



CottonInfo nitrogen management trials: Emerald

Nitrogen Fertiliser Use Efficiency in Central QLD

Geoff Hunter, CottonInfo RDO

Trial aim

The aim of this trial was to examine Nitrogen Fertiliser Use Efficiency, through the effect on yield of different rates of nitrogen (N) fertiliser. Replicated trials were also carried out across other cotton growing regions by the Regional Development Officers.

Trial details

- Location: "Farm 169" on the western side of Emerald owned by Cam Geddes.
- Soil type: Brown Medium Clay vertosol.
- Rainfall: Sept- Feb was 359 mm
- Planted: Watered up 9-10 September 2014. Fertilizer pre-plant excluding Nitrogen consisted 30kg/ha of superphosphate, 75kg/ha of Sulphate of potash. An in-season application of Zinc at 0.15kg/ha was applied. Two over the top Roundup sprays were applied for weeds which totalled 3kg/ha of product.
- Variety: Sicot 75BRF planted at 11.5 seeds per mtr with establishment of 8.15 per mtr. Row length is 1375mtrs.
- Picked: Mid to late Feb 2015.
- Irrigations: A total of 9 irrigations and around 8.25ML/ha was used including watering up and pre watering.

Treatments:

	Pre plant (Urea) Drilled 50mm Below furrow	1st Application UAN direct spray onto soil 7/11/14	Total
T1	160	0	160
T2	160	60	220
T3	160	120	280

**Plots are 12metres wide with 3 replications of each treatment.*

Head ditch



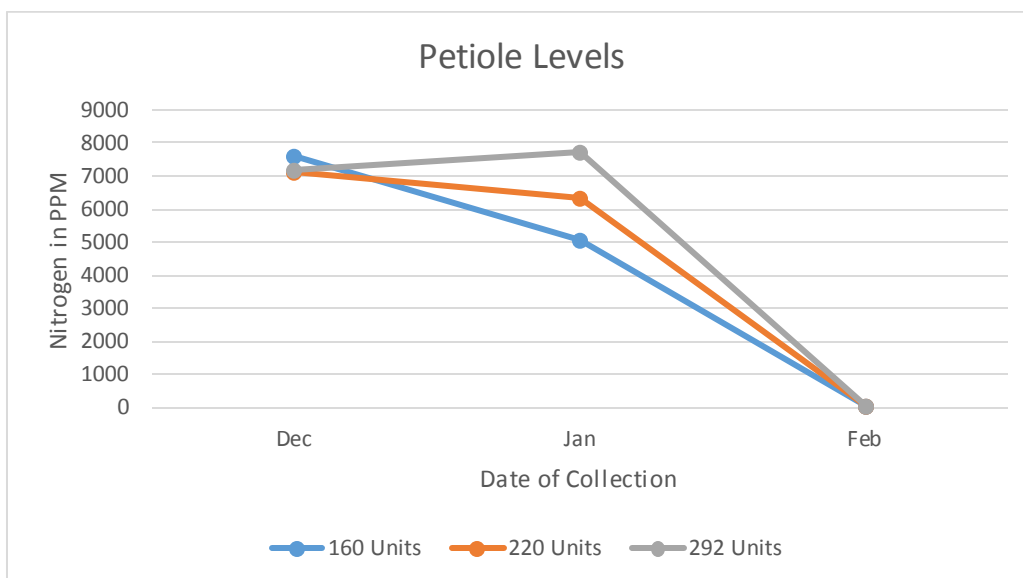
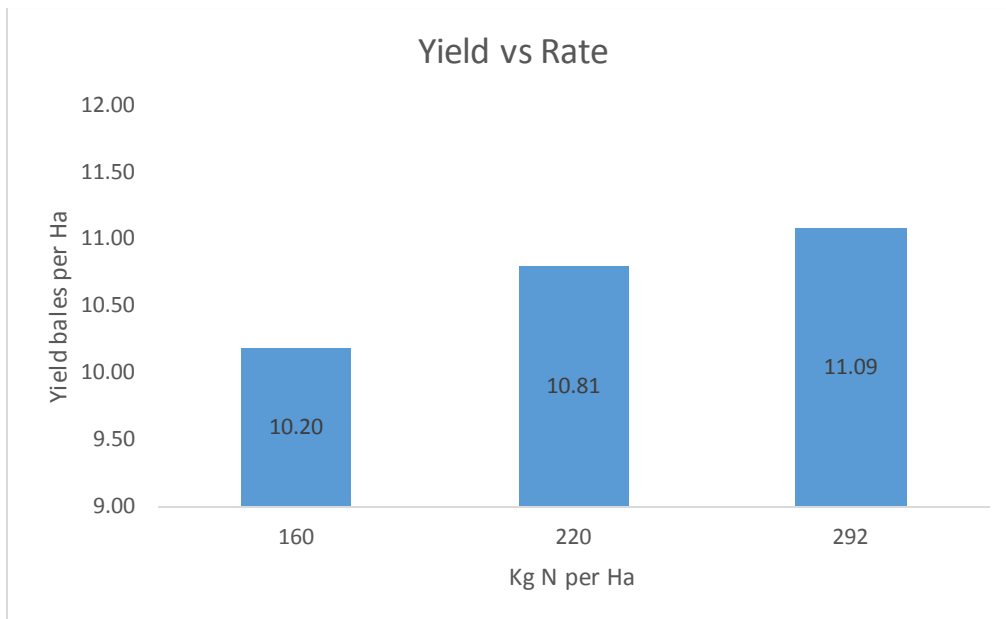
Tail Drain

Results

The crop received two Fipronil sprays at 0.03L/Ha on 5 and 16 Nov, a Shield spray at 0.15 L/Ha on 11 Dec and a Pegasus at 0.8 L/Ha on 13 Jan. An application of Pix on 18 Jan at 1 L/Ha and defoliation began on 11 Feb with 0.08 L/Ha and another on 17 Feb at 0.12 L/Ha along with 1.5 L/Ha of Prep.

The growing season in Emerald was quite challenging with hot dry conditions and low early season retention due mainly to *Heliothis* which meant the crop tended to grow vegetatively after first flower where pix was considered but not applied. Root growth was poor and no explanation for this was established and this may have contributed to the crop approaching cutout prematurely which required careful management.

Watering was considered to be on time although the crop was never considered to be exceptional until picking where Cam obtained his best farm average to date. Yields from the trial are below.



Conclusion

The last five crops in this field have been cotton-cotton-corn-cotton-cotton but yields obtained this season were the best ever. Petiole levels at the start of the season appear to be satisfactory according to NutriLogic however they did decline to levels below 45ppm which would seem quite low. This soil does have sodicity at depth which would limit yield and it would also appear that increasing Nitrogen does increase yield at economic returns.