</i>	98	<i>34</i>	102	<i>14</i>
Sloop SA	103	<i>35</i>	108	<i>22</i>	102	<i>21</i>	100	<i>14</i>	100	<i>34</i>	102	<i>14</i>
WI 3416	116	<i>30</i>	113	<i>19</i>	112	<i>18</i>	109	<i>12</i>	104	<i>29</i>	107	<i>12</i>
<b>FEED</b>												
Barque	111	<i>35</i>	111	<i>22</i>	105	<i>21</i>	106	<i>12</i>	107	<i>34</i>	103	<i>14</i>
Capstan	114	<i>35</i>	111	<i>17</i>	113	<i>21</i>	108	<i>14</i>	107	<i>25</i>	105	<i>14</i>
Fleet	118	<i>20</i>	114	<i>13</i>	113	<i>12</i>	111	<i>8</i>	111	<i>19</i>	107	<i>8</i>
Keel	112	<i>35</i>	104	<i>22</i>	114	<i>21</i>	107	<i>14</i>	110	<i>34</i>	102	<i>14</i>
Maritime	112	<i>27</i>	107	<i>17</i>	107	<i>15</i>	109	<i>10</i>	105	<i>26</i>	105	<i>10</i>
Mundah	106	<i>15</i>	107	<i>11</i>	105	<i>9</i>	104	<i>6</i>	103	<i>15</i>	99	<i>6</i>
Yarra	118	<i>25</i>	105	<i>15</i>	110	<i>15</i>	109	<i>10</i>	108	<i>24</i>	104	<i>10</i>
<b>HULL-LESS</b>												
Torrens	95	<i>35</i>	85	<i>19</i>	91	<i>21</i>	93	<i>14</i>	90	<i>25</i>	91	<i>14</i>
<b>Schooner's yield (t/ha)</b>	<b>2.94</b>	<b>35</b>	<b>1.54</b>	<b>22</b>	<b>3.23</b>	<b>21</b>	<b>3.67</b>	<b>14</b>	<b>1.84</b>	<b>34</b>	<b>3.29</b>	<b>14</b>

**Table 2.** Disease reaction of selected barley varieties.

Variety	CCN resistance	CCN tolerance	Powdery mildew	Leaf scald	Leaf rust	Net blotch (spot form)	Net blotch (net form)	Black point
Barque	R	T	MR	S–VS	MS	R–MR	MS	S
Baudin	S	T	S–VS	MS–S	VS	MS–S	MR–MS	MS
Buloke	S	T	MR	MR	MS–S	MS–S	MR	S
Capstan	R	T	MR	MR/S*	MS	MS	MR–MS	MS
Flagship	R	T	MR	MS	MS–S	MR–MS	MR–MS	S
Fleet	R	T	MS	MR–MS	MS	MR–MS	MR	S
Gairdner	S	T	MR	R/S*	MS	S–VS	MR	MR
Hindmarsh	R	T	MS	MS	MS–S	S	MR	–
Keel	R	T	MR–MS	MR–MS	VS	R–MR	MS	S–VS
Maritime	R	T	S	MS–S	MS	MR–MS	R	S
Mundah	S	T	MS–S	S	S	S	MR	MR
Schooner	S	T	S	MS–S	S–VS	MS–S	MR	S
Sloop	S	T	S	S	S	S–VS	MR	MS
Sloop SA	R	T	S	S	S	S–VS	MR	MS
Sloop Vic	R	T	MR	S	MS–S	S	MR	MS
Torrens	R	T	MS	MS	MS	MR–MS	MR–MS	MS
Vlamingh	S	T	S	MR	MS–S	MS–S	MR	–
WI3416	R	T	MR	S	S	S	MS	S
Yarra	R	T	S	S	R	MS	MS	S–VS

