

*Pseudocercospora nephrolepidicola*



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## *Pseudocercospora nephrolepidicola* Crous & R.G. Shivas, *sp. nov.*

*Teleomorph.* *Mycosphaerella*-like.

*Pseudocercosporae nephrolepidis* similis, sed conidiis minoribus, (40–)50–60(–95) × (2.5–)3.5(–4) µm, distinguitur.

*Etymology.* Named after the host from which it was collected, *Nephrolepis* (*Lomariopsidaceae*).

*Leaf spots* amphigenous, medium brown, with indistinct margins, 2–12 mm diam. *Conidiomata* pale to medium brown, amphigenous, fasciculate, arising from a well-developed subepidermal, medium brown stroma, up to 150 µm wide, and 50 µm high. *Mycelium* consisting of smooth, septate, brown, branched, 2–3 µm diam hyphae. *Conidiophores* subcylindrical, medium brown, smooth, unbranched or branched below, irregularly geniculate-sinuous, in loosely aggregated fascicles, or separate on superficial mycelium, 1–4-septate, 25–45(–90) × 2.5–3(–3.5) µm. *Conidiogenous cells* terminal on conidiophore, integrated, subcylindrical, pale brown, smooth, proliferating 1–2 times percurrently near apex, 15–25(–40) × (2–)2.5(–3) µm. *Conidia* medium brown, smooth, guttulate, subcylindrical, straight to irregularly flexuous, apex obtusely rounded, base truncate, 3–6(–9)-septate, (40–)50–60(–95) × (2.5–)3.5(–4) µm; hila not thickened nor darkened. *Ascomata* globose, erumpent, brown, up to 80 µm diam, with a central ostiole. *Asci* subcylindrical to narrowly obovoid, 35–50 × 8–10 µm. *Ascospores* fusoid-ellipsoidal, widest in middle of apical cell, tapering towards both ends, apex acutely rounded, constricted at septum, 9–11 × 2.5–3.5 µm.

*Culture characteristics* — (in the dark, 25 °C, after 2 wk): Colonies spreading, erumpent, with folded surface and even, lobate margins, reaching up to 15 mm diam. On potato-dextrose agar surface smoke-grey with patches of grey-olivaceous, iron-grey in reverse; on malt extract agar pale olivaceous-grey (surface), iron-grey in reverse; on oatmeal agar olivaceous-grey with patches of pale olivaceous-grey.

*Colour illustrations.* *Nephrolepis falcata* at Brisbane Botanical Gardens; conidiomata on frond; ascomatum, asci with ascospores; conidiophores, conidia. Scale bars = 10 µm.

*Typus.* AUSTRALIA, Queensland, Brisbane Botanical Garden, on fronds of *Nephrolepis falcata*, 14 July 2009, P.W. Crous & R.G. Shivas, CBS-H 20492 holotype, cultures ex-type CPC 17050, 17049 = CBS 128211, ITS sequence of CPC 17049 GenBank HQ599590 and LSU sequence of CPC 17049 GenBank HQ599591, MycoBank MB517538.

*Notes* — There are several specimens of *Pseudocercospora* spp. on *Nephrolepis* in BRIP, which cannot easily be identified using morphology alone. *Pseudocercospora nephrolepidicola* is morphologically and phylogenetically distinct from *P. nephrolepidis* (on *Nephrolepis cordifolia* (as *N. auriculata*) in Taiwan<sup>1</sup>; conidia subcylindrical, (32–)67–101(–113) × 2–3 µm, 2–9 septate; CBS 119121), in that its conidia are shorter, and wider. Furthermore, *Pseudocercospora phyllitidis*, which was described from leaves of *Nephrolepis* sp. from Florida, has smaller stromata (up to 75 µm diam) with straight to mildly curved obclavate conidia, 20–80 × 2–3.5 µm<sup>2</sup>, than the Australian specimen. A megablast search of NCBI's GenBank nucleotide database using the LSU sequence retrieved as closest sisters *Mycosphaerella quasiparkii* (GenBank EU882143; Identities = 807/808 (99 %), Gaps = 0/808 (0 %)), *Rosenscheldiella brachyglottidis* (GenBank GQ355334; Identities = 874/886 (99 %), Gaps = 0/886 (0 %)), *Mycosphaerella swartii* (GenBank DQ923536; Identities = 865/888 (98 %), Gaps = 3/888 (0 %)) and *Pseudocercospora vitis* (GenBank GU214483; Identities = 864/889 (98 %), Gaps = 5/889 (0 %)). A megablast with the ITS sequence revealed high identity to 'Mycosphaerella sp. De-No' (GenBank HM189290; Identities = 481/482 (99 %), Gaps = 0/482 (0 %)), *M. quasiparkii* (GenBank EU882127; Identities = 573/597 (96 %), Gaps = 17/597 (2 %)) and *Pseudocercospora schizolobii* (GenBank GQ852765; Identities = 571/610 (94 %), Gaps = 28/610 (4 %)).

*References.* <sup>1</sup>Kirschner R, Chen CJ. 2007. Foliicolous hyphomycetes from Taiwan. *Fungal Diversity* 26: 219–239. <sup>2</sup>Chupp C. 1954. A monograph of the fungus genus *Cercospora*. Ithaca, New York. Published by the author.

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