MANGO WITHER-TIP

(*Colletotrichum gloeosporioides* Penz.)

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The fungus *Colletotrichum gloeosporioides* has been reported from time to time as causing troubles of various kinds on a number of suscepts. However, its true pathogenicity or active parasitism has been the subject of much speculation and a matter of conjecture. On citrus fruits, for instance, *C. gloeosporioides* has been held not to be an active pathogene, Smith (3) and Fulton (1). Winston (5), using a large number of strains of *C. gloeosporioides,* found no active pathogenicity exhibited on young fruits of various citrus species. Nowell in his book on diseases of tropical plants, page 211, states it is mainly a saprophyte. The author (2) came forth with the statement that this fungus is an active pathogene in Porto Rico. He found it to be the cause of a heavy drop of the young fruits of the orange, pomelo and Chinese dwarf lemon.

In the present short paper the writer intends to bring more evidence of pathogenicity of strains of *C. gloeosporioides.* He almost predicted the ability of *C. gloeosporioides* to produce wither-tip on the mango (2), when he stated that "mango twigs when tender seem to be susceptible to the attack of *Colletotrichum gloeosporioides*" (see his plate I, fig. 3). This statement was based on results which he obtained with spore-spray inoculations of avocado, mango and pomelo strains of *C. gloeosporioides* on the unopened buds of the mango.

Early in November 1926 the writer directed his attention to a few mango trees in the station grounds. It was during a short dry spell and there were no signs of a fungus infection. Two weeks later, with the coming of heavy rains and a new flush in the trees, there occurred a very rapid withering of the young tender twigs and buds. There was also considerable spotting of the leaves, manifested as tiny, brownish spots between the main veins, which later increased in size. This resulted in long, sometimes narrow, necrotic areas on the tender, pinkish leaves which caused a breaking and splitting at the infected areas. Soon, the infection which apparently starts in and around the unopened leaf buds, extends down the shoot as far as the upper limit of the preceding growth. The tender foliage soon dies and falls to the ground. Acervuli of the

fungus appear readily on the surface of the withered twig, especially on the scars left by the leaf petioles.

Isolations were made from various places of infection. Spore-spray inoculations with pure cultures of the pathogene were made, covering the buds in the best manner to insure control conditions. The same symptoms as observed with natural infection were reproduced with artificial inoculations. The pathogene, *C. gloeosporioides*, same strain as used in inoculation was recovered from the infected twigs.

This is a case where a fungus held to be a saprophyte under many circumstances, exhibits in some of its strains a strictly parasitic action on one of its suscepts. We might here recall a similar situation existing with *Macrosporium parasiticum* Thüm, the cause of the black mold of the onion, whose pathogenicity has not been fully accepted. Teodoro (4) has pronounced it as an aggressive parasite. Others have held rather dubious views as to its secondary nature.

It seems probable that fungi which have heretofore been known as saprophytes or weak parasites on necrotic areas of living plants, or the intermediate living tissues, will gradually, through adaptation, bring about changes in their ontogeny which will eventually place them in the category of the more highly specialized forms—the active parasites.

BIBLIOGRAPHY

(1) FULTON, H. R. Relative susceptibility of citrus varieties to attack by *Gloeosporium limetticolum* Clausen. Jour. Agr. Res. **30**: 629–635. 1925.

(2) NOLLA, J. A. B. The anthracnoses of citrus fruits, mango and avocado. Jour. Dept. Agr. of Porto Rico, **10**: 25–63, pl. 1–6, fig. 1–38. 1926.

(3) SMITH, R. E. Wither-tip. Cal. Cult. **37**: 76–77. 1911.

(4) TEODORO, NICANOR G. A study of a Macrosporium disease of onions (*Allium cepa* L.) Philippine Agr. Rev. **16**; 227–280. 1923. (Also as publication of the Dept. Agr. and Nat. Resources, Bur. Agr., Philippine Islands, 1–51. 1924.

(5) WINSTON, J. R. Tear-stain of citrus fruits. U. S. Dept. Agr. Bul. 924. 1924.

FIG. 1.—Mango tree with a severe infection of *C. gloeosporioides* on the twigs