

<b>Trial #</b>	16
<b>Location</b>	Albury
<b>Province</b>	South Canterbury
<b>Farm Type</b>	Sheep and Beef
<b>Product Trial</b>	FPF Dry Matter Production
<b>Date</b>	2003

**Introduction:** To compare soil and plant nutrient responses as well as pasture dry matter responses to different combinations of lime and lime-flour.

A hill-country site was selected near Albury in South Canterbury. Six different treatments were replicated 5 times. Plots were 3m x 3m. Plot design was randomised block. Site faced north with slopes of approx 15 degrees. Fertiliser was applied on 20/2/03 using a Mainland Minerals groundspread truck (Lime-flo treatments) and by hand for the Lime treatments. A preliminary soil test had been taken in January 2003, highlighting a sulphur deficiency which was addressed in the treatments. Dry matter measurements were made using a Tru-Test GrassMaster II electronic probe. After measuring, plots were mown. Dry matter trends were confirmed using a Farm Works Electronic Rising Plate Meter.

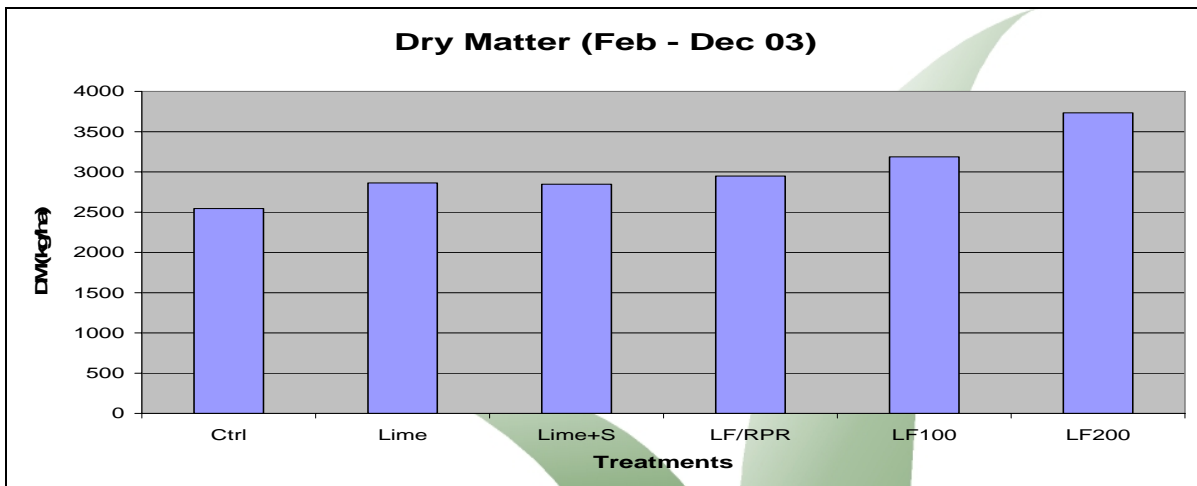
**Treatments:**

1. Control
2. Lime {Agricultural lime (applied at equivalent of 2.5T/ha)}
3. Lime + S {Ag Lime + Sulphur (applied at equivalent of 2.5T/ha + 20kg/ha elemental sulphur (ES))}
4. LF + RPR {Lime-flo (118kg/ha) + RPR (60kg/ha) + ES (10kg/ha) + Salt (10kg/ha) + B,Cu (1kg/ha each)}
5. LF 100 {Lime-flo (78kg/ha) + ES, Salt, B & Cu at rates as in Treatment 4}
6. LF 200 {Double the rates of Treatment 5}

**Results:**

**Dry Matter (Feb-Dec 03)**

Treatment	(kg/ha)	% increase	> 30% clover (Oct 03)	(%)	> 30% clover (Dec 03)	(%)
Ctrl	2546	0	0/5	0	0	0
Lime	2864	12.5	0/5	0	0	0
Lime+S	2847	11.8	2/5	40	3	60
LF/RPR	2948	15.8	2/5	40	2	40
LF100	3188	25.2	3/5	60	5	100
LF200	3735	46.7	5/5	100	5	100



Differences in dry matter production were quite dramatic between the various treatments (see accompanying photos), in particular, the treatments with in excess of 100kg/ha of lime-flour (LF+RPR, LF 100, LF 200) had significantly greater legume content as well as greater dry matter production.

In terms of the nutrient status of the dry matter, some of the results are listed below. Levels of nitrogen, sulphur and boron tended to be higher in the LF 100 & LF 200 treatments. Metabolisable energy (ME) and digestibility was generally better in the LF 100 & LF 200 treatments. These levels in the control treatments for December were higher than expected.

### Nutrition Levels of Herbage

Treatment	% N		% P		% S		% C a		B (mg /kg)		% Dig est		(MJ/ kg) ME	
	Oct	Dec	Oct	Dec	Oct	Dec	Oct	Dec	Oct	Dec	Oct	Dec	Oct	Dec
Control	2.9	1.4	0.32	0.23	0.16	0.08	0.6	0.32	4	6	68.2	60.0	10.9	9.6
Lime	2.9	1.5	0.33	0.24	0.17	0.09	0.66	0.35	4	7	68.0	54.5	10.9	8.7
Lime + S	3.3	1.7	0.32	0.24	0.21	0.11	0.85	0.49	7	7	68.9	57.9	11.0	9.3
LF + RPR	2.9	1.5	0.33	0.23	0.18	0.09	0.79	0.34	6	5	68.3	51.1	10.9	8.2
LF 100	3.2	2	0.32	0.25	0.19	0.11	0.84	0.62	6	12	67.8	58.2	10.9	9.3
LF 200	3.5	2.2	0.33	0.23	0.22	0.14	0.91	0.65	9	12	70.9	59.6	11.3	9.5