

Condobolin, oat varietal yield and quality trial

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Condobolin

This trial was part of the National Variety Testing Program, sponsored by GRDC.

Key Messages

- The extremely late break to the season highlighted maturity differences very clearly.
- Yield varied from 2.2 -4.0t/ha.
- Protein varied from 13.9% (Mitika, Echidna) to 15.7% (Quoll). Highlighting the potential for oats in a feedlot ration. Mitika has low lignin content (hull) and Quoll has medium lignin (hull) content.
- Screenings varied from 18.0% (Quoll) to 32.1 % (Potoroo). High values were because of the short growing season.
- The test weight varied from 47.6kg/hl (Potoroo) to 54.9kg/hl (Mortlock). Relatively low seed weights confirmed the short season trend shown by high protein and high screenings values.

Background

The aim of this trial was to provide localised data on the yield and quality response of released and near release oats lines.

Methods

The trials were sown into a long fallow paddock (from lucerne) into good soil moisture on the 17th June 2005 and harvested on the 12th December 2005.

The trials were sown on a red loam soil and consisted of 8 varieties. All varieties sown in the trial were not grazed because of the late sowing date.

The treatments were replicated 3 times. Plot size was 2m X 15m.

Varieties were sown at a seeding rate of 60kg/ha with 100kg/ha of Granulock 12 (12N; 16P; 5S).

Results

Table 1. NVT oat breeding trial

| | Yield (t/ha) | Test wgt (kg/hi) | Protein (%) | Screenings % |
|-----------------|--------------|------------------|-------------|--------------|
| Possum | 4.0 | 54 | 14.8 | 18.7 |
| Mitika | 3.8 | 53.2 | 13.9 | 22.2 |
| Echidna | 3.5 | 49 | 13.9 | 26.7 |
| Quoll | 3.4 | 48 | 15.7 | 18 |
| Potoroo | 3.1 | 47.6 | 14.5 | 32.1 |
| Euro | 2.6 | 52 | 14.6 | 24 |
| Numbat | 2.2 | - | - | - |
| Mortlock | 2.2 | 54.9 | 15.4 | 24.5 |

Grain quality analysis was not done on Numbat.

Table 2. Oat breeders trial

| Variety | Yield (t/ha) |
|------------------|--------------|
| Mitika | 3.41 |
| Possum | 3.04 |
| Wandering | 2.98 |
| Potoroo | 2.70 |
| Echidna | 2.64 |
| Carrolup | 2.49 |
| Quoll | 2.35 |
| Dalyup | 2.25 |
| Euro | 2.01 |
| Mortlock | 1.81 |
| Numbat | 1.53 |

Discussion

Growing season rainfall for Condobolin was 357mm (June - November). Although the season started quite late, the total in crop rainfall was good. Yields for the short season varieties were helped by cool and wet conditions through September and October. The longer season varieties did not perform as well.

There was high protein contents in all varieties in this trial. Protein content values ranged from 14 - 16%. This is primarily because of the short growing season and the small grain size. But it does highlight the potential of oats as a good feed grain for livestock. Mitika has low lignin content (hull).

Screenings values and test weights, also reflected the short growing season. Small grain size resulted in screenings values from 20 - 30%.

There were also oat breeders trials done in the same paddock (Table 2). These trials were planted two weeks later, but showed the same trends. Mitika, Possum and Wandering were the top yielding lines. The longer season varieties like Numbat, Mortlock and Euro were also lowest yielding.

The trials will be repeated this year.

Acknowledgements

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Trial data was taken from the ACAS website (www.acasnvt.com.au).