

3.5.2 Oats variety trial - Bairnsdale, Vic

Location: SFS Dunkeld Research Site

Funding:

This was an SFS Gippsland Branch Funded Trial

Researcher(s):

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Summary of findings:

- There were no significant differences in yield or grain quality between oat varieties.
- Targa (a grazing/hay quality oat) had the highest grain yield (4.3t/ha) and lowest screenings (2.7%) while Echidna had the lowest grain yield (3.7t/ha) and highest screenings (4.6%).
- Test weights of all varieties were low.

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Background/Aim:

To evaluate a number of commercially available oat 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. The trial includes grain only and dual purpose varieties.

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): 6.4
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
2-Sept-11 Urea 100kg/ha
11-Oct-11 Urea 60kg/ha

Herbicide: 29-Mar-11 Roundup 2.5l/ha,
Surpass 0.415l/ha,
Goal 75ml/ha
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.

Results and discussion:

Table 1. Yield and quality performance of oat varieties at Bairnsdale.

Variety	Yield (t/ha)		Protein (%)	Test Weight (kg/hl)	Screening (%)
Targa	4.325	a	11.05	46.65	2.7
Yallara	3.953	a	11.39	47.38	3.79
Mitika	3.851	a	11.18	47.05	3.93
Echidna	3.668	a	10.85	46.1	4.55
LSD ($P=.05$)	1.3527		0.884	3.087	2.469
CV	21.01		4.88	4.05	40.47

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

There were no significant differences in yield or grain quality components between oat varieties. Yields ranged from 4.3t/ha to 3.7t/ha, with Targa achieving the highest yield and Echidna producing the lowest. Similarly Targa had the lowest screenings (2.7%) and Echidna the highest (4.55%) but none of these differences were significant and all were in the desired quality range. Test weights of all oat varieties was low and no varieties reached quality standard weights desired for both milling and feed. Visual observations prior to harvest showed that Mitika dropped more mature seed on the ground than other varieties, which may be a consideration if harvest is delayed after crops are physiologically mature.