



### Twin N Trial Results (Summary)

Location: University of Queensland (UniQuest)  
 Crop: Dryland Wheat (Var. Rees)  
 Trial design: Fully replicated, randomized block design.  
 Planting date: 23/06/05  
 Twin N Application: 13/07/05  
 Twin N rate: 1 Vial / 10Ha  
 Harvest: 27/10/05

(Figure 1)

#### Plant Biomass (End of Vegetative Stage – Flowering 15/09/05) Dry matter (g)

N rate (kg/Ha)	No Twin N	Twin N	Biomass Increase %
0 kg	98.95	117.61	<b>18.85%</b>
15 kg	117.72	125.96	6.90%
30 kg	121.83	124.37	2.00%

(Figure 2)

#### Grain N %

N rate (kg/Ha)	No Twin N	Twin N	Grain N Increase %
0 kg	2.0%	2.6%	<b>32.0%</b>
15 kg	2.4%	2.6%	8.0%
30 kg	2.5%	2.8%	12.0%

(Figure 3)

#### Residual Soil Nitrate NO<sub>3</sub> Post Harvest (mg/kg)

N rate (kg/Ha)	No Twin N	Twin N	Soil N Increase %
0 kg	9.0	11.8	<b>31.0%</b>
15 kg	7.9	10.0	26.0%
30 kg	8.0	14.0	75.0%

(Figure 4)

**Plant Nitrogen % (26/08/05)**

N rate (kg/Ha)	No Twin N	Twin N	Leaf N Increase %
0 kg	2.2%	2.8%	<b>27.0%</b>
15 kg	2.6%	2.8%	7.6%
30 kg	3.1%	2.9%	-6.8%

(Figure 5)

**Plant Nitrogen % (15/09/05)**

N rate (kg/Ha)	No Twin N	Twin N	Leaf N Increase %
0 kg	1.2%	1.9%	<b>58.0%</b>
15 kg	1.3%	1.9%	46.0%
30 kg	2.0%	1.8%	-11.0%

(Figure 6)

**Plant Nitrogen % (27/10/05)**

N rate (kg/Ha)	No Twin N	Twin N	Leaf N Increase %
0 kg	0.41%	0.79%	<b>92.0%</b>
15 kg	0.45%	0.75%	66.0%
30 kg	0.61%	0.95%	55.0%

**Comments**

Yield measurements were not collected for the trial due to problems at the facility, however it was estimated that there was a 10% increase in yield in the Twin N plots compared to the urea treated plots

In comparison to control blocks, results suggest that Twin N can make an appreciable contribution to plant nitrogen only 13 days after foliar application (Refer to figure 4).

Twin N in combination with 30 kg N did not make a significant contribution to plant nitrogen until the 27/10/05. This may indicate that Twin N made additional nitrogen available when the 30kg of N wasn't enough to sustain plant growth at the end of the growing cycle (Refer to figure 6).

Data indicates that Twin N continued to increase plant nitrogen as the season progressed.

Trends in university results indicate that under dry-land conditions vegetative plant biomass can be enhanced by using Twin N in wheat.

Twin N can increase residual nitrogen in the soil post harvest, increasing soil fertility.

Twin N can be used alone, however, for best results data indicates that Twin N should be used in conjunction with reduced rates of nitrogenous fertiliser.