

Recent work has been concerned with the use of rubber bands for castration and a patent crushing type of tailing-instrument. Neither of these methods show any differential effects on subsequent growth when compared with "knife" tailing and castrating.

The progeny testing of Southdown rams shows that heritable differences between sires of various qualities and from different studs are small.

LIME AND LIMING

Chemical analysis of samples from thirty-one South Island commercial limeworks showed that these agricultural limestones are very low in magnesium and phosphate. Fineness of grinding varies considerably.

Other studies include rate of solution in relation to fineness of grinding and physical properties, lime status of college farm lands, response of crops to soil acidity, and bulk lime-spreading.

COPPER-DEFICIENCY STUDIES

Using onions as a test crop, work was carried out on the copper-deficient peat land north of Christchurch. Two foliar spray applications of 20 lb. per acre of copper sulphate gave excellent results.

SOILS AND FERTILIZERS

The soil-fertility project initiated in 1946-47 has been carried forward. The crops for each stage in the four-year rotations were sown and harvested. The autumn-sown wheat plots made even growth and all gave high yields of grain. There was no significant difference between controls and fertilizer treatments.

A general report covering the soils and agriculture of Westland was completed and recommendations for land-development, pasture-improvement, and dairy-herd-management presented.

ENTOMOLOGICAL WORK

The methods of over-wintering of Hessian fly are still being investigated.

The results of several years' work on wheat insect pests have been submitted for publication.

A study of grain-store weevils has been commenced.

ANIMAL HUSBANDRY

Routine progeny testing in two flocks is proceeding and much valuable data are now being obtained concerning the inheritance of sheep characteristics. The merit sire scheme for Corriedales based on progeny test has completed its first year.

The sheep-dipping trials using Derris, D.D.T., and benzene hexachloride (Gammexane) have been completed. Gammexane has been shown to be outstanding in its effectiveness against both keds and lice and in its period of toxicity.

The growth and development studies on sheep raised on high and low levels of nutrition and ruminant digestion studies have been continued.

FARM MACHINERY

Several models of the truck-mounted grass-seed stripper developed at the college have been giving satisfactory service in commercial use.

A tractor-mounted rotary topper was constructed and tested. It has proved very promising for topping heavy growth on pastures, even in tough conditions.

A ditch-cleaning machine mounted on a tractor has been developed and is being tested.

A beginning was made with a project aimed at improving the efficiency of harvesting and threshing white-clover seed.