R = Resistant; MR = Moderately resistant; MS = Moderately susceptible; S = Susceptible; VS = Very susceptible; \* = previously resistant varieties now susceptible to new races (in some areas). Information on disease reaction was supplied by the Field Crop Pathology Unit (SARDI). Contact Dr Hugh Wallwork (08) 8303 9382.

the high volume export markets across South East Asia. Flagship is a tall, early to midseason maturity variety, similar in plant type to Schooner and Sloop, but typically exhibits a 7% yield advantage over Schooner. Flagship has excellent early vigour and weed competitiveness, but modest straw strength with lodging

resistance similar to Schooner. Flagship is resistant to CCN and relative to Schooner and Sloop, offers improved foliar disease and *Pratylenchus neglectus* resistance. Flagship is susceptible to sprouting and timely harvest is recommended. Flagship is available through ABB Grain and PlantTech.

**Fleet<sup>®</sup>** (WI3804) is a new, CCN resistant feed barley, developed by the University of Adelaide as a direct replacement option for Barque and Mundah. Fleet has a long coleoptile, and combines the plant type of Barque, the disease resistance and yield potential of Keel, and the adaptation to deep sandy soils of Mundah. Fleet

**Table 3.** Agronomic characteristics of selected barley varieties.

Variety	Early vigour	Tillering ability	Standing ability	Height to head	Earliness to flower	Head retention	Ease of threshing	Boron tox tolerance*	Manganese efficiency
Barque	6	9	6	7	6	5	3	3	3
Baudin	5	8	6	4	5	7	–	–	–
Buloke	5	–	5	7	5	6	–	5	–
Capstan	4	9	8	3	4	7	7	3	–
Chebec	8	7	6	7	6	4	6	2	5
Dhow	4	7	8	4	4	7	7	4	2
Flagship	5	7	5	6	5	7	7	2	–
Fleet	6	8	6	7	6	5	6	–	–
Gairdner	4	9	6	5	4	8	6	2	3
Galleon	5	9	5	5	6	5	3	3	2
Hindmarsh	3	8	7	5	6	7	–	5	–
Keel	6	8	5	6	8	5	6	3	4
Maritime	8	7	5	6	6	7	7	2	7
Mundah	9	6	6	6	7	3	6	2	5
Schooner	6	7	6	7	5	3	7	2	5
Sloop	6	7	5	6	5	4	7	2	5
Sloop SA	6	7	5	7	5	3	7	2	6
Sloop Vic	6	7	4	7	4	3	7	6	5
Torrens	5	9	6	6	6	4	–	–	3
Vlamingh	–	–	6	7	6	–	–	–	–
WJ3416	–	–	5	6	6	5	–	–	–
Yarra	3	–	7	4	5	8	–	–	–

Relative values based on a 0–9 scale, a high figure indicating the variety expresses the character to a high degree. These values are only a guide; growing conditions greatly influence differences. \* A high boron tolerance score relates to the absence of leaf symptoms.

exhibits an excellent disease resistance profile, plump grain but lower test weights than other feed types, and a 5% yield advantage over Barque. Fleet seed is available through ABB Grain and the Australian Field Crops Association (AFCA).

**Gairdner**<sup>®</sup> is a malting variety released by the Department of Agriculture and Food WA in 1997 and is related to Franklin and Onslow. It is well adapted to medium to higher rainfall areas (>400 mm) with mid to late season maturity and strong straw. Gairdner has a thin grain, producing significantly greater screenings losses relative to Schooner and Sloop and is also around 1% lower in grain protein than these varieties. Gairdner has resistance to BYDV and powdery mildew, some resistance to leaf scald, but is very susceptible to net blotch (spot form) and susceptible to cereal eelworm. Seed is licensed to PlantTech.

