

**Title** First report of *Colletotrichum boninense*, *C. capsici*, and a *Glomerella* sp. as causes of postharvest anthracnose of passion fruit in Florida

**Authors** T. L. B. Tarnowski and R. C. Ploetz

**Citation** Plant Disease 94 (6): 786. 2010.

**Keywords** passion fruit; anthracnose

### Abstract

Anthracnose is an important foliar and fruit disease of passion fruit, *Passiflora* spp. (3). In 2008, postharvest anthracnose on purple and yellow passion fruits (*P. edulis* Sims and *P. edulis* f. *flavicarpa* O. Degner, respectively) from a commercial planting in Miami-Dade County, FL was examined. Lesions began as light brown areas that became papery, covered much of the fruit surface, and developed pink-to-dark sporulation. Single-conidium isolates from lesions were examined morphologically and with internal transcribed spacer (ITS) sequences. Four taxa were identified: *Colletotrichum boninense* (GenBank No. GU045516) with felted cream-to-orange colonies and cylindrical conidia; *C. capsici* (synonym *C. truncatum* [2]) (GU045515) with sparse, white mycelia, setose acervuli, and falcate conidia; *C. gloeosporioides* with fluffy white-to-gray colonies and straight, cylindrical conidia; and a *Glomerella* sp. (GU045517) with darkly pigmented perithecia. In two experiments, four mature, yellow passion fruit were wounded at a single equatorial site with a sterile needle and inoculated with a 15- $\mu$ l drop of 0.3% water agar that did not contain (noninoculated control) or contained  $10^5$  conidia per ml of representative isolates from each taxon. After 21 days at 25°C without light, anthracnose incidence was recorded and the presence of the isolates was confirmed by their recovery from lesion margins on potato dextrose agar. Anthracnose did not develop on noninoculated control fruit. Mean incidences of anthracnose exceeded 50% for isolates of *C. boninense* (three from passion fruit), *C. capsici* (two from passion fruit), and a *Glomerella* sp. (two from passion fruit and one each from papaya and eugenia). Despite its common indictment as a causal agent of anthracnose on passion fruit (3), symptoms developed on only one fruit that was inoculated with an isolate of *C. gloeosporioides* from passion fruit (13%) and did not develop after inoculation with an isolate from papaya. Work is needed to determine whether host-specific populations of *C. gloeosporioides* exist on passion fruit that were not assessed during this study or whether the pathogen was misidentified in previous reports on this host. *C. boninense* was associated previously with postharvest anthracnose of passion fruit in Japan and

Colombia, whereas *C. capsici* was associated with leaf anthracnose of passion fruit in Florida and Japan (4); both species are reported here for the first time as causes of postharvest anthracnose of passion fruit in Florida. *Glomerella* sp. caused darkly pigmented lesions and produced the teleomorph on symptomatic passion fruit and in single-ascospore cultures. Isolates with ITS sequences that are 99% homologous to those from passion fruit have been recovered in South Florida from eugenia, papaya, and *Piper betle* (4) and from other locations on several other hosts (GenBank); they are often nonpathogenic endophytes. Almeida and Coêlho (1) reported in Brazil a *Glomerella* sp. that formed the teleomorph in culture and caused anthracnose on passion fruit, but did not provide ITS sequences. Additional work is warranted on the identity and ecology of these fungi.