

*Tomato-canker*.—Investigations to ascertain the effect of method of seed extraction on the seed carriage of tomato-canker showed that acid extraction with 1.6 per cent. hydrochloric acid destroyed tomato-canker organisms carried on the seed. The alkaline method of extraction, using 10 per cent. washing-soda, did not destroy the organisms.

In experiments on control of tomato-canker on dry seed samples it was shown that seed-carried infection could be eliminated by treatment for twenty-four hours with 5–8 per cent. hydrochloric acid or 1 in 2,000 acidulated mercuric chloride without loss of germinating capacity.

*Potato Virus Diseases*.—In a survey of certified seed potatoes for masked virus infection the eight varieties tested all showed some infection with potato virus X, while three varieties—Aucklander Short Top, Aucklander Tall Top and Dakota—showed some infection with potato virus Y.

*Potato Fungus Diseases*.—A survey of potato crops throughout New Zealand showed that the following diseases were of importance: late-blight in Auckland, Nelson, and Dunedin; sclerotinia-disease in Auckland and Dunedin; corticium-disease in Palmerston North; and verticillium-wilt in Christchurch and Dunedin.

*Flax-rust of Linen Flax and Linseed*.—A further series of 21 linseed and linen-flax varieties was tested for resistance to rust. The varieties Ottawa 770B (C.I. 355), Argentine Selection (C.I. 462), B5128, Tammes Pale Blue (C.I. 333-1) and Marye (C.I. 112) were found to be highly resistant. The high resistance of Sheyenne, the Russian varieties Stakhanovetz (D. 83 and 806/3), Cascade, Wada, and Argentine II was confirmed in further tests.

Identification of flax-rust races has been continued, and the work is still in progress, approximately 50 collections of rust having been tested on differentiating varieties. To secure information on the overwintering of flax-rust, a survey of 38 linen-flax areas in South Canterbury was carried out during October, 1949. Volunteer plants were found in 17 areas, and flax-rust infection was found on plants in five of these areas.

A survey of 95 linseed crops carried out during February, 1950, in Canterbury, Otago, and Southland, showed that flax-rust did not cause major losses during the past season. Of the 74 crops showing infection, the disease was severe in 7, moderate in 8, slight in 16, and the remaining 43 showed only a trace of disease. Infection was found in a few Golden Viking crops, but all Sheyenne crops remained free from the disease.

*Browning of Linseed and Linen Flax*.—During a survey of linseed crops it was found that browning was confined to South Otago and Southland. Of 14 crops infected, 4 showed moderate and 3 slight infection, and the remaining 7 showed only a trace of the disease.

*Pasmo of Linseed and Linen Flax*.—This disease was largely confined to Mid and South Canterbury, but its incidence was greater than in the previous season. Thirty-five crops were infected, of which 8 were severe, 10 moderate, 1 slight, and 16 showed a trace of infection.

*Root-rot of Peas*.—Glasshouse and field trials to ascertain the possibility of controlling root-rot by application of fungicidal seed dressings showed that in heavily-infected soil none of eight materials tested gave adequate protection against this disease.