

TWINN CROP TRIAL



Wheat: Goomalling, Western Australia, 2009

An independent replicated wheat trial was conducted in Goomalling, Western Australia, to measure the effects of TwinN on yield and protein levels when combined with different applications of synthetic nitrogen fertilisers.

KEY RESULT

- ◆ A comparison of treatments with the basal mixed fertiliser, plus or minus TwinN, showed that a single application of TwinN significantly increased yield by 20% (324 kg/ha).
- ◆ A comparison of plots receiving the basal mixed fertiliser plus 30 L/ha UAN versus plots receiving the basal mixed fertiliser plus 15 L/ha UAN plus TwinN showed that the TwinN plus a lower rate of UAN produced a 13% (227 kg/ha) increase in yield.
- ◆ The highest protein level (9.5%) occurred in a TwinN treated plot.

TREATMENTS

Treatments and rates applied within wheat paddock, Goomalling TwinN Trial, June 2009

Treatment	MacroPro Ex	UAN	TwinN
1	80 kg/ha	30 litre/ha	No
2	80 kg/ha	No	4-5 leaf
3	80 kg/ha	15 litre/ha	4-5 leaf
4	80 kg/ha	No	No

	N	P	K	S	Ca	Mg	Cu	Zn	Mo
MacroPro Extra	9.7	11.2	11.2	10.2			0.1	0.2	
UAN	42.5								

RESULTS

	Treatment 3 TwinN + 15 L/ha UAN	Treatment 2 TwinN, No UAN	Treatment 1 30 L/ha UAN, No TwinN	Treatment 4 No TwinN or UAN
Yield (kg/ha)	1996	1920	1769	1596
Protein (%)	9.5	9.0	9.1	8.9

LSD $p < 0.05$ = 205.64 for yield

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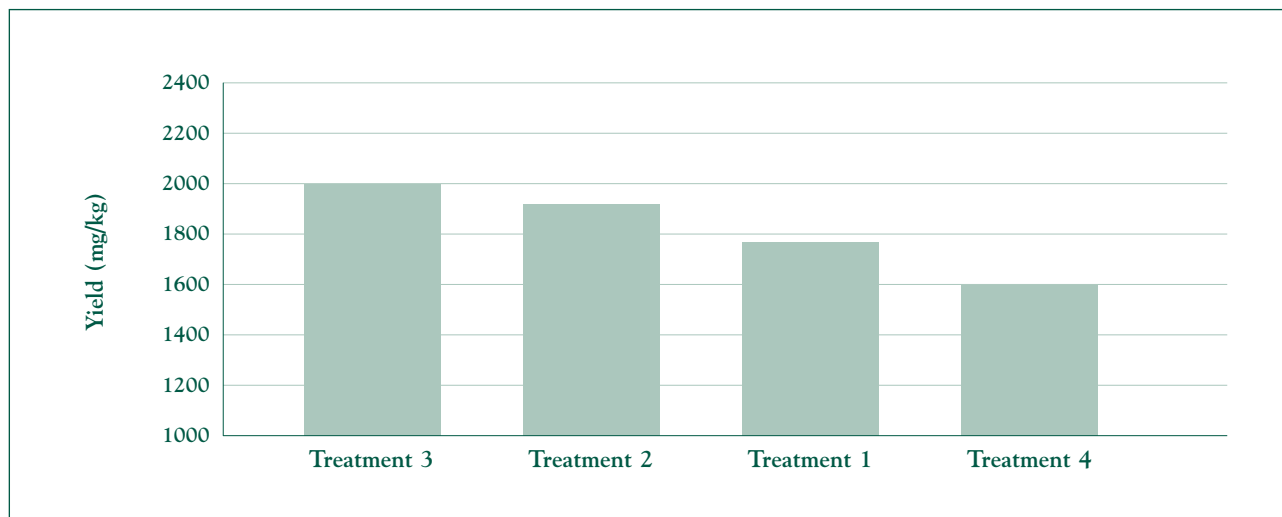
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Figure 1: Yield response to different treatments, TwinN Goomalling Wheat Trial 2009



TwinN plus 15 L/ha UAN (T3) produced the highest yield in the trial, producing 13% higher grain yield than the standard 'high Nitrogen' treatment (30 L/ha UAN, T1) for this district. A direct comparison between plots that received the basal MacroProExtra, with or without TwinN, showed that TwinN application (T2) drove a large 20% increase in yield over the non-TwinN plots (T4).

This trial was used to demonstrate the efficacy of TwinN in a low input cost/low yield crop system. Even with low nitrogen fertiliser prices and low wheat grain prices the use of TwinN increased profitability.

TwinN Goomalling Wheat Trial 2009: TwinN-treated plot pictured on the right.



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TRIAL LAYOUT

The experiment was conducted within a 20 ha paddock. Four treatment plots, each measuring 50 x 7.5 metres, were arranged within three replicate blocks. The four treatments were allocated randomly within each block. The trial was conducted and analysed by Meag Soil Consultancy.

All plots received 80 kg/ha of MacroProEx at planting. TwinN and UAN were reapplied at the 4-5 leaf stage to the relevant plots. They were applied separately - not tank mixed.

TwinN Application

TwinN was applied once on 23 July 2009, at Z16 growth stage (4-5 leaf). The application was made in 50 L/ha water using a boomspray and TT11002 nozzle at 1-2 bar to give a coarse droplet. The application was made at 10 am, 15°C, onto a dew that lasted until mid-afternoon.

Site Details

Variety	Wyalkatchem
Planting Date	8 June 2009
Site History	Wheat
Harvest Date	16 November 2009
In Crop Season Rainfall	260mm (Apr-Oct 09)
Average In Crop Season Rainfall	300mm
Average Annual Rainfall	370mm
Soil	Loam, Carbon 1.2%, pH 5.2