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Report for 1937

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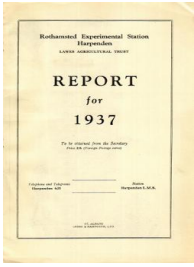
Rothamsted Experimental Station
Harpenden

REPORT
for
1937

The Liming Programme

Rothamsted Research

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expected, the responses to both manures are greater on plots without manuring in the previous year than on plots which were then manured. The average differences between the increases to artificials and the increases to compost are 3.7 cwt. per acre on plots unmanured and 7.0 cwt. per acre on plots manured. This indicates that artificials are more effective relatively to compost at higher levels of yield.

TABLE III

First Year Residual Effects of Artificials and Compost

	No manure in current year		Manured in current year	
	Response to		Response to	
	Artificials	Compost	Artificials	Compost
1933	+0.7	+2.8	−0.8	−0.9
1934	+9.8	+21.7	+8.1	+7.8
1935	+2.8	+9.7	−3.2	+5.2
1936	+7.5	+10.2	+1.4	+3.4
1937	+3.2	+13.4	−1.8	−2.3

In most years there were also good responses to a previous year's dressing of manures on plots receiving no manure in the current year. The relative effectiveness of the two manures has, however, been reversed, compost giving about 6.7 cwt. per acre more than artificials. On plots manured in the current year, the residual effects were small or negligible except in 1934, in which the residual responses to the two manures were roughly equal; at these higher levels of yield compost has apparently little residual value, a result in accordance with that indicated above.

ARABLE LAND

The Liming Programme

Some of the results of the 1936-37 experiments have an important bearing on the liming programme of the Ministry of Agriculture. In many parts of England there is a dislike of magnesian limestone and of the lime prepared from it. We have made a number of experiments in different parts of the country but so far obtained no evidence that the magnesian limestones are detrimental. When used in the quantities indicated by the ordinary lime requirement methods they give fully as good results as the corresponding high-calcium products. In some pot experiments, indeed, magnesium proved beneficial, but not in any of the field experiments. No full survey has been made but there is no present evidence of widespread magnesium deficiency in English soils.

Residual Effects of Chalk

The residual effects of chalk have been studied in three experiments, in two of which there were several dressings of chalk so as to determine the most effective amount to apply.

At Tunstall on an acid sandy soil, chalk was applied in 1932 but nothing was added afterwards. Sugar-beet was grown by Mr. A. W. Oldershaw, for the first four years, 1932-5.