

PLANT DISEASES DIVISION

PLANT DISEASES INVESTIGATION

Investigations of specific diseases of tree-tomato, peas, tomatoes, cucumber, and swedes have been continued. Tree-tomato is subject to three virus diseases, of which one is known to be cucumber-mosaic.

Investigations to elucidate specific problems in relation to the following diseases have been carried out: tree-tomato mosaic, pea-mosaic, tomato spotted-wilt, cucumber-mosaic, swede soft-rot and dry-rot, blind-seed disease of rye-grass (factors influencing infection), raspberry verticillium-wilt, light leaf-spot of brassicas, cucurbit-wilt (troublesome on watermelon and pumpkin in Auckland area), chocolate-spot of broad beans, celery-stem crack (corrected by borax application), hollow stem of brassicas, yellow-leaf of phormium, linen-rust (linseed and linen-flax rust).

THERAPEUTANT TESTING AND IMPROVEMENTS IN DISEASE CONTROL

(See also Fruit Research Report, p. 11)

Blind-seed Disease of Rye-grass.—Trials showed that the best control was secured with sprays of Bordeaux. Next in order of decreasing effectiveness were Dithane, Phygon dust, Phygon solution, and Fixtan.

Grape Mealy-bug.—Control in the glasshouse was secured with a dust containing 5 per cent. p.p.i. D.D.T. and a spray containing 1 per cent. D.D.T.

Tomato Late-blight (Field Tests).—Phygon gave adequate control but caused excessive plant injury; Dithane, moderate control and damage; while Cuprox and Coppesan gave adequate control without plant injury.

Tomato Leaf-mould (Comparative Glasshouse Tests).—Phygon gave good control but caused serious plant injury at 1-4000. Shirilan AG gave moderate control, whereas T.M.T.D. and Fermate were less effective.

Certification of Therapeutants.—Forty-four products were certified during the year.

POMOLOGY INVESTIGATIONS

(See Fruit Research Report, p. 11)

TIMBER PRESERVATION INVESTIGATIONS

(See Building Research Report, p. 8.)

MISCELLANEOUS

Synthetic Hormone Injury.—Severe injury to a wide range of economic plants has been demonstrated by traces of 2-4 D (a hormone used as a weedkiller). This may result from spray drift, vapour, or residues left in spray pump.

D.D.T. in Paints.—A flat oil paint with D.D.T. is the most effectual in destruction of flies, next in decreasing order of effectiveness enamel, oil-bound water paint, and distempers.

Disease-free Tomato-seed.—Thirty-five pounds of tomato-seed of the variety Potentate has been produced ready for distribution to growers for next season. Acid extraction of seed has been investigated and a technique evolved suitable for New Zealand. It is simple, efficient, cheap, and yields a superior sample of seed. Tree-tomato, cucumber, and passion-fruit seed can also be produced by this method.

Legume Culture.—Cultures for 190,000 lb. of lucerne-seed has been supplied to 1,610 farmers. Figures show a decrease of 23,000 lb. (approximately 1,300 acres) from the previous season.