

The great bulk of work handled in the analysis of fertilizers has been from the field trials of the Division to establish the quality of fertilizers used. A limited number of official samples under the Fertilizers Act have been analysed. Practical recommendations were prepared on methods of reducing rotting in bags, which promised to be in short supply. Investigations have been started to determine the cause of the difference between serpentine rock from Te Kuiti and North Auckland in reverting superphosphate.

All ground limestones used in field experiments are tested for purity and fineness. Periodical sampling of commercial products is undertaken to keep a check on the quality of stone marketed. All commercial products on sale were specially tested during the year for purity and fineness and sieved for research into reactivity and hardness. Rocks thought to be potential sources of lime were tested for farmers. The samples of burnt lime submitted were, with one exception, of poor grade and quite uneconomical. Moreover, the purchase of low-grade burnt lime for pest control would be most unsatisfactory.

Pasture dry-matter samples numerically outnumbered the total of all other samples. They are undertaken for estimation of dry-matter production on field trials and at the Research Station. In certain trials the dried samples are retained for analysis.

Miscellaneous samples include water from the lysimeter at the Station. This is a service which should be included as a major research were suitable staff available.

Weedicide and organic research has included detailed study of the herbicidal action of power kerosene. Work for other Station research projects has included analysis of samples of weed-killer and the preparation of organic compounds not obtainable commercially.

Following is a summary of samples received for service reports and research investigations :—

Soil—

Research	..	..	..	..	..	709
Service	..	..	..	..	..	614
Limestone	..	..	..	..	..	287
Fertilizers	..	..	..	..	..	149
Pasture	..	..	..	..	..	3,089
Miscellaneous	..	..	..	..	..	51
						4,899

IRRIGATION

Up to September, 1947, the season's rainfall had been sufficient, but from then until the end of March, 1948, dry conditions prevailed, made worse by a long sequence of north-westerly winds. These circumstances created what could be called the usual Canterbury weather for this period of the year, but these conditions had not prevailed during the past four seasons, which had abnormal rainfall for this period. Under these normal conditions during the present season the value and necessity of irrigation if production is to be increased have been strikingly demonstrated on farms where irrigation water has been made use of in South and Mid Canterbury.

The main activity has been centred around the establishing and development of the irrigation research area at Winchmore, in Mid-Canterbury.

Of the three areas, the dairy unit of 150 acres is furthest advanced. Milking was begun in September, the herd finally comprising for the season 27 cows in milk, 24 of which are first-calving heifers. All the stock have been bought where they could most readily be obtained. With herd-testing and the use of good sires, and the purchase of further heifers with a known background, it is intended to build up the herd as quickly