

# 9a. SARDI Conmurra Barley Nitrogen Trial

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Funding Body: SARDI

## KEY MESSAGES:

- SARDI funded and managed a barley nitrogen trial at Conmurra to value add to the MFMG field day.
- A nitrogen response was observed at Conmurra in 2016.
- Bass out-yielded Compass at the two lower N rates.
- Applying 100 kg N/ha to Bass resulted in a similar yield to applying 200 kg N/ha, whilst maintaining maximum grade, MALT 1.
- Compass was highest yielding at 7.0 t/ha and 200 kg N/ha.
- All Compass treatments achieved F1.

## Trial Background

In 2016 SARDI funded a barley nitrogen trial at Conmurra to value add to the MFMG field day. The trial evaluated a malting barley (Bass) and a feed barley (Compass) and three different nitrogen regimes.

## Trial Design

The trial was sown on 17 May. Bass (malting barley) and Compass (feed barley) were used in the trial. Nitrogen (N) was applied at two different timings; at sowing and at growth stage (GS) 31 (5 August) (Table 1). All treatments were sown with 20 kg N/ha. Varying single applications of N were applied at GS 31.

**Table 1:** The three different treatments evaluated at Conmurra, product applied at sowing and the rates applied at growth stage 31.

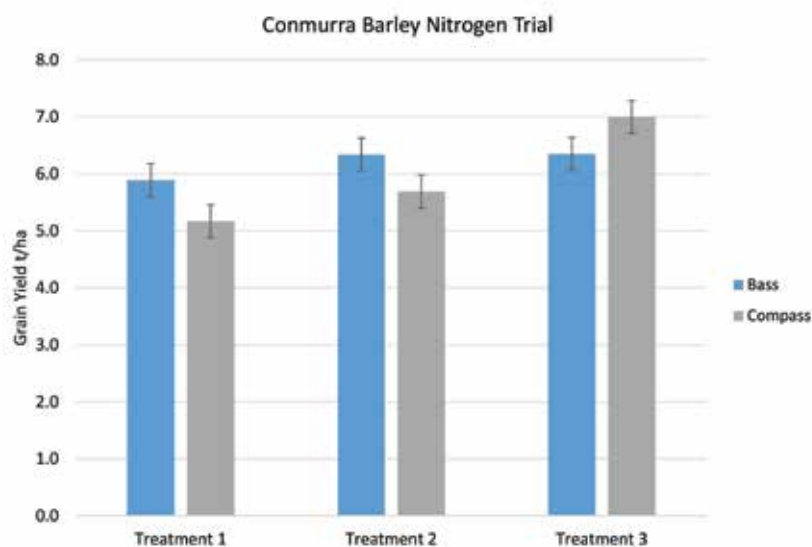
	Kg N/ha applied at sowing	Amount of N (kg N/ha) applied at GS 31	Total N applied kg N/ha
Treatment 1	20	30	50
Treatment 2	20	80	100
Treatment 3	20	180	200

## Trial Results

Grain yields averaged 6.1 t/ha and significant differences were observed between variety X treatments (P value 0.012, l.s.d 0.64, cv% 2.3) (Figure 1). Bass out-yielded Compass at the two lower N treatments, but Compass was highest yielding at Treatment 3 (200 kg N/ha), with 7.0 t/ha.

Yields of Bass did not significantly increase with N. Bass achieved MALT 1 at Treatment 1 and Treatment 2. Applying 100 kg N/ha resulted in a similar yield to 200 kg N/ha, whilst maintaining maximum grade (Table 2). Bass at 200 kg N/ha lowered grain quality to F1.

Yields of Compass increased with N. All Compass treatments achieved maximum grade of F1 (Table 2).



**Figure 1:** Conmurra barley nitrogen trial grain yield (t/ha).

**Table 2:** Conmurra barley nitrogen grain quality and grain grade achieved.

Variety X Treatment		Protein %	Test Weight kg/hl	Retention % > 2.5 mm	Screenings % < 2.2 mm	1000 grain weight g/1000 seed	Grade Achieved
Bass	Treatment 1	11.2	73.7	98.9	0.2	50.7	MALT 1
	Treatment 2	11.7	74.3	98.4	0.6	50.5	MALT 1
	Treatment 3	13.2	73.6	93.3	2.0	48.3	F1
Compass	Treatment 1	10.2	70.6	95.0	0.9	48.6	F1
	Treatment 2	10.5	70.6	96.0	1.0	50.0	F1
	Treatment 3	11.5	70.9	91.5	1.9	47.5	F1

## ACKNOWLEDGEMENTS

- SARDI's South East New Variety Agronomy Team, based at Struan, who manage the Trials;
- Hocking Family, as the co-operating growers.

