

*Helminthosphaeria hispidissima*



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***Helminthosphaeria hispidissima* J. Fourn. & A.N. Mill., sp. nov.**

*Etymology.* Name refers to the very bristly hairs covering the ascomata.

*Classification* — *Helminthosphaeriaceae*, *Sordariales*, *Sordariomycetes*.

*Ascomata* ovoid, papillate, with an obtusely rounded to slightly conical and cruciform apex, 340–380 µm diam, 420–550 µm high, numerous, densely clustered, superficial, black, barely emerging from a dense, shiny dark brown subiculum with tufts surrounding the ascomata and projecting above, occasionally covering the ascomata entirely; subiculum hyphae dark reddish brown, slightly sinuous, branched, remotely septate, 5–8 µm wide, thick-walled with a lumen, walls 1.5–2.5 µm thick, smooth-walled, with rounded tips. *Ascomatal wall of textura angularis* in surface view, in longitudinal section 2-layered, 40–55 µm thick, inner layer *textura prismatica*, 5–10 µm thick, composed of 2–5 layers of elongate, flattened, thin-walled, brown cells, outer layer *textura angularis*, 35–45 µm thick, composed of several layers of thick-walled, brown cells, cells 4.5–13.5 µm in their greatest dimension, walls 1.8–2 µm thick, with Munk's pores; tubercles composed of clusters of subglobose cells, 6–9 µm diam, walls up to 3.5 µm thick, bearing long hyphal hairs indistinguishable from the subiculum hyphae. *Ascomatal apex* composed of a palisade of thick-walled, rectangular cells converging around the ostiole and terminating as small, opaque cells on the surface, with periphyses arising from an inner hyaline basal layer. *Paraphyses* filiform, 1.5–2.5 µm wide, embedded in a dense mucilaginous matrix, hyaline, sparse, remotely septate, unbranched, persistent. *Asci* broadly fusiform, 78–90 × 13.5–18 µm, stipitate, stipe 34–56 µm, unitunicate, thin-walled, apex truncate; ring narrow, 0.6–0.8 × 3–3.5 µm, shallow, refractive, I-, faintly stained by blue and blue-black inks; with 8 bi- to triseriate ascospores. *Ascospores* cylindrical, allantoid, with obtuse ends, (17.5–)18.5–23(–24) × (4.5–)5–6(–6.5) µm (av. 21.2 × 5.7), yellowish and aseptate in the ascus before maturity, eventually light to yellow brown and 1-septate, septum medial, thick, blackish brown, not constricted; with large and small guttules, smooth-walled, without sheath or appendages.

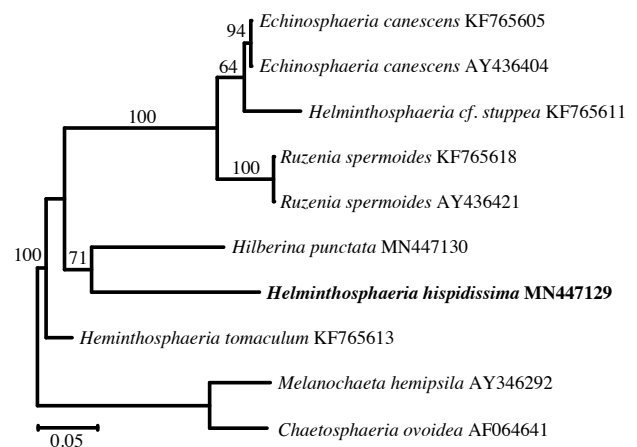
*Habitat* — Decayed wood in a tropical forest, possibly fungicolous on *Hypoxylon investiens*.

*Distribution* — Known only from Martinique, French West Indies.

*Typus.* FRENCH WEST INDIES, Martinique, Prêcheur, Anse Couleuvre, coastal mesophilic forest, on dead blackened wood, associated with old stromata of *Hypoxylon investiens*, N14.84 W61.22, 9 June 2014, J. Fournier & C. Lechat, MJF 14113 (holotype ILLS00121145 (ILLS), ITS-LSU sequence GenBank MN447129, MycoBank MB832757).

*Additional material examined.* FRENCH WEST INDIES, Martinique, Prêcheur, Anse Couleuvre, coastal mesophilic forest, on dead blackened wood, associated with old stromata of *Hypoxylon investiens*, N14.84 W61.22, 16 Aug. 2013, J. Fournier & C. Lechat, MJF 13262 = ILLS00121146.

*Notes* — *Helminthosphaeria hispidissima* at first appears to resemble *Lasiosphaeria hirsuta* since they share tuberculate, hairy ascomata (Miller & Huhndorf 2004). However, their ascospores differ greatly being allantoid and lacking appendages in *H. hispidissima* and vermiform with awl-like appendages in *L. hirsuta*. Six other species in the *Helminthosphaeriaceae* possess allantoid to cylindrical and curved ascospores ranging in shape and septation from short, fat and aseptate in *H. stuppea* and *H. tomaculum* to longer, narrower and up to 1-septate in *Echinospaeria canescens* and *Ruzenia spermoides* to long, narrow and 1–5-septate in *E. heterostoma* and *Hilberina punctata* (Miller et al. 2014). *Helminthosphaeria hispidissima* is easily distinguished by its brown, 1-septate ascospores, whereas the other six species possess hyaline to pale brown (or brown, but much longer ascospores in *E. heterostoma*), aseptate or multi-septate (rarely 1-septate) ascospores.



Maximum likelihood tree generated using PhyML in SeaView v. 4.5.4 (Gouy et al. 2010). *Helminthosphaeria hispidissima* is in **bold**. Numbers above branches refer to bootstrap support values. GenBank accession numbers for the LSU region are given after taxon names.

*Colour illustrations.* Background photo of typical tropical undergrowth in Anse Couleuvre (Martinique). Ascomata; ascus; young and older ascospores; ascoma; longitudinal sections through ascomal wall; ascal apices. Scale bars = 1 mm (ascomata), 100 µm (ascoma), 10 µm (young ascus, older ascospores, ascomal walls), 5 µm (ascal apices). Photos: Jacques Fournier.