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Disease Notes

First Report of Anthracnose Caused by *Colletotrichum acutatum* on Tamarillo in the United States

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Open Access.

An aggressive anthracnose disease was identified on greenhouse and home garden cultivated tamarillo (*Solanum betaceum*) in 2010 and 2011 in Prince George's and Montgomery counties of Maryland. Angular lesions, dark brown at the edges and tan at the interior, eventually engulfed leaves of mature, fruit bearing trees. Additional lesions were seen on petioles and stems, resulting in stem girdling. Flower clusters were also attacked, but fruit lesions were not observed. Sporulation was evident only on stem tissue. In greenhouse-cultivated 3- to 8-month-old immature plants were found to be infected in the foliar and apical regions, resulting in death. Cultures obtained from surface-sterilized leaf and stem tissue of multiple disease samples cultivated on potato dextrose agar consistently resulted in a single fungal isolate. Molecular identification was carried out by sequence analysis of the region amplified using ITS1 forward and ITS4 reverse primers (ITS1 and 2, 5.8S ribosomal RNA). Full matches were found to *Glomerella acutata* (anamorph *Colletotrichum acutatum* Simmonds). A representative sequence was submitted to GenBank as JN863589. Cultures were reddish gray with masses of macroscopically mucilaginous orange-brown spores. Conidia were fusiform, measuring $14.0 \pm 2.3 \times 5.7 \pm 0.7 \mu\text{m}$. No setae were present, but structures resembling immature perithecia were present, embedded in the agar, a characteristic of *C. acutatum* Group D isolates (2). Six immature plants (5 months old) and three mature plants (2 years old) were spray inoculated with 1×10^4 conidia per ml of water into apical regions and on the upper foliage. Plants were enclosed in clear plastic bags and incubated for 3 days. Two noninoculated plants of each age were maintained as controls. Bags were removed and plants were maintained in the greenhouse at 25°C. Within 2 weeks, all inoculated plants expressed disease symptoms. Lesions on the foliage were evident as well as the apical regions. Lesions progressed, killing the upper regions of the plant within 1 month.

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Isolations consistently resulted in cultures of *C. acutatum*. A culture obtained from infected tissue derived from the first inoculation study was used to repeat Koch's postulate. Anthracnose of tamarillo has been reported in South America and New Zealand where commercial production is concentrated, however, it is primarily a fruit disease (1). Our isolate is principally a foliar and stem pathogen. Host range for *C. acutatum* is wide enough that our isolate likely originated from another host since there is no widespread tamarillo production in the United States. Interestingly, solanaceous crop plants are generally subject to infection by *C. coccodes*, not *C. acutatum*, however, this may be changing (3).

References: (1) L. Afanador-Kafuri et al. *Phytopathology* 93:579, 2003. (2) R. Lardner et al. *Mycol. Res.* 103:275, 1999. (3) H. Xia et al. *Plant Dis.* 95:219, 2011.

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The *Colletotrichum acutatum* species complex

[U. Damm](#), [P.F. Cannon](#), [J.H.C. Woudenberg](#), and [P.W. Crous](#)

Studies in Mycology Sep 2012, Volume 73, 37-113

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