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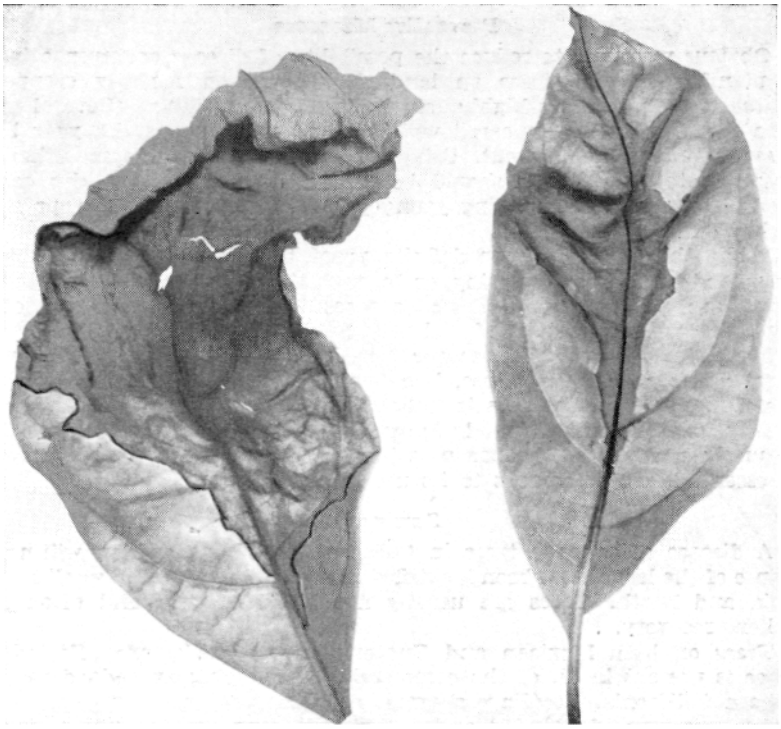

Fig. 1. Symptoms of Phytophthora seedling blight of avocados.

Phytophtora Seedling Blight, A New Disease of Florida Avocados

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A new disease of Florida avocado seedlings was discovered in October, 1947, in a large commercial nursery near Princeton. Nearly all of approximately 4000 seedlings were attacked to some extent. The disease affected mainly the leaves but it also caused stem lesions which sometimes resulted in breaking of the stems. The plants were rendered unsuitable for grafting, and the scions of plants already grafted were attacked and frequently killed. The seedlings, grown from the seed of several varieties, showed no observable difference in reaction to the disease.

The most conspicuous symptoms were present on matured leaves as large, irregular reddish-brown necrotic areas (Fig. 1) that appeared to enlarge most rapidly along the larger veins. Lesions on young leaves were darker in color and such leaves were frequently curled and twisted. The terminal bud of many seedlings was killed. Stem lesions, observed only on succulent stems, were elongate, sunken, and dark in color, occasionally cracked, and sometimes resulted in stem breaking and the death of the plant. Stem lesions appeared to result from the progress of the disease from the

petioles into the stem. Diseased plants showed a marked tendency toward lateral branch production from axillary buds.

Fig. 2. Phytophthora seedling blight. A new disease of Florida avocados.

Conidia of a **Phytophthora** were found uniformly in the necrotic areas though not in abundance. Isolations from the margins of the diseased areas resulted in pure cultures of a **Phytophthora** identified by Dr. C. M. Tucker, University of Missouri, as **P. palmivora** Butler. Conidia of this fungus, obtained from cultures, were atomized on uninjured leaves of seedlings which were then covered with a bell jar for 48 hours. Initial disease symptoms were present 48 hours after inoculation as water-soaked spots on the leaves. These were generally circular until a major vein was contacted; subsequent enlargement was most rapid along the veins. All stem lesions resulted from the growth of the fungus into the stem from the leaf. Symptoms, as seen in the nursery, were evident after 5 to 7 days. The fungus was readily recovered from these lesions. Control plants, treated similarly, remained healthy.

A survey of the available literature disclosed only one record of the avocado being a host of this fungus. Tucker (1) listed the avocado as a host of **P. palmivora** in the Philippines and cited Reinking (2) as the authority. An examination of Reinking's publication reveals, however, that he did not identify the species of **Phytophthora** involved, but merely stated that:

"It resembles somewhat the fungus that produces coconut bud rot, black rot of cacao and the rots of various other plants."

While Reinking did not specifically identify the pathogen, his description and illustration of avocado seedling blight in the Philippines make it appear to be identical with the disease herein described.

The outbreak of this disease occurred during a period of heavy rainfall and high humidity. The disease became unimportant with the advent of drier weather and the moving of the plants to the open from the slathouse. Raising the plants in the open and spacing them so as to promote rapid drying should help to minimize or perhaps avoid this disease. Fungicidal controls were not tested, but copper sprays might be expected to provide some measure of protection.

LITERATURE CITED

1. Tucker, O. M. The distribution of the genus Phythophthora. Univ. Mo. Agr. Exp. Sta. Res. Bull. 184. 1933.
2. Reinking, O. A. Citrus Diseases in the Philippines, Southern China, Indo-China and Siam. Phil. Agr. 9: 121-179. 1921.