

phosphate-content than superphosphate. In this case, the extra costs of mixing and cartage confer no advantage. There are probably some soils to which this applies, and on them the use of serpentine superphosphate would be uneconomic and undesirable. These areas have to be found by experiment.

### Results of Fields Division Trials

The following trials with serpentine superphosphate have been laid down since 1939, and results from them are summarised below:—

5 mowing trials on the effect of pasture topdressing.

160 observational topdressing trials on pasture.

12 potato manurial trials.

9 wheat manurial trials.

1 oat manurial trial.

2 barley manurial trials.

46 manurial trials on turnips, swedes, rape, and chou moellier.

1 mangel manurial trial.

1 maize manurial trial.

237: Total number of trials.

### (1) Mowing Trials

Taking yields relative to superphosphate at 100, three trials at the Marton Experimental Area gave the following figures for serpentine superphosphate. Both manures were applied at 4 cwt. per acre.

Trial P (700 days under trial), 100.0.

Trial R (273 days under trial), 100.9.

Trial S (281 days under trial), 100.8.

At Marton, serpentine superphosphate gives almost exactly equal production to superphosphate when both manures are applied at the same rate.

At Feilding Agricultural High School, the following results were obtained. Here, a mixture of 3 cwt. of superphosphate plus 3 cwt. of lime was compared with serpentine superphosphate at 3 cwt. When yields of the former treatment are taken as 100, those of serpentine superphosphate (238 days under trial) on the same basis are 111.4. Moreover, serpentine superphosphate has consistently shown to advantage at Feilding.

The trial at Ruakura Animal Research Station, Hamilton, was laid down a few months ago, and there are as yet insufficient results to summarise.

### (2) Trials on Pasture

The maps which accompany this article are self-explanatory, and the salient results of observational topdressing trials on pasture are as follows. In all cases the comparison is one of 3 cwt. of serpentine superphosphate per acre with 3 cwt. of superphosphate—that is, at equal rates.

(a) In North Taranaki and on the Waihi plains serpentine superphosphate shows to advantage over superphosphate, and because the lime response in these districts is not marked, it is usually better than superphosphate plus lime. Some soils in the Southland district may also come into this category.

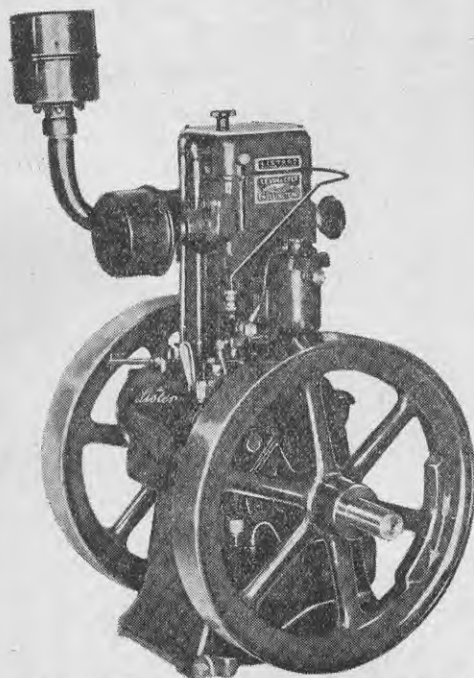
(b) North of Auckland serpentine superphosphate on many soil types tends to give better results than superphosphate, but as the lime response is generally very marked here, it is evident that the new mixture can in no way replace adequate liming.

(c) In several localities on the East Coast of the North Island, and in some parts of Canterbury, superphosphate gives better responses than serpentine superphosphate, probably because in

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