
Calonectria mossambicensis

Fungal Planet 212 – 26 November 2013

Calonectria mossambicensis S. Maússe-Sitoe, S.F. Chen & Jol. Roux, *sp. nov.*

Etymology. Name refers to Mozambique, the country where this fungus was first isolated.

On SNA. *Conidiophores* with a stipe bearing penicillate clusters of fertile branches, stipe extensions and terminal vesicles. *Stipes* septate, hyaline, smooth, 58–102 × 3–7 µm; stipe extensions septate, straight to flexuous, 91–203 µm long, 2–6 µm wide at the apical septum, terminating in an obpyriform to ellipsoid vesicle, 2–8 µm diam. *Conidiogenous apparatus* 37–87 × 19–59 µm; primary branches aseptate, 8–24 × 2–7 µm; secondary branches aseptate, 5–20 × 1–9 µm, tertiary branches aseptate, 4–15 × 1–6 µm, each terminal branch producing 2–6 phialides; phialides doliiform to reniform, hyaline, aseptate, 5–11 × 2–4 µm, apex with minute periclinal thickening and inconspicuous collarette. *Macroconidia* cylindrical, rounded at both ends, straight, (35–)38–46(–50) × 3–6 µm (av. = 42 × 4 µm), 1-septate, lacking a visible abscission scar, held in parallel cylindrical clusters by colourless slime. *Megaconidia*, *microconidia* and *sexual morph* not seen.

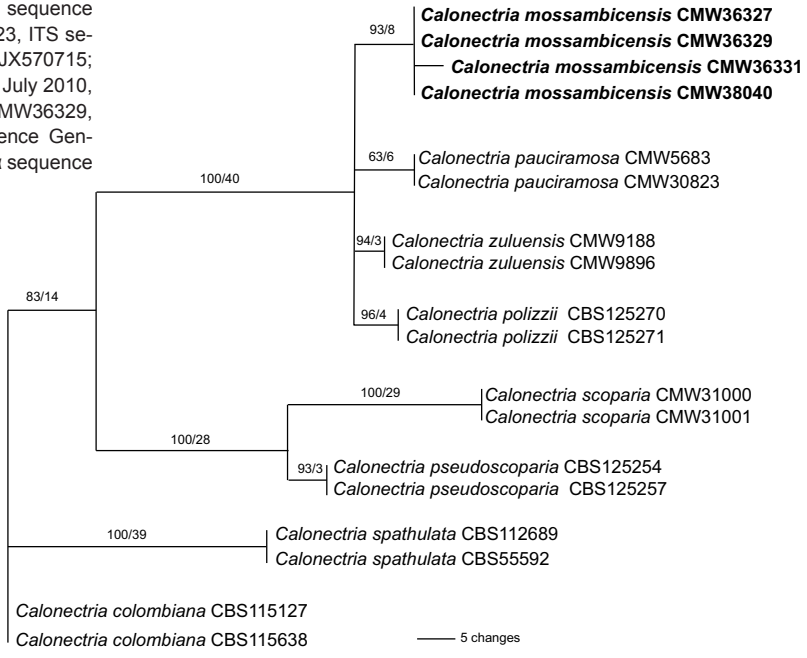
Culture characteristics — Colonies fast growing with optimal growth temperature at 25 °C covering the petri dish (90 mm) in 16 d (growth at 10–30 °C) on malt extract agar (Biolab, Midland, Johannesburg); abundant white aerial mycelium with sparse sporulation; chlamydospores arranged in chains, extensive throughout the medium, forming microsclerotia.

Typus. Mozambique, Manica, Bandula, cutting clones of *E. grandis* × *E. camaldulensis*, July 2010, *J. Roux & S. Maússe-Sitoe* (holotype PREM 60821, cultures ex-type CMW36327, Calmodulin sequence GenBank JX570722, Histone H3 sequence GenBank JX570726, ITS sequence GenBank JX570730, TEF-1α sequence GenBank JX570718, MycoBank MB801447).

Additional material examined. Mozambique, Manica, Bandula, cutting clones of *E. grandis* × *E. camaldulensis*, July 2010, *J. Roux & S. Maússe-Sitoe*, Herb. PREM 60869, culture CMW38040, Calmodulin sequence GenBank JX5707190, Histone H3 sequence GenBank JX570723, ITS sequence GenBank JX570727 and TEF-1α sequence GenBank JX570715; Zambézia, Gurué, cutting clones of *E. grandis* and *E. urophylla*, July 2010, *J. Roux & S. Maússe-Sitoe*, Herb. PREM 60867, culture CMW36329, Calmodulin sequence GenBank JX570721, Histone H3 sequence GenBank JX570725, ITS sequence GenBank JX570729 and TEF-1α sequence GenBank JX570717.

Notes — *Calonectria mossambicensis* (conidia av. = 42 × 4 µm) is morphologically most similar to *Ca. pauciramosa* (av. = 50 × 4.5 µm), *Ca. pollizzi* (av. = 37 × 4 µm) and *Ca. zuluensis* (av. = 36 × 4 µm), but can be distinguished based on the size of its macroconidia (Crous 2002, Lombard et al. 2010). Based on a megablast search of NCBIs GenBank nucleotide database, the closest hit using the Calmodulin sequence is *Ca. pollizi* (GenBank GQ2674362; Identities = 475/476 (99 %), Gaps = 0/476 (0 %)), followed by *Ca. pauciramosa* and *Ca. zuluensis*. Closest hits using Histone H3 sequence is *Ca. pauciramosa* (GenBank HQ285798) and *Ca. polizzi* (GenBank JN607260), both with 100 % similarities. Closest hits using ITS sequence yielded highest similarity to *Ca. spathulata* (GenBank AF307350; Identities = 512/512 (100 %), Gaps = 0/512 (0 %)) and *Ca. pauciramosa* (GenBank GQ280608; Identities = 517/520 (99 %), Gaps = 1/520 (0 %)). Closest hits using TEF-1α sequence yielded 100 % similarity to *Ca. polizzi* (GenBank JN607260), *Ca. pauciramosa* (GenBank FJ972499) and *Ca. macroconidialis* (GenBank GQ267313).

One of 322 equally most parsimonious trees obtained from a heuristic search of the combined Calmodulin, Histone H3, ITS and TEF-1α regions (TL = 1 569, CI = 0.854, RI = 0.908, RC = 0.775, HI = 0.146). Bootstrap support values (%) from 1 000 replications followed by branch lengths are indicated above the branches. The tree is rooted to *Ca. colombiana*. Isolates collected from *Eucalyptus* in Mozambique in this study are in **bold**.



Colour illustrations. Symptomatic seedlings of clones of *E. grandis* × *E. camaldulensis* at Ifloma nursery in Manica Province, Mozambique. Culture morphology showing abundant white aerial mycelium with sparse sporulation; conidiogenous apparatus with a stipe extension; 1-septate macroconidia. Scale bars = 10 µm.

Sílvia N.D. Maússe-Sitoe, Shuaifei Chen, Michael J. Wingfield & Jolanda Roux, Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria, Private Bag X20, Pretoria, 0028, South Africa;
e-mail: silvia.maussesitoe@fabi.up.ac.za, shuaifei.chen@fabi.up.ac.za, mike.wingfield@up.ac.za & jolanda.roux@fabi.up.ac.za