

# TwinN water run application trials

## Cotton - Darling Downs, Qld, 2012

- Pursehouse Rural conducted an independent trial to assess the performance of TwinN applied by water run irrigation
- The trial compared yield, leaf nitrogen levels and soil nitrate levels after the harvest
- TwinN was compared to two synthetic fertiliser programs that provided an additional 80 U/ha of N more than the TwinN plus reduced N fertiliser program

**USE OF TwinN PRODUCED EQUAL YIELDS DESPITE AN 80 U/HA N REDUCTION**

### YIELD RESULTS

TwinN plus 160 kgN/ha	Conventional 240 kgN/ha
7.1 T/ha	7.1 T/ha

Yields from TwinN plus 160 kgN/ha were equal to those from the average of two standard N application rates of 240 kgN/ha

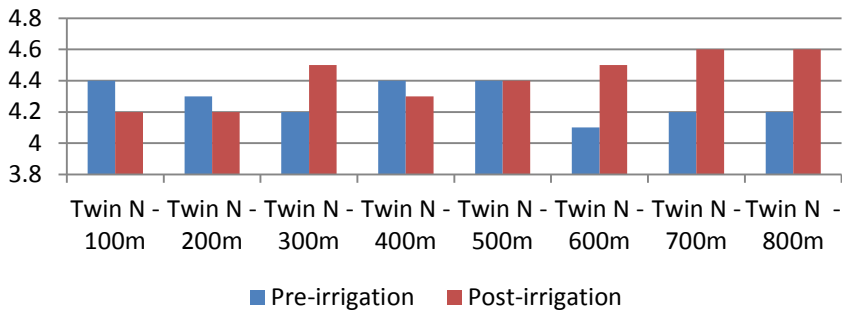
- The trial was conducted beside a fully replicated TwinN plot trial to look at evenness of distribution of TwinN and two N fertiliser products along an 800 m row via water run application
- TwinN was diluted into 1000L of water and delivered by a float valve flow controller into irrigation flow up the furrow
- All rows received the same pre-plant application of 160 U N/ha
- Leaf samples were taken at 2.5 months post-planting and again at 30 days after application of TwinN
- TwinN was applied at one flower per metre crop stage (17 Jan 2012) while comparison rows received an additional 80 U of N/ha at the same time
- Soil samples were taken after harvest to measure nitrate levels remaining in TwinN versus non-TwinN rows
- Yields and soil N levels were averaged for the two N fertiliser products for this comparison

A report from Pursehouse Rural is available on request



# TwinN water run application trials cont'd

## Nitrogen (Kjeldahl) %



Leaf N levels at 100 m intervals down an 800 m row pre- TwinN application and a month after (post-irrigation).

Leaf N levels showed the TwinN microbes were effectively distributed down an 800m row by water run application. Post-irrigation levels were measured a month after TwinN was applied. Average pre-application leaf N was 4.28% and post-application was 4.41%



Soil N levels were equivalent in TwinN and standard rows showing TwinN use did not deplete soil N reserves to meet the N shortfall of 80 U N/ha

	TwinN	Standard
Soil Depth	Nitrate N (kg/ha)	
0 – 10 cm	10	11
10 – 30 cm	10	11
30 – 60 cm	13	13
Weighted N	88	91

## CONCLUSIONS

- Application of TwinN with a reduction of 80 U of N produced the same yield as two different full nitrogen fertiliser programs
- Yield and leaf nitrogen levels showed that TwinN was able to be delivered effectively to the end of an 800 m row by water run application
- Soil analysis after harvest showed no differences between the TwinN and the full nitrogen programs, confirming that TwinN and reduced N fertiliser rate treatment did not maintain full yields by additional depletion of soil N reserves

**Note:** This trial was useful to confirm evenness of application of TwinN via water run application. In commercial use reductions of N rates should be 0 - 40 U/ha less (not 80 U/ha) to target small savings in N costs and increased yields.