**Hindmarsh**<sup>®</sup> (VB0324) is a new, early maturing (similar to Barque), semi dwarf, feed variety developed by VicDPI and released in 2006. Preliminary (2006) NVT testing in SA suggests Hindmarsh offers excellent yield potential and grain plumpness with resistance to CCN, moderate resistance to net form net blotch

but moderate susceptibility to scald and mildew and susceptibility to the spot form net blotch. Seed is available from AWB Seeds. Further evaluation of Hindmarsh in SA is needed but early results suggest it has some potential in many districts.

**Keel** was released from the University of Adelaide Barley Program in 1999 and is an early flowering, high yielding, feed quality variety. Keel produces plump grain with low screenings and has a higher test weight than Barque and Galleon but a greater susceptibility to black point. Keel is resistant to CCN and spot form net blotch, is moderately resistant to most races of leaf scald and has useful resistance to powdery mildew but is very susceptible to leaf rust and moderately susceptible to net form net blotch. Keel is suited to most areas and soils types but is less adapted to low fertility sandy textured soils. Keel seed is licensed to ABB Grain Ltd.

**Maritime**<sup>®</sup> is a tall, early maturing feed variety with CCN resistance released by the University of Adelaide in 2004. Maritime was developed specifically for manganese deficient soils where it exhibits a significant yield advantage. Maritime has a yield potential between Barque and Keel on other soil types, and offers a good disease resistance profile but is susceptible

to the barley grass form of stripe rust. Maritime has excellent physical grain quality and early vigour, and is a good option for lower rainfall environments where tall straw and high test weights are sought. Maritime is available through ABB Grain.

**SloopSA**<sup>®</sup> is a malting variety developed by the University of Adelaide and is a CCN resistant 'Sloop type' derived from Sloop and Chebec. With the exception of CCN resistance it is agronomically similar to Sloop with a very similar quality profile and slightly improved grain yield. It is susceptible to head loss under some conditions and should be harvested with priority unless windrowed. SloopSA offers a malting alternative to the CCN resistant feed varieties, Barque, Chebec, Galleon and Keel but is now well outclassed by Flagship. SloopSA is commercialised by Graintrust.

**Vlamingh**<sup>®</sup> was developed and released by Department of Agriculture and Food WA in 2006. Vlamingh has completed malting accreditation in WA and is widely adapted with a similar phenology and disease resistance profile to Gairdner, although earlier flowering when sown in June or July. It has yields generally greater than Baudin and Gairdner and

has plumper grain than these varieties. It is currently being evaluated in SA NVT trials and needs further evaluation. Seed is licensed to the Grain Pool of WA.

**Yarra**<sup>®</sup> is a moderately late maturing, semi dwarf, feed variety developed by VicDPI and released in 2005. Yarra exhibits prostrate early growth with modest early vigour, and hence possible poor weed competitiveness, but excellent yield potential, good straw strength and very plump grain albeit very susceptible to black point. Yarra has outstanding resistance to leaf rust, and is resistant to CCN, however it is rated as susceptible to very susceptible to

leaf scald and has moderate susceptibility to both forms of net blotch. Yarra is available through ABB Grain.

**WI3416** is a potential new malting quality line developed by the University of Adelaide and suitable for domestic and some export brewing markets. Across many seasons, WI3416 has demonstrated wide adaptation, high yield, good physical grain quality and an acceptable disease resistance profile although moderately susceptible to net form net blotch. Recent seasonal conditions in SA have slowed industry malting and brewing evaluation trials. The projected commercial release is now 2009.

**Hannan**<sup>®</sup> (WABAR2321), **Lockyer**<sup>®</sup> (WARBAR2288), **Roe**<sup>®</sup> (WARBAR2310) These three feed varieties were released by DAFWA in August 2007. Hannan is tall with early maturity, Lockyer is a semi-dwarf with mid to late season maturity and Roe a medium strawed, very early flowering replacement for Mundah in WA. While currently being evaluated within South Australian NVT trials, the adaptation and potential of these varieties is yet to be ascertained. Seed of these varieties is licensed to COGGO Seeds in WA with an eastern states distributor yet to be appointed.