Colletotrichum feijoicola
Colletotrichum feijoicola Guarnaccia & Damm, sp. nov.

Eymology. Name refers to feijoa, the host plant from which this fungus was collected.

Classification — Glomerellaceae, Glomerellales, Sordariomycetes.

Sexual morph not observed, but pale brown, subglobose, glabrous immature ascocoma formed after > 3 wk on SNA, 20–65 \( \mu m \) diam. Asexual morph on SNA. Vegetative hyphae 1–8.5 \( \mu m \) diam, hyaline, smooth-walled, septate, branched. Chlamydospores not observed. Conidiomata absent, conidiophores and setae formed directly on hyphae. Setae not observed. Conidiophores hyaline, smooth-walled, septate, branched, to 30 \( \mu m \) long. Conidiogenous cells hyaline, smooth-walled, cylindrical to clavate, sometimes flexuous, sometimes extending to form new conidiogenous loci, 5.5–21 × 3–4 \( \mu m \), opening 1.5–2.5 \( \mu m \) diam, collarette 1–1.5 \( \mu m \) long, periclinal thickening distinct. Conidia in mass single or in loose groups, pale to medium brown, smooth-walled, bullet-shaped, navicular, subspheical, ovoid to irregular in outline, with an entire, undulate to lobate margin; (6.5–)8.5–13(–17) × (4.5–)6–9.5(–12.5) \( \mu m \), mean ± SD = 10.6 ± 2.3 × 7.7 ± 1.7 \( \mu m \), L/W ratio = 1.4. No sporation on Anthriscus stem or OA. Strain GMLC 1898 remained sterile.

Culture characteristics — (near UV light with 12 h photo-period, 20 °C after 10 d): Colonies on SNA flat with entire margin, hyaline to saffron, filter paper partly pure yellow, filter paper and Anthriscus stem covered with white felt-like aerial mycelium, reverse same colours; growth 23.5–28 mm in 7 d (34.5–39 mm in 10 d). Colonies on OA flat with entire to undulate margin; buff, pale luteous, saffron, apricot to dark brick, partly covered with white felt-like aerial mycelium, reverse buff, pale luteous, saffron, cinnamon to dark brick, growth 27.5–32.5 mm in 7 d (37.5–40 mm in 10 d). Conidia in mass not observed.

Typus. P ortugal, Azores Islands, Sao Miguel, from a leaf spot of Acca sellowiana (feijoa, Myrtaceae), 17 July 2017. V. Guarnaccia (GML-F116096 holotype, culture ex-type CBS 144633 = GMLC 1899 = CPC 34246; act, gapdh, ITS, LSU and tub2 sequences GenBank MK876466.1, MK876475.1, MK876413.1, MK876420.1 and MK876507.1, MycoBank MB830862).

Additional material examined. P ortugal, Azores Islands, Sao Miguel, from a leaf spot of A. sellowiana, 17 July 2017, V. Guarnaccia, GML-F116095, culture GMLC 1898 = CPC 34245; act, chs-1, gapdh, his3, ITS, LSU and tub2 sequences GenBank MK876465.1, MK876471.1, MK876474.1, MK876477.1, MK876414.1, MK876421.1 and MK876506.1.

Notes — Acca sellowiana is native to South America and is grown as an ornamental plant or for its tropical fruit production in Europe, where cultivation is affected by fungal pathogens such as Calonectria spp. (Guarnaccia et al. 2014). Colletotrichum feijoicola was found associated with reddish leaf spots of A. sellowiana cultivated in a small orchard in Sao Miguel, the main island of the Azores archipelago.

No Colletotrichum species has previously been described from Acca spp. and none was reported on Acca spp. in Europe (Farr & Rossman 2018). However, there are three previous reports of Colletotrichum spp. on A. sellowiana from other regions: C. gloeosporioides in Uruguay (Bettucci et al. 2004), C. s iamense in Brazil (Fantinel et al. 2017) and C. theobromicola in New Zealand (Weir et al. 2012); all of these species belong to the C. gloeosporioides species complex. However, the report of C. gloeosporioides in Uruguay is unreliable as the study was conducted prior to the revision of the C. gloeosporioides species complex (Weir et al. 2012), and could refer to probably any Colletotrichum species with cylindrical conidia and rounded ends including species e.g. in the C. boninense, C. gloeosporioides and C. orchidearum species complexes (Damm et al. 2012, 2019, Weir et al. 2012).

In contrast to these reports, BLASTn searches with ITS, LSU, act, tub2 and gapdh sequences of C. feijoicola in NCBI GenBank nucleotide database restricted to ex-type strains resulted in different species of the C. boninense species complex: 98% similarity with C. oncidii and C. colombiense (CBS 129828 and CBS 129818; Damm et al. 2012) using ITS, 99% with C. hippeastri (CBS 125376; Vu et al. 2019) using LSU, 96% with C. camelliae-japonicae and C. annellatum (LC6416 and CBS 129826; Hou et al. 2016, Damm et al. 2012) using act, 97% with C. annellatum (CBS 129826; Damm et al. 2012) using tub2 and 90% with C. petchii (CBS 378.94; Damm et al. 2012) using gapdh.

Based on these results we regard the strains from A. sellowiana as a new species belonging to the C. boninense species complex. Several Colletotrichum species are known as pathogens of various plants mainly in tropical and subtropical regions of the world; some of them have recently been reported as pathogens of other tropical fruit trees in Europe (Guarnaccia et al. 2016). Thus, C. feijoicola should be considered as a potential threat for fruit production.

Colour illustrations. Forest in Azores Islands, Sao Miguel, where the species was collected. Left: colony on PDA; conidiomata; appressoria; right: immature ascomata; conidiophores; conidia. Scale bars = 10 \( \mu m \).