

(d) *Barley*.—During the year 10 trials have been conducted with green-feed barley varieties, and have demonstrated the value of Newal and Oderbrucker as quick-growing but essentially “one crop” types, as compared with the Cape barleys, Black Skinless, and especially a new introduction, Wong, which show good recovery after grazing or cutting. The green-feed trials during the coming year will include various oat varieties and ryecorn.

Twelve trials with malting-barley are still in progress. Eight of these are variety trials, and some of the more recent introductions, such as Golden Archer, are showing considerable promise. A close watch is kept on malting-quality, and samples of all trial varieties are tested to estimate this factor. The remaining trials (4) are manurial experiments, with the major emphasis placed on the value of lime as it affects yield and malting-quality of barley.

(e) *Brassica Crops*.—Thirty-three of the 47 trials with these crops are trials with a number of turnip and swede varieties which have been laid down mainly to obtain preliminary information concerning the growth, disease resistance, and keeping-quality of various lines grown from New Zealand and introduced seed. These trials are proving most valuable and informative. Six trials are with turnip and swede varieties, some of which may show resistance to club-root disease. These trials also include treatment with “mercurated phosphate” (which is a mixture of superphosphate and mercuric chloride), which in earlier trials has given promise of being an effective means to control the disease. Three trials compare “silico phosphate” (a new type of fertilizer recently produced in England) against reverted superphosphate as a swede-fertilizer. Two trials are investigating the manuring of the swede crop for seed-production, with special reference to nitrogenous fertilizers. Finally, 3 trials at the Marton Experimental Area compare the productiveness and feeding-value of various varieties of rape and chou moellier, and an investigation into rates of seeding and methods of sowing the rape crop.

(f) *Linen Flax*.—The trials this year were again concentrated on a single area, this time at Claremont, near Timaru. The experiments included a variety trial, manurial trials, rate-of-seeding trials, and trials with the new type of coulter which gives a “broadcast” distribution and which is proving of value in linen-flax sowings. Sheaves from these trials are now being processed by the Linen Flax Corporation for straw and fibre yields and estimation of fibre quality. One trial with the new type of coulter compared with the ordinary type was also sown in the Centre Bush district, Southland.

(g) *Linseed*.—Four trials are in progress in which a varietal comparison is made at two rates of seeding. The trials include Golden Viking, a variety which was particularly promising last season.

(h) *Peas*.—Another trial was sown this year on the lines of those in the previous season—namely, the use of organic mercurials and other products in the “dusting” of the seed to improve field germination and establishment of plants.

(i) *Sugar-beet*.—In co-operation with the Department of Industries and Commerce, two 10-acre sugar-beet field trials have been established, using machinery introduced for the purpose. Specially imported harvesting and loading equipment will also be used on these trials, the object of which is to investigate the economic possibilities of sugar-beet growing under conditions of full mechanization. A small-scale trial, to test various lines of sheared and decorticated sugar-beet seed in respect of the efficiency of the “singling” of the seed, was also sown.

(j) *Maize*.—Twelve trials, the majority of which are in the Gishorne district, have been sown this year. Seven of these are varietal trials, including the hybrid lines imported from the United States, which have given promise