

Noodle wheat agronomy demonstration

Method

Two replicates of three noodle wheat varieties were sown with the milling wheat Mitre as a benchmark variety for yield.

The sowing rate was 90kg/ha except for Rosella, which was sown lighter due to complications.

Half of the 200m long plots had 33kg/ha of nitrogen (MAP + urea) applied at sowing; the other half had only 5kg/ha nitrogen (MAP) applied at this time.

A pre-sowing soil test showed 101kg/ha of available nitrogen in the top 60cm and a follow up deep N test in crop showed 218kg/ha of available nitrogen.

Decisions on input levels were made by the Wal Wal Lubeck TOPCROP Group with the aim of maximising yield and quality.

Chemical

600ml/ha Roundup CT[®] and 3g/ha Ally[®] (March 21)

1l/ha Roundup[®] (June 10)

1l/ha Triflur X[®] (June 19)

700ml/ha LVE MCPA[®] (August 16)

250ml/ha Tilt[®] (September 30)

Results

Table 1. Wheat yield and quality, Lubeck.

Variety	Urea at sowing (kg/ha)	Shoots /m ²	Yield (t/ha)	Protein (%)	Screenings (%)	Test weight (kg/hL)	Grade
Mitre	0	687	4.4 a	11.8 bc	5.7 ab	74.5 a	H2 ⁺
Lorikeet	0	617	4.2 ab	11.2 c	3.8 a	75.0 a	ANW1
Mitre	60	599	4.2 ab	13.1 a	8.0 b	73.2 a	AGP1
Sunsoft 98	60	713	4.2 ab	13.2 a	6.0 ab	75.7 a	AGP1
*Rosella	0	639	4.1 b	12.0 bc	8.4 b	68.0 b	AGP1
Lorikeet	60	626	4.0 bc	12.3 ab	7.6 ab	73.3 a	AGP1
Sunsoft 98	0	656	3.8 c	13.2 a	6.0 ab	75.7 a	AGP1
*Rosella	60	625	3.8 c	13.2 a	16.8 c	68.0 b	FED1
LSD (5%)	-		0.2	1.0	3.9	3.9	-
CV %	-	-	1.7	3.3	21.9	2.2	-

Note: values followed by the same letter are not significantly different (p<0.05)

* Rosella plots were sown at a lower rate than other varieties due to the presence of MAP with the seed supplied for the trial. This may confound the Rosella results.

⁺ Dockage for screenings applies.

Location

Graham & Nathan Gellately
Murtoa-Glenorchy Rd,
Lubeck.

Growing Season Rainfall

Ave: 325mm

2003: 300mm

Soil

Type: Wimmera grey clay

pH (H₂O): 7.5

Sowing Date

June 18, 2003

Paddock History

2002: Canola

2001: Vetch green manure

Interpretation

- Noodle wheat production was not suited to this paddock due to the high soil nitrogen levels. Milling wheat production was a much better choice for this paddock as evidenced by the performance of Mitre. High soil nitrogen levels resulted in protein levels too high for the noodle varieties to achieve their ASWN potential for all plots at the site except Lorikeet with no urea at sowing.
- Mitre, Lorikeet and Rosella showed a protein response to additional N fertiliser at sowing. Mitre would have achieved AH1 with the extra nitrogen if the test weight was acceptable, however the aim for the noodle varieties was to lift yield, not protein.
- There were only small differences in yield across the site and no strong relationship with nitrogen application or shoots/m². This is perhaps a result of moisture deficit after flowering, reducing the ability to achieve potential yield.
- Screenings were generally high at this site although Rosella with added nitrogen at sowing produced an exceptionally high result. Rosella is a later maturing variety and the higher nitrogen rate may have caused haying off. Alternatively the high screenings could be related to the production of more tertiary tillers as a result of the low sowing rate, as evidenced by the small range in shoots/m².
- Potential yield based on WUE at this site at sowing was 4.3t/ha (WUE = 20, GSR = 325, no stored moisture). There was enough nitrogen available in the soil to achieve this yield (@10.5% protein) before any further nitrogen was applied or contributed through mineralisation. As the in-crop soil test revealed, there was an over-supply of nitrogen (218kgN/ha, 1/08/03) at this site to achieve ASWN or ASWS at this site with a yield potential of 4.3t/ha.

Table 2. Wheat yield and quality – topdressing test strip demonstration, Lubeck.

Urea topdressed (kg/ha)	Yield (t/ha)	Protein (%)	Screenings (%)	Test weight (kg/hL)	Grade
50	4.7	12.8	4.0	74.04	H2
100	4.6	11.4	3.4	76.86	APW
150	4.7	11.6	3.7	76.48	H2

- 3 further test strips at this site were topdressed at Z30 with 50kg/ha, 100kg/ha and 150kg/ha urea applied to Mitre that received zero urea at sowing. This was a demonstration only and was not replicated.
- The topdressing treatments appear to have had no impact on yield, protein, screenings or test weight at this site, demonstrating that nitrogen levels were adequate for milling wheat production without the addition of any further nitrogen.