

*Mycosphaerella wachendorffiae*



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## *Mycosphaerella wachendorffiae* Crous, *sp. nov.*

Asci fasciculatis, obovoidibus, bitunicatis, octosporis, 40–60 × 12–20 µm. Ascosporis hyalinis, levibus, fusoidibus-ellipsoideis, (15–)18–20(–22) × (4–)5(–6) µm.

*Etymology.* Named after the host from which it was collected, *Wachendorffia thyrsofolia*.

*Leaf spots* dark brown, amphigenous, starting as specks or irregular spots with diffuse margins, developing into linear lesions that run along the side of the leaf, and cause tip die-back, with distinct brown margins. *Ascomata* up to 130 µm diam, amphigenous, brown, subepidermal, globose, with central ostiole, up to 30 µm wide. *Asci* fasciculate, obovoid, bitunicate, incurved, 8-spored, 40–60 × 12–20 µm, with apical chamber, 2 µm diam, and multi-layered endotunica; remnants of hamathecial tissue remaining among asci. *Ascospores* hyaline, smooth, fusoid-ellipsoidal, guttulate, tapering towards both ends, widest in middle of apical cell, constricted at septum, (15–)18–20(–22) × (4–)5(–6) µm; ascospores germinating from both ends, with germ tubes parallel to the long axis; spores prominently distorting, becoming up to 10 µm wide, but remaining hyaline, smooth. *Mycelium* consisting of smooth, septate, branched, 2–4 µm diam hyphae, frequently covered in a wide mucoid sheath, up to 5 µm diam. *Anamorph* only observed on malt extract agar. *Conidiophores* reduced to *conidiogenous cells* or a single supporting cell, subcylindrical, straight or flexuous, 2–20 × 3–5 µm, hyaline, but eventually becoming brown and somewhat warty, with several percurrent proliferations at the apex, solitary, though they appear to become aggregated in sporodochia as well. *Conidia* solitary, subcylindrical to fusoid-ellipsoidal, with obtusely rounded apex, and truncate base with marginal frill, guttulate, thick-walled, smooth, hyaline, straight to slightly curved, (12–)13–16(–20) × (3.5–)4(–4.5) µm.

*Culture characteristics* — (in the dark, 25 °C, after 2 wk): Colonies slow growing, erumpent, with sparse aerial mycelium, folded surface, and lobed, feathery margin, reaching 6 mm diam; on malt extract agar surface olivaceous grey with patches of dirty white, reverse sienna; on oatmeal agar surface sienna; on potato-dextrose agar surface olivaceous grey with patches of saffron and dirty white, reverse saffron with patches of smoke-grey.

*Typus.* SOUTH AFRICA, Western Cape Province, Hermanus, Fernkloof Nature Reserve, S 34°23'38" E 19°16'9.7", on leaves of *Wachendorffia thyrsofolia*, 2 May 2010, K.L. Crous & P.W. Crous, holotype CBS H-20584, cultures ex-type CPC 18338 = CBS 129579, ITS sequence GenBank JF951143 and LSU sequence GenBank JF951163, MycoBank MB560167.

*Notes* — The anamorph observed in culture is quite unique for *Mycosphaerella*, and appears to represent a hyaline form of the genus *Colletogloeopsis* (Crous & Wingfield 1997), which has since been reduced to synonymy with *Teratosphaeria* (Crous et al. 2007a, b, 2009b, c). The anamorph would be best placed in the genus *Ahmadia* (Sutton 1980), though no sequence data of any other members of *Ahmadia* are presently available for any possible comparisons.

*Mycosphaerella wachendorffiae* represents the first *Mycosphaerella*-like fungus known from this host, other than *Ramularia miae* (Crous & Groenewald 2006). Based on a megablast search of NCBI's GenBank nucleotide database, the closest hits using the ITS sequence are *Mycosphaerella rosigena* (GU214632; Identities = 489/529 (92 %), Gaps = 18/529 (3 %)) and *Mycosphaerella madeirae* (DQ302976; Identities = 458/496 (92 %), Gaps = 16/496 (3 %)). A similar search using the LSU sequence yields high similarity to *Pseudocercospora epispormogonia* (DQ204758; Identities = 869/879 (99 %), Gaps = 0/879 (0 %)), *Mycosphaerella marksii* (GU214447; Identities = 868/879 (99 %), Gaps = 0/879 (0 %)), *Mycosphaerella intermedia* (DQ246248; Identities = 867/879 (99 %), Gaps = 0/879 (0 %)) and *Mycosphaerella rosigena* (EU167587; Identities = 819/831 (99 %), Gaps = 2/831 (0 %)).

*Colour illustrations.* *Wachendorffia thyrsofolia* at Fernkloof Nature Reserve; symptomatic leaf; asci, germinating and ungerminated ascospores; mycelium with conidiogenous cells and conidia. Scale bars = 10 µm.