

Stachybotrys aloeticola



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***Stachybotriaceae* L. Lombard & Crous, fam. nov.**

MycoBank MB808764.

Saprobic or pathogenic on plant material, commonly isolated from soil. *Ascomata* solitary, scattered or aggregated in small groups, superficial or totally immersed in host tissue, bright to dark yellow to orange, not changing colour in KOH, globose to subglobose to obpyriform, ostiolate. *Ascomatal wall* thick, consisting of 1–2 layers, sometimes covered with intertwined hyphae. *Asci* clavate to cylindrical, containing 4–8 biseriate ascospores, apex rounded to nearly truncate with a refractive apical ring. *Ascospores* ellipsoidal to fusiform to broadly reniform, 1–3-septate sometimes constricted at septum, hyaline. *Conidiophores* simple, sporodochial or synnematos. Simple conidiophore macronematous, mononematous, solitary or in groups, erect, slightly curved, simple or irregularly branched, 1–4-septate, smooth, hyaline, bearing 2–8, slightly curved or erect, clavate to broadly reniform phialides with conspicuous collarettes. Sporodochial and synnematos conidiophores scattered, amphigenous, pulvinate, gelatinous, hyaline to dark green, with or without marginal hyphae, with or without hyaline setae, containing irregularly penicillate, bi- or terverticillately branched conidiogenous apparatus. *Conidiogenous cells* cylindrical, proliferating percurrently. *Conidia* 0–1-septate, elongated, cylindrical, subcylindrical, fusiform or ellipsoid, hyaline becoming darker with age, smooth, striate or roughened, aggregated in a slimy, dark green to black mass.

Type genus. *Stachybotrys* Corda, Icon. Fung. 1: 21. 1837. MycoBank MB10052.

Type species. *Stachybotrys chartarum* (Ehrenb.) S. Hughes, Canad. J. Bot. 36: 812. 1958. MycoBank MB306362.

***Stachybotrys aloeticola* L. Lombard & Crous, sp. nov.**

Etymology. Named after the host genus from which it was isolated, *Aloe*.

Conidiophores simple, macronematous, mononematous, single or in groups, mostly unbranched, erect, straight to slightly flexuous, 1–3-septate, smooth, hyaline, 72–143 × 3–5 µm, bearing a whorl of 3–5 phialides. *Phialides* terminal, clavate to broadly reniform, hyaline becoming pale brown, 8–11 × 4–6 µm, smooth with conspicuous collarettes. *Conidia* acrogenous, aggregated in slimy masses, aseptate, allantoid to fusiform, 7–9 × 3–5 µm (av. 8 × 4 µm), containing 1–2 oil droplets.

Culture characteristics — Colonies reached 30 mm diam after 7 d at 22 °C. On PDA superficial, partly immersed, white becoming granulate and dark in the centre as conidia are formed.

Typus. SOUTH AFRICA, Eastern Cape Province, Grahamstown, on *Aloe* sp. (*Aloaceae*), 26 July 2011, P.W. Crous (holotype CBS H-21727, culture ex-type CBS 137940 = CPC 19705; ITS sequence GenBank KJ817888, LSU sequence GenBank KJ817890, BTUB = KJ817886, MycoBank MB808881); CPC 19706 = CBS 137941, ITS = KJ817889, LSU = KJ817891, BTUB = KJ817887.

Notes — *Stachybotrys* species are saprobes, commonly isolated from soil and decaying plant material, and are also associated with health risks in buildings with long-term water damage

Colour illustrations. *Aloe* sp., South Africa; conidiophores and conidia in culture. Scale bars = 10 µm.

Other genera included

Myrothecium Tode, Fung. Meckl. Sel. 1: 25. 1790 — MycoBank MB9049

Type species. *Myrothecium inundatum* Tode, Fung. Meckl. Sel. 1: 25. 1790. MycoBank MB234957.

Peethamabra Subram. & Bhat, Rev. Mycol. 42: 52. 1978. — MycoBank MB3786

Type species. *Peethambara sundara* Subram. & Bhat, Rev. Mycol. 42: 49. 1978. MycoBank MB319247.

Notes — The family *Stachybotriaceae* is established to accommodate the genera *Myrothecium*, *Peethambara* and *Stachybotrys*. These three genera were earlier classified as *incertae sedis* in the order *Hypocreales*, although phylogenetic studies have shown that these genera form a monophyletic lineage distinct from other families in the *Hypocreales* (Castlebury et al. 2004, Summerbell et al. 2011). Castlebury et al. (2004) refrained from introducing this new family, arguing that more sexual morphs in these genera were required to justify a formal description. Since the abolishment of dual nomenclature for fungi (Hawksworth et al. 2011), the asexual and sexual morphs are regarded as equal, with priority given to the older name (Rossman et al. 2013), and therefore we introduce *Stachybotriaceae* as a new family in the order *Hypocreales*.

(Castlebury et al. 2004). *Stachybotrys aloeticola* is commonly isolated from dying leaves of *Aloe* spp. in South Africa (unpubl. data) and is thus far only known to occur on this host genus. Morphologically, it is similar to *S. nephrospora* (Hansford 1943) but can be distinguished from this species by having longer conidiophores (up to 143 µm) compared to *S. nephrospora* (up to 130 µm). Furthermore, *S. aloeticola* produces smaller conidia (7–9 × 3–5 µm (av. 8 × 4 µm)) than reported for *S. nephrospora* (8–11 × 4.5–6 µm; Hansford 1943).

Based on megablast search of NCBI's GenBank nucleotide database, the closest hits using the ITS (GenBank KJ817888) sequence are *S. nephrospora* (GenBank AF081476; Identities = 633/642 (99 %), Gaps = 4/642 (0 %)) and *S. microspora* (GenBank AF081475; Identities = 591/646 (91 %), Gaps = 10/646 (1 %)). Closest hits using LSU (GenBank KJ817890) sequences are *Didymostilbe matsushimae* (GenBank AY283545; Identities = 810/836 (97 %), Gaps = 6/836 (0 %)), *Melanopsamma pomiformis* (GenBank AY489709; Identities = 810/836 (97 %), Gaps = 7/836 (0 %)) and *Stachybotrys echinata* (GenBank AY489736; Identities = 806/834 (97 %), Gaps = 5/834 (0 %)). Closest hit using β-tubulin (GenBank KJ817886) sequences are *Cylindrocladiella infestans* (GenBank JN098762; Identities = 319/367 (87 %), Gaps = 14/367 (3 %)) and *Cylindrocladiella variabilis* (GenBank JN098722; Identities = 319/367 (87 %), Gaps = 16/367 (3 %)).