

Abstract

Postbloom fruit drop (PFD) of citrus, caused by *Colletotrichum acutatum*, produces orange-brown lesions on petals and results in premature fruit drop and the retention of calyces. *C. gloeosporioides* is common in groves and causes postharvest anthracnose on fruit. Both diseases are controlled effectively by the fungicide benomyl in research fields and commercial orchards. Highly sensitive and resistant isolates of *C. gloeosporioides* were found, whereas all isolates of *C. acutatum* tested were moderately resistant. In preliminary studies conducted in vitro with three isolates of each, mycelial growth of sensitive isolates of *C. gloeosporioides* was inhibited completely by benomyl (Benlate 50 WP) at 1.0 µg/ml, whereas resistant isolates grew well at 10 µg/ml. Growth of all isolates of *C. acutatum* was inhibited by about 55% at 0.1 µg/ml and by 80% at 1.0 µg/ml. Spore germination of *C. acutatum* was inhibited more at 0.1 µg/ml than at 1.0 µg/ml or higher concentrations. In all, 20 isolates of *C. acutatum* from 17 groves and 20 isolates of *C. gloeosporioides* from 7 groves were collected from locations with different histories of benomyl usage in São Paulo, Brazil, and Florida, United States. Benomyl at 1.0 mg/ml completely inhibited growth of 133 isolates of *C. gloeosporioides*, with the exception of 7 isolates that were highly resistant to the fungicide, whereas all isolates of *C. acutatum* were only partially inhibited at 0.1 and 1.0 µg/ml. Analysis of variance indicated that the sensitivity of the isolates of *C. acutatum* was not affected by benomyl usage or grove of origin, and country of origin had only minor effects. No highly resistant or sensitive isolate of *C. acutatum* was recovered. Partial sequencing of the beta-tubulin gene did not reveal nucleotide substitutions in codons 198 or 200 in *C. acutatum* that usually are associated with benomyl resistance in other fungi.