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Citrus Virus Diseases of Trinidad, Jamaica, and British Honduras

THE CITRUS RESEARCH UNIT of the Regional Research Centre of the University of the West Indies, Trinidad, is concerned with the research problems of Trinidad, Jamaica, and British Honduras. Included among the investigations are studies on citrus virus diseases. In this paper, the work under way in the three countries and the progress achieved to date are given.

Trinidad

TRISTEZA.—In 1958-59 several unhealthy Marsh grapefruit trees on sour orange stock were dying from an unknown cause. These trees displayed external symptoms of quick decline as described by Bitters and Parker (1) and pinholing symptoms were present on the inner surface of the bark at the bud-union. Samples of bark showing these symptoms were examined anatomically by Dr. Henry Schneider (5) of the University of California, and the results of his examinations indicated that the trees were affected with tristeza. Inoculation of buds from diseased trees to West Indian lime plants, however, failed to lead to any of the known positive symptoms of tristeza; viz., vein flecking or cupping of leaves, stunting, or stem pitting on test plants. Further investigations are in progress.

PSOROSIS.—Bark scaling symptoms have been found on several Marsh grapefruit and Valencia orange orchards throughout the territory. Such bark scaling is confined to the old orchards and the degree of scaling appears to increase as the tree gets older. Burke (2) reports the presence of psorosis in Trinidad. His finding was based on field observations. Bud inoculation from diseased trees to sweet orange seedlings failed to

induce any of the chlorotic leaf patterns described by Wallace (7). Observations of diseased trees during flushing periods throughout the year also failed to reveal characteristic leaf symptoms of psorosis. Malaguti and Knorr (3) also found citrus trees in Venezuela with bark lesions of psorosis, but without young leaf symptoms.

EXOCORTIS.—Neither trifoliate orange nor Rangpur lime are used as rootstocks in the territory. Within recent years, Rangpur lime has been budded mainly for West Indian lime, but the established orange and grapefruit orchards are budded onto stocks tolerant of exocortis. In some rootstock trials budded four years ago, where Rangpur lime and trifoliate orange were among the rootstocks being tested, typical symptoms of bark scaling and splitting at the base of these rootstocks have developed during the last year. Shoots were allowed to grow from Rangpur lime rootstocks showing these diseased symptoms, and such shoots showed yellowing and cracking of bark as reported by Rossetti (4).

XYLOPOROSIS.—It is not known whether this disease is present in the territory or not, as susceptible rootstocks such as Sweet lime and Orlando tangelo are not used. In a rootstock trial planted eleven years ago in which Orlando tangelo is one of the rootstocks being tested, plants with Marsh grapefruit and Valencia orange scions on this rootstock appear to be normal and show no signs of being diseased.

CURRENT PROJECTS.—1. *Bud certification program.*—Selected mother trees of Valencia orange and Marsh grapefruit in the territory are being tested for presence of tristeza, exocortis, xyloporosis, and psorosis viruses.

2. *Nucellar lines.*—Nucellar lines of Valencia, Parson Brown, Pineapple, Navel, and Jaffa orange and Marsh, Foster, and Ruby grapefruit are being grown. This project was started three years ago.

Jamaica

TRISTEZA.—The presence of this disease in the territory was reported by Stell (6). In this report it is stated that symptoms consisting of severe tree stunting and extreme honeycombing of the inner side of the bark immediately below the bud-union were exhibited on several orange and grapefruit trees on sour orange rootstock. It is also reported that transmission tests on West Indian lime resulted in characteristic symptoms of tristeza. The only known vector recorded in Jamaica, the report states, is *Aphis gossypii* (Glov.); this may explain the fact that the dis-

ease behaves in a similar manner to the mild strain present in Florida.

PSOROSIS.—Bark-scaling symptoms resembling those of psorosis can be seen in most of the old orchards of the territory, especially on Marsh grapefruit trees. There is no report of young leaf symptoms being present on such trees or confirmation of the presence of the disease by inoculation to test plants.

EXOCORTIS AND XYLOPOROSIS.—These diseases are not seen in the territory, as susceptible rootstocks are not commonly used. In one rootstock trial of the Ministry of Agriculture, bark-scaling symptoms of exocortis were observed on Rangpur lime rootstock.

CURRENT PROJECTS.—Testing for citrus viruses and production of nucellar lines is confined to Ortaniques, an important commercial variety of citrus of the territory. This variety is being tested for presence of tristeza, xyloporosis, exocortis, and psorosis viruses.

Work is not contemplated on testing local lines of Marsh grapefruit and Valencia orange as this territory is importing certified budwood and nucellar lines of these varieties from Florida. It is intended that such introductions will be used for future commercial production of plants.

British Honduras

TRISTEZA, EXOCORTIS, AND XYLOPOROSIS.—There are no official reports of the presence of these diseases in the territory.

PSOROSIS.—Bark lesions are present in old Marsh grapefruit trees in this territory. No inoculation tests have been carried out to confirm the presence of psorosis, and it is not known whether such trees exhibit young leaf symptoms or not.

Budwood is being imported from Florida into the territory, and as a consequence no work on bud certification or production of nucellar lines is in progress.

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