

TWINN CROP TRIAL



Demonstration on Pasture: Southern Highlands, New South Wales, Australia 2008

SUMMARY OF DEMONSTRATION

In September 2008 a demonstration was set up on a dairy farm in the Southern Highlands region near Robertson, New South Wales, altitude 700m, to compare the efficacy of the microbial product TwinN, with urea on pasture production and utilisation. The local soil is of a red basaltic type, with good natural fertility and the cocksfoot/ryegrass/white clover pasture is used for dairy grazing. The demonstration measured dry matter at various stages throughout 4 cycles of a typical grazing system.

This trial tested a total replacement of urea with TwinN. It is recommended that a 50% reduction in nitrogen fertiliser is used in conjunction with TwinN in pastures.

TRIAL RESULTS

During the 102 day period, from 19 September until 30 December 2008, the urea treated pasture produced 10,904 kg DM/ha, and the TwinN pasture 11,598 kg DM/ha according to accumulated pasture meter reading data (Fig 1).

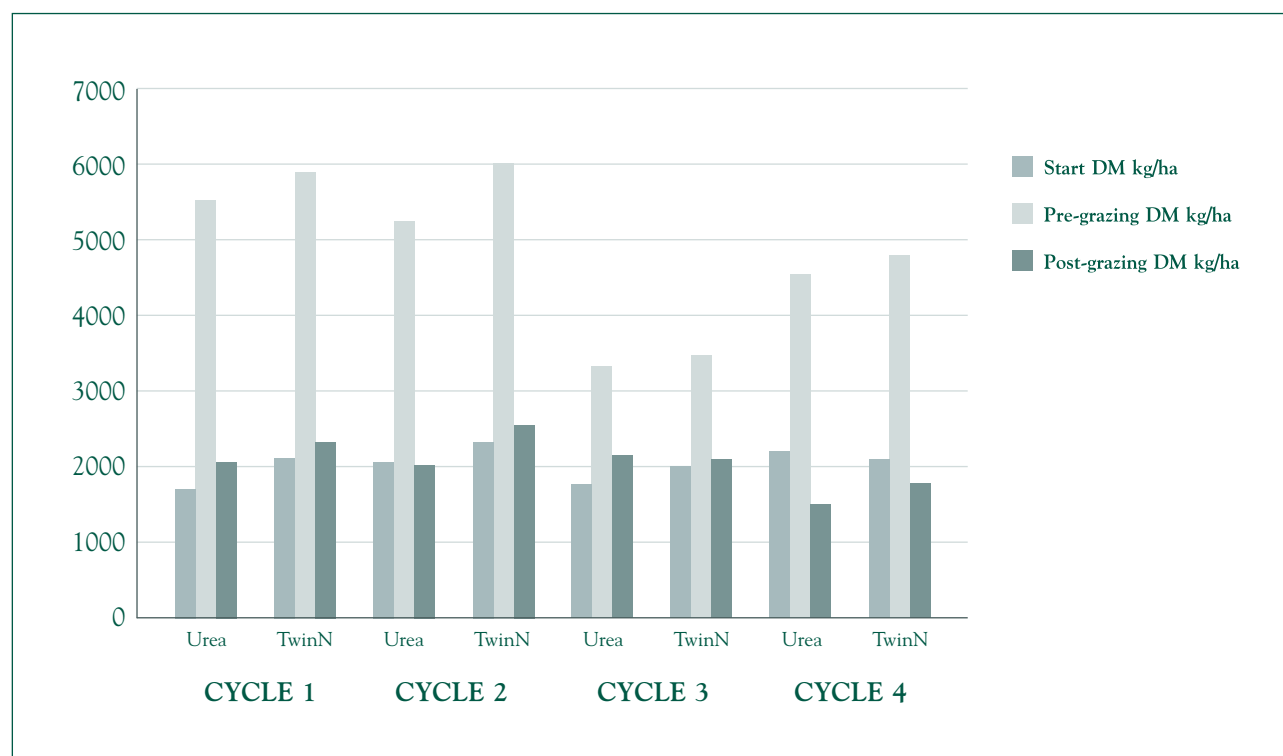


Figure 1: Comparison of Dry Matter production from TwinN versus urea treated pasture during grazing cycles 1 to 4

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PASTURE QUALITY

Palatability of the TwinN treated grass improved, and by early December forage test results showed that the relative feed value of forage from this pasture was 20% higher than that taken from the urea treatment area (RFV TwinN 169; RFV Urea 139).

TABLE 1: Pasture Quality Traits After TwinN or Urea Treatment

	Crude Protein %	NDF %	Water sol Carbs %	Starch %	Calcium %	Phosphorus %	ME MJ/kg	RFV
TwinN	29.1	40.0	9.9	4.0	0.87	0.42	11.76	169
Urea	28.2	46.5	7.8	2.9	0.80	0.39	11.27	139

NDF: Non Detergent Fibre; **ME:** Metabolisable Energy; **RFV:** Relative Feed Value; all % are of Total Dry Matter.

METHODOLOGY

Application: Urea was applied at 120 kg/ha or TwinN, at the recommended rate, both through an overhead fixed irrigation system on 19/9/08. Another similar application was made on 12/11/08. A previous soil analysis showed adequate levels of phosphorous and potassium in this paddock.

Dry Matter Measurement: The amount of dry matter (DM) on the pasture was estimated with a pasture meter with a calibrated pressure plate. Fifty replicate readings were taken for each treatment and time point. Dry matter testing dates are outlined in the table below:

	Cycle 1	Cycle 2	Cycle 3	Cycle 4		Cycle 1	Cycle 2	Cycle 3	Cycle 4
Start DM	19/9/08	15/10/08	12/11/08	2/12/08	Pre-grazing DM	10/10/08	4/11/08	30/11/08	30/12/08
Applications	19/9/08	Nil	12/11/08	Nil	Post-grazing DM	15/10/08	12/11/08	2/12/08	3/1/09

Grazing: The whole paddock was grazed by 200 dairy cows for three nights during each grazing cycle.

Pasture Quality Measurement: Pasture samples were analysed from samples taken on 30/11/08. Analysis was performed by Weston Food Laboratories.

CONCLUSIONS

- ◆ In each growth cycle, TwinN appeared to deliver an increased biomass compared to the urea block.
- ◆ Combined dry matter production over the 4 cycles was 6% higher in the TwinN block compared to the urea treated block.
- ◆ The TwinN block shows positive comparisons to the urea block on all pasture quality traits - in particular the Relative Feed Value.
- ◆ Use of TwinN delivered substantial cost savings to the farmer.

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