

Less N Pasture Response Trial:

*Walton, Waikato
Autumn 2011*

Report on field trial for Donaghys Industries Ltd Christchurch

Report prepared by:

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Background

At the request of Donaghys Christchurch, a field trial to evaluate the agronomic effectiveness of Donaghys Less N compared to rates of urea in both the liquid and solid form was independently run by Northland Pastoral Research Ltd.

Trial Design and Methodology

A trial site was selected by Donaghys staff at Walton, Waikato, approximately 12kms north of Matamata.

The paddock selected was a strong rye grass, white clover sward with some annual summer grass.

Soil test analysis from the trial site on the 8th March 2011 is as follows;

pH	6.3
P	34
K	7
Ca	12
Mg	24
Na	7
Sulphate. S.	18
O.S.	14
Inc N	232
W.V.	0.59

Trial Design

1. Control
2. Urea @ 40kgs / ha as prills
3. Urea @ 80kgs / ha as prills
4. Urea @ 40kgs / ha liquid applied (200 L water / ha)
5. Urea @ 40kgs/ha + 3L / ha Less N (200 L water / ha)

The trial consisted of five treatments x eight replicates = 40 plots in a randomised block design. Plot size was 30m x 4m

Pasture production measurements were taken using two techniques

1. 30 pasture probe measurements were taken per plot on a pre and post grazing basis
2. A 10 metre strip was harvested by lawn mower on a per plot basis, pre grazing, Herbage was weighed green and a sub sample was dried for dry matter determination.

The trial was conducted as per the Donaghys written protocol and was audited by Dr Tim Jenkins, Donaghys Christchurch.

Time Table of events for Less N Trial – Walton

March 8 th 2011	Take probe measurements and lay down trial treatments
March 29 th 2011	Take probe measurements and harvest trial
April 5 th 2011	Take probe measurements and re-apply treatments
April 29 th 2011	Take probe measurements and harvest trial
May 26 th 2011	Take probe measurements and harvest trial

Results

The following table show kgs dm/ha and pasture probe yield measurements by treatments.

Kgs dm/ha

<u>Probe Readings</u>	Control	Urea@40 Solid	Urea@80 Solid	Urea@40 Liquid	Urea@40 liquid + Less N	P	LSD 5%	CV%
Growth to 1 st Grazing	1078b	1116ab	1285a	1014b	1154ab	0.036	169	15
Growth to 2 nd Grazing	900b	897b	1054a	974ab	1110a	0.026	152	15
Growth to 3 rd Grazing	1040	1066	1097	1061	1123	0.855	164	15
Total Growth	3,018	3,079	3,436	3,049	3,387	0.004	264	8

<u>Mowing Readings</u>	Control	Urea@40 Solid	Urea@80 Solid	Urea@40 Liquid	Urea@40 liquid + Less N	P	LSD 5%	CV%
1 st Sampling 29/03/2011	1100	1199	1215	1194	1251	0.384	155	13
2 nd Sampling 29/04/2011	1206c	1338abc	1411ab	1249bc	1471a	0.017	167	12
3 rd Sampling 26/05/2011	698	745	694	724	729	0.719	87	12
Total Growth	3,004	3,283	3,320	3,167	3,451	0.128	348	11

P value is the significance level of differences amongst the five treatments.

The data was analysed using the ANOVA directive of Gen Stat 13th edition version 13.2.0.4682

The dry matter yields from the first harvest showed the site was only slightly nitrogen responsive however at the second harvest following the second treatment application, good responses were recorded to the increasing rate of urea with the highest yield recorded being the Less N + 40 Urea.

There were no yield differences at the residual harvest (sampling number 3)

Acknowledgements

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