

3.3.4 Barley variety trial - Bairnsdale, Vic

Location: SFS Dunkeld Research Site

Funding:

This was an SFS Gippsland Branch Funded Trial

Summary of findings:

- Westminster and Oxford were the highest yielding varieties.
- Hindmarsh was the lowest yielding variety.

Researcher(s): Shayne Mathews, DPI Vic, Nicole Hellyer & John Waller, SFS, Gippsland

Author(s): Shayne Mathews, Annieka Paridaen, Elaina Vandermark

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Background/Aim:

To evaluate a range of commercially available varieties for yield and grain quality. These reflect the most widely grown varieties in the area and include others that may be considered in the future. They include a number of different grades, reflecting market options in Southern Victoria.

Rainfall:

2011 Total: 737.4 mm
Avg. Annual: 644.7 mm
2011 G.S.R.: 496 mm
Avg. G.S.R.: 444.1 mm

Paddock History:

2009: Canola
2010: Winter fallow, Summer Millet

Soil Characteristics:

Soil Type: Brown Sodosol – Sandy loam over medium-heavy clay subsoil
pH (1:5 CaCl): 6.1
Deep N (kg N/ha): 18.7 (0-50cm)
P (Colwell) (mg/kg): 35
K (Colwell) (mg/kg): 81
Organic Carbon %: 1.8

Yield Potential: The Water Limited Yield Potential (WLYP) for this trial was 8.5t/ha

*WLYP: Calculated using WUE values of 15kg/ha per mm rainfall for Wheat/Barley and 7kg/ha per mm rainfall for Canola, 130mm assumed evaporation and GSR of 30% Jan & Feb + 50% Mar (only if >20mm) + April to November. This calculation makes an allowance for a % of stored moisture from the summer

Variety: Various

Sowing rate: Aiming to establish 160 plants/m²

Sowing date: 18-May-11

Harvest: 3rd-5th Jan-12

Plot size: 20m x 1.26m x 4 reps.

Plots/tillage: Flat layout. Cultivated with Vaderstad Topdown 12th May 2011 prior to sowing

Fertiliser: 18-May-11 DAP 80kg/ha
SOP 30kg/ha
11-Oct-11 Urea 100kg/ha
2-Nov-11 Urea 60kg/ha

Herbicide: 29-Mar-11 Roundup 2.5l/ha,
Surpass 0.415l/ha,
Goal 75ml/ha
12-May-11 Treflan 800ml/ha incorporated with Vaderstad Topdown
23-Aug-11 Tigrex 1l/ha

Fungicide: 27-Sept-11 Prosaro 150ml/ha.
Hasten 1L/ha
11-Nov-11 Prosaro 300ml/ha,
Hasten 1L/ha

Treatments: Various crop varieties, some at two sowing times

Measurements: Grain yield and grain quality components.

Tillage type: The trial was sown with SFS Gippsland's Agriplow cone seeder on 21cm row spacing's using 2.5cm baker boot and knifepoints. Millet stubble was cut and baled prior to sowing.

Diseases: There was a little scald and leaf rust in susceptible varieties, but fungicide applications kept disease levels under control.

Results and discussion:

Table 1. Yield and quality performance for barley varieties in Bairnsdale.

Variety	Yield (t/ha)		Protein (%)	Test Weight (kg/hl)	Screening (%)
Westminster	7.573	a	11.45	62.35	1.5
Oxford	6.985	a	10.95	62.9	1.8
Gairdner	6.005	b	12.73	62.5	1.8
Capstan	5.858	b	12.43	63.3	1.8
Commander	5.84	b	11.18	58.15	3.5
Hindmarsh	4.573	c	11.75	61.7	3
<i>LSD (P=.05)</i>	<i>0.82</i>		<i>0.94</i>	<i>1.96</i>	<i>1.01</i>
<i>CV</i>	<i>8.89</i>		<i>5.33</i>	<i>2.11</i>	<i>30.47</i>

Means followed by same letter do not significantly differ (P=.05, LSD).

Westminster (7.6t/ha) and Oxford (7.0t/ha) were the highest yielding varieties, which was significantly higher than Gairdner, Capstan and Commander (5.8-6t/ha). Hindmarsh (4.6t/ha) was significantly lower yielding than all other varieties.

Longer maturity varieties generally out-yielded the shorter maturity varieties, which may have been a reflection of the long/ soft growing season experienced in Gippsland.

More disease resistant varieties out-yielded more susceptible varieties for diseases observed.