

of being high yielding. The possible deterioration of these lines after continued growing for seed in New Zealand is also being investigated. Three trials are selection areas sown for the Agronomy Division, Department of Scientific and Industrial Research, and 1 is a disease-control trial where the Plant Diseases Division, Department of Scientific and Industrial Research, is investigating control methods against "head smut" of maize. One manurial trial has been sown at the Dargaville Demonstration Farm.

(k) *Potatoes*.—Twenty-five of the 35 potato trials laid down this year are varietal trials of a simple type comparing vigour and growth, disease-resistance, yield, and quality of tubers. Four trials compare "strains" of the one variety, and investigate the possibility that the crop grown from seed from certain districts or growers is any different in respect of yield and other characteristics from that grown from other districts or growers. Four trials have manurial comparisons, and 1 at the Marton Experimental Area investigates different cultivation practices on the potato crop. Two trials compare methods of controlling late-blight of potatoes.

(l) *Other crops*.—One trial with "kudzu" is at present in progress. This plant is reported on favourably in the United States in connection with soil conservation, and further experiments with kudzu will be commenced in New Zealand in the near future.

(3) *Miscellaneous Trials*

(a) *Weed Control*.—The experimental programme with the new type of "hormone" weed-killers and other products is now in full progress, ample supplies of the materials having arrived during the year. A total of 80 trials, 73 of which are still in progress, have been laid down during the year, and cover a wide range of annual and perennial weeds everywhere where they present a farming problem. The work so far has not reached finality, but it has shown that, although they will be very useful in the hands of the practical farmer, the new forms of weed-killers have very definite limitations in respect of the weeds they will eradicate and the circumstances under which they can economically be used. Farmers should view with caution any extravagant claims as to their value. There is every possibility, however, that for certain purposes they are invaluable, and it is these instances which it is hoped the trials will clearly define.

Close co-operation is being maintained with the Soil Fertility Research Station, Hamilton, where an officer is specializing in weed-control problems.

(b) *Pampas-grass*.—The 5 plantations of various so-called "strains" of pampas-grass should be ready for feeding-off shortly. In the meantime a survey of all pampas-grass plantations is to be carried out, with the object of placing on record all the information available so that detailed conclusions concerning the establishment and utilization of the plant can be arrived at.

(c) *Casting Worms*.—The 79 plantations of these worms should be ready for inspection during the coming winter. The transplanting of casting worms in the Raetihi district has resulted in promising improvement in pasture composition and growth and stock-carrying capacity of hill country.

(d) *Cultivation Practices*.—Four of these trials are designed to investigate the effect on the soil and on the growth and yield of subsequent crops of ploughing-in of the straw stubble left after heading cereal crops compared with burning such stubble before ploughing. Results are not yet to hand.

(e) *Miscellaneous Trials*.—These include 2 trials in which is investigated the "dusting" of grass and clover seed in an endeavour to improve field germinations. The use of the usual types of dusts commonly applied to peas