

Summary of Wimmera barley variety demonstrations

Barley variety demonstration sites were established on three Wimmera farms to compare and contrast the suitability of some emerging and current commercial varieties for the Wimmera region. Sites were located at Rupanyup South, Lubeck and Kalkee. Summary of results from all sites is presented below and individual site reports on the following pages. All of the demonstrations were set up using the nearest neighbour design in which Gairdner was used as the control variety at every site. This design uses minimal replication and site results reflect results from 2004 only, therefore use this data in conjunction with results from long-term, replicated trial sites before choosing a variety.

Table 1. Summary of barley yield and quality from 4 sites in the Wimmera.

Variety	No. Sites	Average yield (t/ha)	Yield as % Gairdner	Prot'n %	Retention % >2.5mm	Screenings % <2.2mm	Grade
WI3586	3	2.3	128	12.5	27.5	30.4	F3
WI3408	3	2.2	125	13.0	28.1	28.0	F3
Sloop							F2
Vic	3	2.1	117	13.1	39.6	18.3	
VB0021	3	2.0	114	12.5	32.3	22.9	F2
Baudin	3	1.9	109	12.6	29.6	26.6	F3
Quasar	3	1.9	107	13.3	29.4	19.6	F2
Gairdner	3	1.8	100	13.2	29.2	24.1	F2
Arapiles	1	1.7	96	12.6	17.9	15.6	F2
VB0105	2	1.4	79	12.2	13.4	22.3	F2

Use caution when interpreting these results. They are the averages only across the three sites tested. Note that not every variety was represented at every site.

The sites were much lower yielding and produced poorer quality grain compared to the four sites evaluated in 2003. Yields over the three 2004 sites ranged from 1.4-2.3t/ha compared to a mean yield across the 2003 sites of 4.4t/ha. Quality was also much poorer with only one of the three sites, Lubeck, producing malt grade barley. This site received more rainfall throughout the growing season than the other two sites and all varieties performed the best here, producing higher yields and better quality.

These results reflect an unfavourable season for barley production in the Wimmera, largely due to below average rainfall throughout the growing season but particularly in spring. The average October rainfall across the three sites was 7mm which hindered grain fill. In addition to low rainfall crops were also put under heat stress (38°C 12/10) and frost (-4°C 16/10). Clearly these conditions had an effect on grain size as reflected by the low retention and high screenings results. Protein was also generally high across the three sites as expected with below average yields and a harsh finish.

The difference in seasonal conditions between the Lubeck site and the other two sites at Rupanyup and Kalkee mean trends on varietal performance are difficult to identify.

WI3586, WI3408 and VB0105 will be increased by seed growers in 2005 and available as a commercial malt variety in 2006. WI3586 produced the lowest retention

in the Wimmera on farm demonstrations in 2003, but grain size was equivalent to other varieties at each site in 2004. 2003 Wimmera demonstrations also showed WI3408 was significantly lower yielding than Gairdner, but with equivalent quality. VB0105 was not tested in 2003. Similar evaluation of these varieties in 2005 will be important for growers to determine the suitability of these new varieties for their region.

VB0021 will also be increased in 2005 for release in 2006 as a feed quality variety. VB0021 was amongst the highest yielding varieties in 2003 and 2004 Wimmera demonstrations.

Acknowledgements

Peter & Tim Deutsher, Graeme & Paul Oxbrow and David Jochinke for once again volunteering their time and resources to host the trial sites.

Anton Mannes (Tylers Hardware & Rural Supplies) for assistance with site selection, harvest and support throughout the season.

Lubeck Barley Demonstration

Method:

Seven varieties were sown at 70kg/ha in the nearest neighbour design with Gairdner as the control.

60kg/ha of MAP + 2.5%Zn was applied at sowing. No further fertiliser was applied.

Chemical:

800ml/ha Dual gold (3rd June)

1l/ha Diuron (3rd June)

25g/ha Glean (7th July)

90ml/ha Dimethoate (7th July)

Results:

Table 1. Barley yield and quality, Lubeck.

Variety	Yield (t/ha)	Protein (%)	Retention (%)	Screenings (%)	Grade
WI 3586	4.1	11.7	65.8	4.2	M2
WI 3408	4.0	12.7	76.2	2.9	M3
Gairdner*	3.9	12.6	72.3	3.6	M3
Baudin	3.5	12.4	65.8	7.1	M3
Quasar	3.4	13.2	67.8	4.9	F1
Sloop Vic	3.3	13.6	82.7	2.7	F1
VB0021	3.3	12.4	75.2	3.6	M3
LSD (5%)	0.9	1.6	37.0	5.6	
CV %	5.3	-	-	-	

* Control variety

Interpretation

- This site produced barley of superior yield and quality for all the varieties than the other two sites.
- Yields at the site ranged from 3.3-4.1t/ha and there were no significant differences between the varieties.
- All varieties except Quasar and Sloop Vic were acceptable as malting quality. The protein content in Quasar and Sloop Vic was too high for malt and was significantly higher than WI3586.
- Grain size produced at this site was better than any other site established this season. All varieties would have made a malting grade based on grain size measured as screenings and retention, it was only protein content that pushed two of the varieties into the feed bin.

