

*Field Investigational Projects*

When the Station was taken over it was largely under bare fallow. These areas were sown with Italian rye-grass preparatory to grassing out for permanent trials, including a comprehensive technique trial. The Italian rye-grass was sown with the objective of cutting it with the twofold purpose of providing data for a uniformity trial and also data upon the extent to which a single crop of Italian rye-grass is responsible for removing accumulated plant nutrients from the soil.

The climatic conditions throughout the summer and early autumn were extremely dry and no rain of any significance fell between November and the latter part of March.

Although the Italian rye-grass struck quite well and gave a good cover, it did not grow beyond the 6 in. stage, and consequently the original plans for its use came to nought, and it was ploughed in with the disc plough toward the end of March and sown to permanent pasture.

Portion of the area has been set aside for a barley variety trial designed to compare the feeding value of the following varieties: Newall, Oderbrucker, Cape Smooth Awned, Cape Rough Awned, Black Skinless, and Wong.

One area was sown with Italian rye-grass in three different ways:—

- (1) Broadcast.
- (2) Drilled in 7 in. rows.
- (3) Drilled through a new-type coulter.

In general it can be said that the results in dry weather indicate that either form of drilling gave a quicker establishment and more vigorous early growth than broadcasting. The new-type coulter area gave a better distribution of plants than the ordinary drilled area and would appear to be a useful method of sowing pastures on areas subject to prolonged drought.

The establishment of plants for a white-clover trial was completed during January, and at the present time a good coverage of the ground has resulted and a preliminary defoliating cut has already been made. In this trial white clover is being used as the indicator plant and a pure stand is now established. It was noted during the establishment of these white-clover plants that, although the whole of the 16,000 plants originated from a single plant, there was considerable variation in the form of growth during the earlier stages of establishment. Indications to date are that these variations become less apparent with the ageing of the clover plants. Preparations are now in hand for the application of fertilizers.

Provision has now been made for the establishment of two plots upon which investigations to responses to nitrogenous fertilizers will be carried out, and also fundamental investigations on the soil nitrate status of the plots with and without treatments. One of these plots is located in the field adjoining the white-clover plot and is situated on a typical area of the Hamilton clay loam. The other plot is situated on the flat at the back of the Station on the Te Kowhai silt loam.

Work has been commenced on the pilot trial using sheep to indicate pasture production. A total of 62 sheep were purchased, but a certain number of these will have to be excluded from the trial on account of too much variation from the type required.

A similar area adjoining the white-clover plot has been established with various types of agricultural crop plants and vegetables in an endeavour to obtain material for tissue testing and to induce the symptoms of various mineral deficiencies.

A further area has been fenced off from the remainder of the Station where a nursery of various types of weed plants is being established on which various weedicides can be tried out.

The removal of the glasshouse and other materials from Ruakura and its erection on this Station has made possible the large amount of plant propagational work which has been carried out here in the course of the last few months. In addition to