

Gamsia kooimaniorum



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***Gamsia kooimaniorum* Sandoval-Denis, sp. nov.**

Etymology. Named for Noud and Robin Kooiman, collectors of the sample from which this fungus was isolated. This species was discovered during a Citizen Science project in the Netherlands, 'Wereldfaam, een schimmel met je eigen naam', describing novel fungal species isolated from Dutch soils.

Classification — *Microasaceae*, *Microascales*, *Sordariomycetes*.

Hyphae hyaline, septate, 1.5–2.5 µm wide, smooth- and thin-walled. **Conidiophores** of two types: i) mostly undifferentiated, unbranched or rarely laterally branched once, produced abundantly, borne laterally and singly on the aerial hyphae, 0–1(–2)-septate, (12–)15–24.5(–28) × (1.5–)2–4(–7) µm, hyaline to subhyaline, smooth- and thin-walled, producing conidia on terminal polyblastic conidiogenous cells. **Conidiogenous cells** polyblastic, subcylindrical to cylindrical with a swollen apical part, (1.5–)4.5–10.5(–14) × (1.5–)2–3.5(–5.5) µm, hyaline to somewhat darkening at the apex, smooth- and thin-walled, with 1–8 apical conidiogenous loci. **Conidia** aseptate, ovoid to broadly ellipsoidal, with a rounded to pointed apex, flat at the base, pale to dark brown, (5.5–)7–9(–10.5) × (4–)5–6.5(–7) µm smooth- and thick-walled, often with a conspicuous longitudinal germ slit, borne solitary in lateral succession and forming large apical clusters; ii) unbranched, rarely branched one or two times from a short, cylindrical and swollen basal cell, mostly grouped in dense sporodochia, rarely borne solitary on the aerial hyphae, 0–1-septate, 17–22(–23) × (3–)4–4.5(–5.5) µm, hyaline to subhyaline, smooth- and thin-walled, producing conidia on terminal annellidic conidiogenous cells. **Conidiogenous cells** annellides, subcylindrical to cylindrical, tapering gently toward the apex, (7.5–)9.5–16(–18) × (3–)4–4.5 µm, hyaline, smooth- and thin-walled, annellations inconspicuous. **Conidia** catenate, aseptate, oval, ellipsoidal to bullet-shaped, apex rounded, truncate at the base, 7.5–8.5(–10) × 4.5–5.5 µm, hyaline, smooth- and thick-walled.

Culture characteristics — Colonies on MEA reaching 30–40 mm diam in 7 d at 25 °C. Colony surface iron-grey to greenish black with white to pale olivaceous grey patches and a thin white external margin, umbonate to crateriform, radially folded, velvety to dusty; margins regular entire to undulate. Reverse olivaceous grey to iron-grey with greenish black centre, without diffusible pigments. On PDA reaching 17–20 mm diam in 7 d at 25 °C. Colony surface ochreous, umber to olivaceous, flat, felty to velvety, with white to vinaceous buff floccose patches toward the periphery; aerial mycelium abundant and short; colony margins irregular, undulate to lobate. Reverse pale vinaceous buff, without diffusible pigments. On OA reaching 21–26 mm diam in 7 d. Colony colour greenish black to leaden black and velvety at the centre becoming white and membranous toward the margins, flat to slightly raised, radiated at the margins; aerial mycelium abundant, short and dense; margins regular, entire to somewhat undulate. Reverse iron-grey without diffusible pigments.

Colour illustrations. Background, Noud and Robin Kooiman at the collection site; conidiophores bearing annellidic conidiogenous cells and chains of conidia; conidiophores bearing polyblastic conidiogenous cells and conidia in apical clusters. Scale bars = 10 µm.

Typus. THE NETHERLANDS, Vleuten, from garden soil, Feb. 2017, *N. Kooiman* & *R. Kooiman* (holotype CBS H-23222, culture ex-type CBS 143185; ITS, LSU and *tub2* sequences GenBank LT904719, LT904720 and LT904701, MycoBank MB822628).

Notes — *Gamsia* includes three species: *G. aggregata*, *G. columbina* (Sandoval-Denis et al. 2016) and *G. kooimaniorum*, described here, characterised by mostly simple, unbranched conidiophores which distinguishes *Gamsia* from their closest relative *Wardomyces* (Morelet 1969, Ellis 1976). Using rDNA and *tub2* sequences *G. kooimaniorum* is phylogenetically more closely related to *G. aggregata*. However, both species exhibit marked differences, particularly in their polyblastic conidiogenous cells, which are steadily hyaline with the multiple conidiogenous loci distributed along the apex and lateral portions of the cell in *G. aggregata*, whereas those in *G. kooimaniorum* tend to darken in the apex, while the conidiogenous loci are clustered in the apical part of the cell; producing also solitary conidia of different shapes (broadly ellipsoidal to obovoidal and rounded in *G. aggregata* vs ovoid to broadly ellipsoidal and sometimes pointed in *G. kooimaniorum*). Morphologically, however, *G. kooimaniorum* most closely resembles *G. columbina*, from which it can be differentiated by its somewhat larger solitary conidia ((5.5–)7–9(–10.5) × (4–)5–6.5(–7) µm vs 6–13 × 3.5–6.5 µm in *G. columbina*) and its aseptate annellidic conidia (vs consistently 1-septate annelloconidia in *G. columbina*).