Dunsandel 4

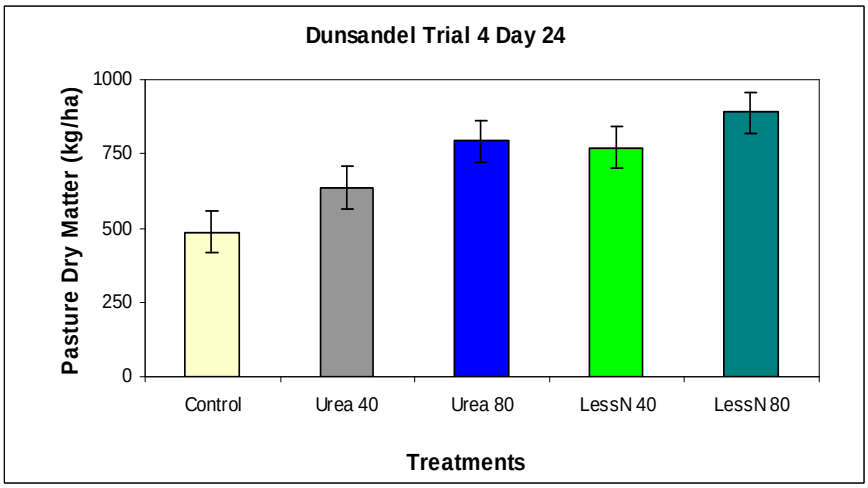
The trial was on a Dunsandel dairy farm in Canterbury. It was started on 26 March 2009 and finished on 19 April 2009. The trial area was irrigated ryegrass-white clover based pasture under normal dairying conditions. Treatments were applied to the selected paddock after one week of grazing by dairy cows. The soil temperature was 21^{0}C at baseline record day and 13.5^{o}C on post treatment pasture assessment day.

LessN 80 produced the highest dry matter compared to all the treatments, dry matter yield in LessN80 was significantly higher compared to Urea 40 treatment and similar to Urea 80 treatment. LessN 40 and Urea 80 preformed similarly at Day 24 but LessN 40 did not cause statistically significantly greater pasture growth than Urea 40 treatment. Urea 40 in turn was statistically significantly better than Control. Pasture growth rates were reasonably slow due to falling soil temperature.

The pattern of results was encouraging as the addition of LessN tended to increase the nitrogen response at both the 40 and 80 kg urea rates. Clear statistical differences were not proven in these comparisons perhaps related to reasonably low growth rate of the pasture and low nitrogen response rates generally. See soil test discussion for the significance that phosphorus may play in these results.

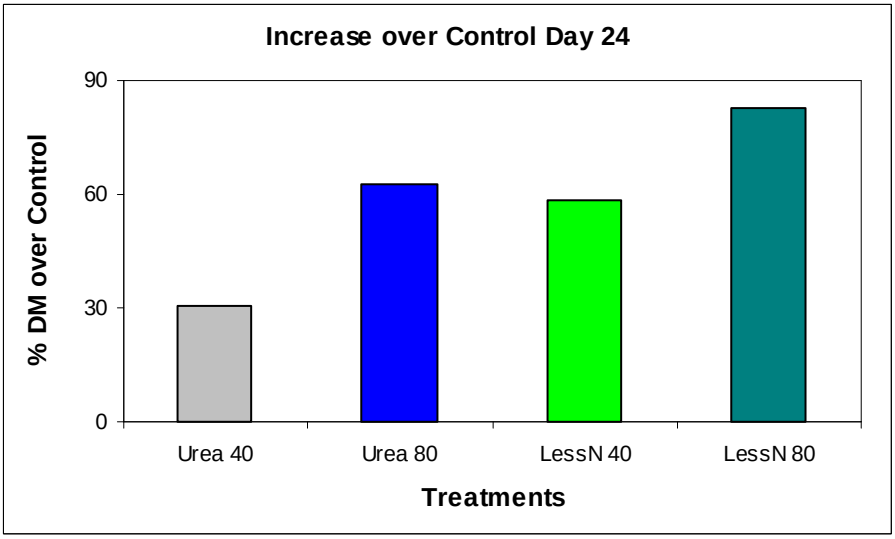
Table and Graph of Pasture Dry Matter Production (kg/ha) Day 24

Treatment	DM Rotation
Control	487[a]
Urea 40	636[b]
Urea 80	792[c]
LessN 40	771[bc]
LessN 80	890[c]



* Treatments that share the same letter are not statistically significantly different from each other (95% confidence level).

Graph of the Increase over Control (%) Day 24



Soil test report (pre treatment application)

According the soil test, available phosphorus may have been limiting pasture production at the time of the trial. This may have resulted in a moderately low growth rate and low nitrogen response rate over the course of the trial. Soil temperature had also started to drop but was still at a suitable level for better pasture growth rates.

Analysis		Level Found	Medium Range	Low / Medium / High
pH		5.9	5.8 - 6.3	
Olsen P	(mg/L)	9	20 - 30	
Potassium	(me/100g)	0.50	0.50 - 0.80	
Calcium	(me/100g)	8.7	6.0 - 12.0	
Magnesium	(me/100g)	0.90	1.00 - 3.00	
Sodium	(me/100g)	0.17	0.20 - 0.50	
CEC	(me/100g)	16	12 - 25	
Base Saturation	(%)	63	50 - 85	
Volume Weight	(g/mL)	0.83	0.60 - 1.00	
Sulphate-S	(mg/kg)	11	7 - 15	
Available N (15cm Depth)	(kg/ha)	224	150 - 250	
Base Saturation		K 3.1	Ca 53	Mg 5.6	Na 1.1
MAF Units		K 9	Ca 9	Mg 17	Na 7
Anaerobically Mineralisable N		180 ug/g			