

conducted. To this end all green weights harvested have been converted into estimated hay weights, and the yield per acre of hay is thus shown. An arbitrary value of £5 per ton has been given to all hay harvested, and from that has been deducted the value of the crop. Against this value the cost of the various fertilizers has been placed, and a profit or loss table over the control plot worked out.

In presenting these tables it is to be noted that the hay values only represent the amount of material harvested during the comparatively short period of time (about ten weeks on the average) during which the plots were closed to stock. The full cost of the fertilizers used has for convenience been debited against the hay thus produced. No residual effect has been taken into account, and it is only reasonable to expect that for the next few years the effect of certain fertilizers will be noticed on some portions of the plots. Again, it is to be pointed out that thirty-nine of the plots are in their first year of treatment, consequently no great effect from lime can as yet be expected. It is intended to carry on the experiment with these plots for a number of years in order to ascertain the length of time over which the effects of the different fertilizers used will be felt. For the next few years, therefore, the results of these experiments will be presented to farmers, and the profit or loss shown on each plot will be adjusted from year to year. For convenience this season's results are divided into groups—namely, North Otago, Central Otago, and South Otago.

North Otago.

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This paddock, situated on rolling country adjacent to the Waitaki River, had been sown down with rape in 1923, no manure being used. The pasture before top-dressing had run largely to goose-grass, sweet vernal, and crested dogstail, small quantities of rye-grass, cocksfoot, and red and white clover showing through. The plot was top-dressed on 17th August, 1927, closed to stock on 1st October, and harvested 5th December. Results are shown in the following table:—

Table 1.

Number of Paired Plots.	Manure.	Mean Green Weight of Plot.	Significant (S) or Non-significant (N).	Estimated Weight of Hay per Acre.	Value of Hay per Acre.			Cost of Manure per Acre.			Profit or Loss compared with Unmanured Plot.					
					£	s.	d.	£	s.	d.	£	s.	d.			
30	Basic slag ..	6.8	N	T. cwt. qr.	£	s.	d.	£	s.	d.	£	s.	d.			
					0	10	1	2	11	3	0	15	0	0	1	3 (loss)
30	Basic slag and lime	7.9	N		0	12	0	3	0	0	1	8	0	0	5	6 (loss)
24	Superphosphate ..	29.1	S		2	4	0	11	0	0	1	1	0	8	1	6 (gain)
24	Super and lime ..	28.7	S		2	3	2	10	17	6	1	14	0	7	6	0 (gain)
44	Lime ..	6.4	S		0	9	3	2	8	9	0	13	0	0	1	9 (loss)
..	Control..	4.9	..		0	7	2	1	17	6

Summary: The effect of superphosphate on this plot was very striking; red clover responded to it most vigorously. No apparent results in the composition of the pasture could be noted at time of