

## Urea and Flexi-N for post sowing nitrogen – Ravensthorpe

### Summary of results

- ◆ Site variability and yields that approached their rainfall potential showed no response to nitrogen rates applied 8 weeks after sowing.
- ◆ A direct comparison of Flexi-N and urea applied 8 weeks after sowing showed 0.9% higher protein from Flexi-N but no difference in yield.

<b>Site Information</b>	
Group	Ravensthorpe Agricultural Initiative Network
Location of trial	18 km N from Ravensthorpe
Farmer	Andy and Jenny Chambers
Soil Type	20-30 cm grey sand over clay
Organic Carbon	0.99% OC
Available N ppm	12 nitrate 4 ammonium
Actual annual rainfall	348 mm (Jan-Nov)
Ave annual Growing Season Rainfall (GSR)	420 mm 209 mm (May-Oct) decile 2
Ave GSR	260 mm
Yield Potential (t/ha)	2.1 t/ha
Yield Actual (t/ha)	2.7 t/ha
Paddock History	
2002	canola
2001	wheat
2000	lupins
Seeding Date	18 May 2003
Variety & Sowing Rate	Camm 60 kg/ha
Base Fertiliser	AgNP 50 kg/ha MoPotash 50 kg/ha urea 80 kg/ha

### Aim

To assess urea and Flexi-N as tillering nitrogen fertilisers for grain protein and yield.

### Design

Rates of urea and Flexi-N were applied to a section of paddock on 9 July, 7 weeks after sowing. 10 mm of rain was recorded on the following day. The Nitrogen Calculator indicated a total of 50 kg/ha of nitrogen was required for a crop of 2.5 t/ha and 10.5 % protein based on paddock details and high fertiliser efficiency. 42 kg/ha of nitrogen was applied at sowing with the balance to be applied 4-6 weeks after sowing.

The control rate of nitrogen was applied as urea on alternate plots through an airseeder and seeder bar or Flexi-N applied through a boomspray. Other rates were applied between the alternating control rates of fertilisers.

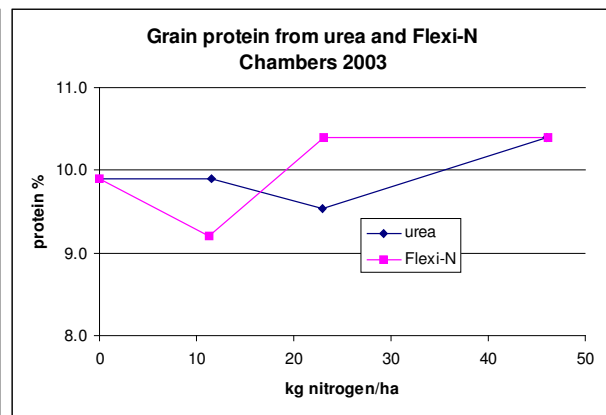
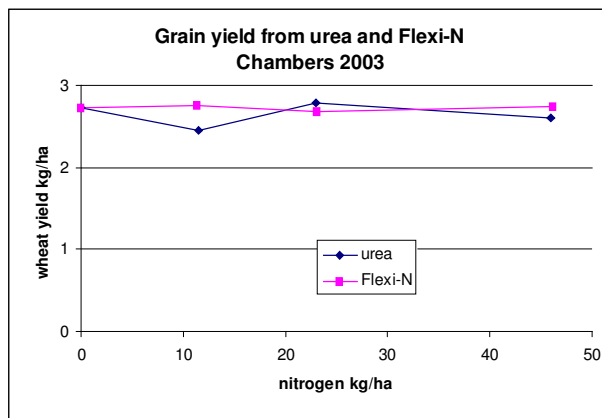
### What happened

There was some difference between plots seen during the growing season but no differences observed between the two products.

The season being decile 2 was below average at this site, which limited the yield. Potential however was met for this rainfall despite some grass in the plots.

treatment	extra nitrogen kg/ha	tillers/sqm.	heads /sqm.	grain yield t/ha	protein %
Nil	0	511	309	2.73	9.9
25kg/ha Urea	12	575	340	2.45	9.9
50kg/ha Urea	23	571	365	2.78	9.5
100kg/ha Urea	46	661	354	2.60	10.4
27kg/ha Flexi-N	11	586	334	2.76	9.2
55Kg/ha Flexi-N	23	577	356	2.68	10.4
110kg/ha Flexi-N	46	632	368	2.75	10.4
				ns	ns

With variability between plots across the site it is difficult to get a good nil result from one plot on which to base interpretation of additional nitrogen application. There is no detectable response to rates of nitrogen nor differences in yield between products.



The rate of 23 kg/ha of nitrogen is replicated indicating that Flexi-N gave higher protein than urea but yields are not different. The returns net of nitrogen cost for these treatments of 23 kgN/ha is similar. The other single plots of nitrogen rates do not show meaningful protein differences.

The Nitrogen Calculator yield target (and yield potential) were met or exceeded on all plots, the additional N applied at tillering was required to boost protein to target levels in a weedy crop.