Location

Peter and Tim Deutscher
Lubeck

Growing Season Rainfall

Ave: 324mm

2004: 244mm

Soil

Type: Mixed grey loam

pH (H₂O): 7

Sowing Date

3rd June 2004

Paddock History

2003: Field Peas

2002: Wheat

2001: Canola

Kalkee Barley Demonstration

Method:

Nine varieties were sown at 50kg/ha in the nearest neighbour design with Gairdner as the control.

70kg/ha of 26:12 was applied at sowing. No further fertiliser was applied.

Chemical:

1.2l/ha TriflurX (13th June)
85ml/ha Dimethoate (14th July)
4g/ha Ally (5th September)
350ml/ha MCPA LVE (5th September)
75ml/ha Lontrel (5th September)
2g/ha ultra zinc (5th September)

Location

David Jochinke
Kalkee Rd, Horsham

Growing Season Rainfall

Ave: 280mm
2004: 203mm

Soil

Type: Grey clay
pH (H₂O): 8.4

Sowing Date
15th June 2004

Paddock History

2003: Lentils
2002: Ley
2001: Barley

Results:

Table 1. Barley yield and quality, Kalkee.

Variety	Yield (t/ha)	Protein (%)	Retention (%)	Screenings (%)	Grade
Sloop Vic	2.1	12.1	32.5	10.3	F1
VB0105	2.1	11.0	20.7	10.3	F1
VB0021	2.0	11.7	20.0	16.0	F2
Baudin	1.8	11.5	20.5	26.8	F3
WI3408	1.8	12.3	5.8	31.2	F3
Arapiles	1.7	12.6	17.9	15.6	F2
Quasar	1.7	12.3	15.0	20.9	F2
WI3586	1.7	12.1	15.8	19.9	F2
Gairdner*	1.2	13.2	27.6	18.2	F2
LSD (5%)	0.4	1.2	14.1	9.4	
CV %	7.5	-	-	-	

* Control variety

Interpretation

- Gairdner was significantly lower yielding than all other varieties at this site. There were no differences in yield between the remaining varieties.
- Quality at this site was outside of malting grade, primarily due to low retention. Sloop Vic & VB0105 achieved Feed1 grade while the remainder were deliverable to the Feed2 and Feed3 bins due to high screenings.
- Sloop Vic had superior retention than WI3408, Arapiles, Quasar and WI3586.
- Gairdner showed comparable grain size to other varieties tested at this site but was the lowest yielding variety.

Rupanyup Barley Demonstration

Method:

8 varieties were sown at 70kg/ha in the nearest neighbour design with Gairdner as the control.

50kg/ha of MAP + Zn (2.5%) was applied at sowing and 70kg/ha urea was pre-drilled at the site.

Chemical:

1.2l/ha Triflur X (27th May)

350ml/ha MCPA LVE (31st July)

75ml/ha Lontrel (31st July)

Results:

Table 1. Barley yield and quality, Rupanyup.

Variety	Yield (t/ha)	Protein (%)	Retention (%)	Screenings (%)	Grade
*Gairdner	1.1	13.5	3.0	48	F3
WI3586	1.0	13.7	1.0	67	F5
Sloop Vic	0.92	13.5	3.6	42	F3
WI 3408	0.85	13.9	2.2	50	F3
VB 0021	0.84	13.3	1.5	49	F3
VB0105	0.74	13.3	6.0	34	F3
Quasar	0.74	14.3	5.5	33	F3
Baudin	0.49	13.8	2.6	46	F3
LSD (5%)	0.24	ns	ns	ns	
CV%	8.4	-	-	-	

* Control variety

Interpretation

- There were few significant differences between the varieties for yield, although Baudin was significantly lower yielding than all other varieties grown at this site.
- Grain size was an issue at this site with retention for all varieties 6% or less and screenings at least 30%.
- Protein content was particularly high, above 13% for all varieties – too high for malting specifications.
- These quality issues show that seasonal conditions and not varietal characteristics were stronger in dictating performance at this site. The farm experienced much below average growing season rainfall combined with frost and hot weather during flowering/grain fill period in October.

Location

Paul Oxbrow

Florences Rd Rupanyup

Growing Season Rainfall

Ave: 280mm

2004: 207mm

Soil

Type: Black self mulching

pH (H₂O): 8

Sowing Date

1st June 2004

Paddock History

2003: Lentils

2002: Wheat

2001: Canola