

*Rhizodermea veluwensis*



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## *Rhizodermea* Verkley & Zijlstra, *gen. nov.*

Mycelium radices vivas plantarum incolens, stromata e textura angulari-globulosa composita et chlamydosporas terminales vel intercalares, globosas ad ellipsoideas, 0–1-septatas producens in cultura axenica. Species ad *Dermateaceae*, *Helotiales*, *Leotiomycetes*, *Ascomycota* pertinentes.

*Etymology.* *Rhizo*, referring to the root of the host that the fungus colonises; *dermea* to the teleomorph genus *Dermea* to which the genus is related.

*Mycelium* colonising living roots of plants, producing stromata composed of *textura angularis-globosa*, and terminal or intercalary, globose to ellipsoid, 0–1-septate chlamydospores in axenic culture. Species belonging in *Dermateaceae*, *Helotiales*, *Leotiomycetes*, *Ascomycota*.

*Type species.* *Rhizodermea veluwensis*.  
Mycobank MB518022.

## *Rhizodermea veluwensis* Verkley & Zijlstra, *sp. nov.*

Mycelium ex hyphis hyalinis septatis, 1.5–2.5(–3) µm latis, deinde 5.5–8.5 µm latis compositum. Stromata in coloniis aetate 2–4 menses formata, 3 mm lata et 1 mm alta, e textura angulari-globulosa composita. Chlamydosporae terminales globosae ad limoniformes, continuae, raro in medio uniseptatae, 18–25 µm diam, vel cylindricae ad ellipsoideae et plerumque terminales, raro intercalares.

*Etymology.* Name refers to the Veluwe, an area rich in forest and heathland in the centre of the Netherlands where the type locality and other known localities of this species are situated.

*Mycelium* at first mainly composed of hyaline, septate, 1.5–2.5(–3) µm wide hyphae, later also 5.5–8.5 µm wide, first hyaline, then pale yellowish brown and septate. After 2–3 weeks hyphal masses appear at the colony surface consisting of entangled hyphal chains of isodiametric cells inflated to 10 µm diam, with a few large oil droplets. On the outer surface of hyphal walls pustules of non-translucent, dark orange-brown, amorphous material with a rough surface are deposited. Stromata developing in colonies after 2–4 months on oatmeal agar<sup>1</sup> (OA) and cornmeal agar<sup>1</sup> (CMA) becoming up to 3 mm wide and 1 mm high, with a dark brick to almost black surface covered with a dense mat of straw, sulphur-yellow to citrine hyphae, inside mainly composed of hyaline *textura angularis-globosa*. From these stromata clear, cinnamon droplets are released, but they remain sterile. *Chlamydospores* terminal and globose to limoniform, continuous, rarely medianly 1-septate, with a hyaline to yellowish wall up to 2 µm thick often ornamented with pale yellow warts, 18–25 µm diam; in addition, more elongated, cylindrical to ellipsoid, mostly terminal, rarely intercalary chlamydospores are also formed. Where chlamydospores are numerous the colony surface has a powdery aspect.

*Culture characteristics* — At 18 °C under nuv in a daily rhythm of 12 h nuv and 12 h darkness (colours according to Rayner<sup>2</sup>). – Colonies on malt extract agar<sup>1</sup> (MEA) 45–48(–68) mm in 24 d, with a crenulate, colourless to vinaceous-buff margin; colony surface radially creased or plane, mostly covered by

a dense, felty layer of primrose to pale honey aerial mycelium; immersed mycelium fawn to brown-vinaceous; reverse sepia to brown-vinaceous or cinnamon. Colonies on OA reaching 70–85 mm diam in 24 d, with an irregularly ruffled, colourless, glabrous margin; colony surface largely covered with a diffuse to dense, low, woolly to cottony, buff aerial mycelium with pale ochreous to pale apricot tinges developing in a submarginal zone; immersed mycelium mostly buff, but in sectors and near the margin often also fawn to olivaceous-buff to citrine-green; reverse concolorous. After 2–3 months the surface of the colony becomes predominantly cinnamon or rosy-buff, sometimes with patches of straw or citrine. Colonies on CMA reaching 75 mm diam in 24 d, with an irregularly ruffled, colourless, glabrous margin; colony surface largely covered with a diffuse to dense, low, woolly to cottony, buff aerial mycelium showing throughout a more or less distinct pale ochreous to pale apricot haze; immersed mycelium a mixture of olivaceous and amber tinges, towards the margin more bright yellowish, reverse predominantly amber, locally and in the centre hazel.

*Typus.* THE NETHERLANDS, National Park De Hoge Veluwe, Deelense Veld, isolated from surface-sterilised root of *Erica tetralix*, Nov. 2000, *J. Zijlstra*, CBS 110605 (JA 222; GenBank HM002555), holotype (metabolically inactive preservations), MycoBank MB518023.

Other strains from surface-sterilised roots by *J. Zijlstra*, Nov. 2000. THE NETHERLANDS, Dwingelderveld, *E. tetralix*, CBS 110608 (JA 329; GenBank HM002556), CBS 110610 (JA 340; GenBank HM002557); same loc., *Empetrum nigrum*, Nov. 2000, CBS 110611 (JA 373; HM002558); Hoog Buurlo, Hoog Buurlosche Heide, *Vaccinium myrtillus*, CBS 110618 (JA476; GenBank HM002563); same loc., *V. vitis-idaea*, CBS 110652 (JA 386; GenBank HM002559); same loc., in oakwood, *Vaccinium myrtillus*, CBS 110613 (JA 444; GenBank HM002560), CBS 110614 (JA 446; GenBank HM002561), CBS 110615 (JA 447; GenBank HM002562). – GERMANY, Niedersachsen, Landkreis Wolfenbüttel, Elm near Evessen, isolated from root of *Larix decidua*, May 1994, *V. Kehr & B. Schulz* (A.K. Römmert 4056), CBS 111537 (GenBank HM008380).

*Notes* — See MycoBank MB518023.

*References.* <sup>1</sup>Crous PW, Verkley GJM, Groenewald JZ, Samson RA (eds). 2010. CBS Laboratory Manual 1: Fungal Biodiversity. CBS, Utrecht. <sup>2</sup>Rayner RW. 1970. A mycological colour chart. Commonwealth Mycological Institute, Kew.

*Colour illustrations.* Three weeks old cultures on MEA, OA (middle), and CMA (bottom); One-septate chlamydospore; smooth-walled, 0-septate chlamydospores; warted chlamydospores; hypha transformed to a chain of pigmented, isodiametric inflated cells; amorphous material deposited on the outer surface of hyphae; inner tissue of sterile stroma on OA. Scale bars = 10 µm.

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