

Penicillifer martinii



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Penicillifer martinii P. Wong, Y.P. Tan & R.G. Shivas, *sp. nov.*

Etymology. Named in honour of Dr P.M. Martin, University of Sydney, for his significant contribution to turf research and education.

On potato dextrose agar after 2 wk in the dark. *Colonies* 4–5 cm diam, mostly adpressed with sparse to moderately abundant hazel aerial mycelium towards the centre, becoming dark vinaceous between the centre and the margin, vinaceous buff at the margins; reverse brown vinaceous, paler at the margin. *Mycelium* consists of septate, yellow to pale brown, branched, smooth hyphae, 2–6(–10) μm . *Ascomata* superficial, non-stromatic, solitary, abundant near the colony margin, globose to ovoidal, 250–400 μm high \times 250–300 μm diam, luteus to cinnamon coloured, KOH-, yellow in lactic acid, glabrous, with numerous dense cylindrical, clavate to capitate hyaline cells lining and protruding from the ostiole. *Ascomatal surface* of broadly ellipsoidal to subpolyhedrally irregular cells, 7–27 μm diam, with 1–3 μm thick walls. *Asci* broadly clavate, 53–70 \times 24–36 μm . *Ascospores* bi- to multiseriate, ellipsoidal, 20–27 \times 11–14 μm , pale yellow, with a median septum, constricted at the septum, ends rounded; wall even, 1 μm thick, smooth in profile to faintly punctate in surface view, exuded *en masse* in green cirri, which become yellowish green to cinnamon with age.

Typus. AUSTRALIA, New South Wales, Sydney, Rose Bay, Royal Sydney Golf Club, from rotted roots of *Cynodon dactylon*, 1 Mar. 2012, P.T.W. Wong (holotype BRIP 59225, includes ex-type culture; ITS sequence GenBank KJ869167, LSU sequence GenBank KJ869225, TEF sequence GenBank KJ869241, MycoBank MB808332).

Additional material examined. AUSTRALIA, Sydney, Pagewood, Bonnie Doon Golf Club, from rotted roots of *C. dactylon*, Feb. 2013, P.T.W. Wong PW13001 (BRIP 59296); Pymble, Avondale Golf Club, from rotted roots of *C. dactylon*, Feb. 2013, P.T.W. Wong PW13002 (BRIP 59297, includes culture); Little Bay, St Michael's Golf Club, from rotted roots of *C. dactylon*, Feb. 2013, P.T.W. Wong PW13005 (BRIP 59298, includes culture); Little Bay, New South Wales Golf Club, from rotted roots of *C. dactylon*, May 2013, P.T.W. Wong PW13018 (BRIP 59308, includes culture).

Notes — *Penicillifer martinii* was isolated from diseased roots and stolons of *Cynodon dactylon* and *Pennisetum clandestinum* from fairways with a patch disease at a number of golf clubs in Sydney, New South Wales, Australia. Pathogenicity tests with *P. martinii* have shown that it is only slightly pathogenic to *C. dactylon*, causing some brown lesions on the roots. Perithecia of *P. martinii* have been also observed on diseased roots and stolons of *C. dactylon* incubated in humid chambers at room temperature (20–30 °C) for several months. Nine species of *Penicillifer* Emden (1968) have been described (Matsushima 1971, 1975, Samuels 1989, Watanabe 1990, Polishook & Bills 1991), four of which have sexual morphs described in *Viridisporea* (Rossman et al. 1999). The combination of the comparatively large and septate ascospores separates *P. martinii* from the other species that produce viridisporea-like morphs. An asexual morph was not observed in cultures of *P. martinii*.

Based on a megablast search of NCBI's GenBank nucleotide database, the closest hits using the ITS sequence are *Viridisporea diparietisporea* (GenBank JN049838; Identities 464/483 (96 %), Gaps = 7/483 (1 %)), *Viridisporea* sp. (GenBank JQ863229; Identities = 514/552 (93 %), Gaps = 11/552 (1 %)), and *V. alata* (GenBank EU860055; Identities = 485/532 (91 %), Gaps 12/532 (2 %)). Closest hits using TEF sequence are *V. alata* (GenBank JF832592; Identities = 337/367 (92 %), Gaps 13/367 (3 %)), *Gliocladiopsis irregularis* (GenBank JQ666104; Identities = 352/422 (83 %), Gaps 30/422 (7 %)) and *G. mexicana* (GenBank JQ666103; Identities = 352/422 (83 %), Gaps 30/422 (7 %)).

Colour illustrations. Patch disease at Bonnie Doon Golf Club, New South Wales; ascomata with cirri, ascomatum, ascospores. Scale bars (from left to right) = 100 μm , 100 μm , 10 μm .

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