

such areas highly-soluble fertilisers show to advantage. A similar effect is seen on some pumice soils, on which excellent results are usually obtained with superphosphate and good results with serpentine superphosphate.

(d) Soils showing practically no responses to any fertilisers are located in Kaitaia in the far north and in the Waikato. In the former district many soils have exceptionally high "fixing" power, and here even reverted phosphates are not effective. Liming plays a big part in the utilisation of many such soils. In the Waikato most soils have considerable reserves of phosphate built up from many years of topdressing, and thus areas receiving no fertilisers deteriorate slowly. As a result, it may be one or two years before the effect of topdressing is seen.

(e) Over most of the rest of New Zealand serpentine superphosphate

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gives equivalent responses to superphosphate. This group includes the majority of the trials.

(3) Potato Manurial Trials

The following table summarises the results obtained on a comparison of serpentine superphosphate with superphosphate with potato manurial trials.

Both Manures applied at	Number of Trials.	Average difference (Serpentine-super - Super) Total Yield of Tubers (tons per acre)
3 cwt. per acre	8	+0.2
4 " " "	1	+0.7 (significant)
6 " " "	4	-0.5
9 " " "	1	-0.3 (early potatoes)
12 " " "	1	+1.3
18 " " "	1	+1.2
Ave. difference	—	+0.2

In only one trial was the above difference statistically significant—in this case in favour of serpentine superphosphate. This trial was at Rangiora.

(4) Trials with Wheat Oats and Barley

Seven wheat manurial trials of a detailed layout were located in Canterbury and North Otago, and gave an average yield as follows:—

	Bushels per acre
Serpentine superphosphate 1cwt.	37.5
Superphosphate 1cwt	37.7
Difference	-0.2 (not significant)
Serpentine superphosphate 2cwt.	37.6
Superphosphate 2cwt.	38.4
Difference	-0.8 (not significant)

A trial in the Turakina district yielded as is shown below, but the

results were not statistically examined.	
Serpentine superphosphate 2cwt.	22.6
Superphosphate 2cwt.	20.0
Difference	+2.6

Two barley manuring trials give the following yields:—

	Bushels per acre.	
	Southbridge trial.	Arrowtown trial.
Serpentine superphosphate 1cwt.	50.7	20.5
Superphosphate 1cwt.	52.5	19.3
Difference	-1.8	+1.2

Neither of the above differences are statistically significant.

An oat manurial trial was not harvested due to damage from wind and birds.

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