

(k) *Maize*.—Five trials with maize are variety trials incorporating lines of hybrid seed originating in the United States of America. Some of these lines are showing considerable promise in this country. Two trials have manurial comparisons and 1 compares types of seed of the one variety.

(l) *Potatoes*.—Of the 42 trials now in progress, 30 are variety trials which are giving valuable information about varietal characteristics, vigour of growth, resistance to disease, yields, and quality of tubers of a large number of varieties. Five manurial trials examine more especially the effect of different times of application of nitrogenous fertilizers, and there is a keeping-quality trial, a field-spacing trial, and a trial with a seed-dressing stated to improve sprouting. Four trials with a substance that retards sprouting indicate that this material may be of great value for preserving table potatoes for considerable periods.

(m) *Other Crops*.—These include trials with edible shrubs, with crop mixtures, and with a new variety of rye-corn.

(3) *Miscellaneous Trials*

(a) *Pampas-grass*.—Field trials include comparisons of so-called "strains" of pampas-grass, methods of establishing pampas, manurial trials, and the effect of inter-cultivating and of sowing pasture or crop species between the pampas rows. A comprehensive survey of farmers' pampas-grass plantations should be completed and results published shortly.

(b) *Weed Control*.—Trials of this type are chiefly concerned with the new hormone-type weed-killers, which have been shown to be most valuable materials for weed control. Interim results from this work have been published and a summary of the present season's trials will be prepared shortly. The field of research with weed-killing chemicals has hardly been touched as yet, and each year brings new developments which require investigation under New Zealand conditions. The experiments so far completed have shown the limitations as well as the possibilities of these chemicals for weed control, and the hope of the future is to obtain materials that will be suitable under known conditions for certain specific weeds and not to produce a single weed-killer that will solve all weed-control problems.

(c) *Cultivation Practices*.—These types of trial include investigations into the effect of burning stubble from cereal crops before ploughing, placement-of-fertilizer trials, studies of the effect of lime on the physical condition of the soil, rates and methods of sowing pasture seeds, and studies of the effect of bordering land in the preparation of such land for border irrigation.

(d) *Casting Worms*.—The 79 plantations of casting worms throughout New Zealand are being kept under observation, but definite results from this project will not be available for a further year or two.

(e) *Blind-seed Disease of Rye-grass*.—The control of this disease is being studied in collaboration with other interested Departments, and 9 trials have been undertaken by the Fields Division, mainly of the effect of fertilizers and of spraying and dusting with various chemicals. The incidence of the disease during the past season was very low, however, and conclusive results are not expected to be available from the past year's trials.

(f) *Insects and Insecticides*.—These trials are mainly studies of the liberations of parasites of St. John's wort and bidi-bidi and trials with insecticides such as D.D.T. against grass-grub, crickets, and other insects. Much of this work is still in the preliminary stages.

Other experiments cover ecology studies of tussock country, comparisons of laboratory, field, and glasshouse germinations of pasture seeds, and trials of some introduced species in various localities such as high-altitude country.