

Entoloma cyaneofilacinum



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Entoloma cyaneolilacinum Noordel., J.B. Jordal, Brandrud & Dima, *sp. nov.*

Etymology. The epithet refers to the colours of the basidiocarps, from 'cyaneus', Greek, – blue, and 'lilacinus' – lilac.

Classification — *Entolomataceae*, *Agaricales*, *Agaricomycetes*.

Basidiomata medium-sized, collybioid. *Pileus* 10–25 mm, conico-convex or campanulate-conical, slightly expanding, finally plano-convex, with deflexed then straight margin, not distinctly hygrophanous, deep blue then paler lilac-blue with a slightly darker spot at centre, deeply translucently striate, at first finely radially fibrillose to faintly tomentose, breaking up in small squamules in central part, radially fibrillose to almost smooth towards margin. *Lamellae* moderately distant, deeply emarginate, ventricose, white or with a faint bluish tinge, contrasting with blue pileus and stipe, with entire, concolorous edge. *Stipe* 30–50 × 2–3 mm, cylindrical, deep blue then lilac-blue, concolorous with margin of pileus or paler, glabrous, smooth, polished, with some white mycelium at base, once observed with yellow (discoloured?) mycelium. *Smell* and *taste* not indicated. *Spores* (7.5–)8.0–10.0(–11.0) × 6.0–8.5 µm, av. 8.5–9.5 × 6.5–8.0 µm, Q = 1.2–1.6, Q_{av} = 1.4, heterodiametrical, 5–7-angled in side-view. *Basidia* 30–50 × 8–12 µm, 4-spored, clampless. *Lamella* edge fertile. *Cystidia* absent. *Hymenophoral trama* regular, made up of inflated elements, up to 20 µm wide. *Pileipellis* a transition between a cutis and a trichoderm, made up of clavate terminal elements, 22–75 × 10–25 µm with brownish intracellular pigment. *Brilliant granules* present, but not abundant. *Clamp connections* absent.

Habitat & Distribution — In semi-natural grasslands and in deciduous woodlands with *Betula*, *Corylus*, *Fraxinus* and *Quercus*. Verified with sequenced collections from Norway and The Netherlands, also reported from Germany.

Typus. NORWAY, Møre og Romsdal, Stranda, Liabygda, Ansok, N62.3137° E7.0236° (± 7 m), 310 m a.s.l., seminatural grassland (meadow), on the ground, 2 Sept. 2009, J.B. Jordal, JBJ09-E02 (holotype O-F-252009, ITS and LSU sequences GenBank MW934582 and MW934252, MycoBank MB 839224).

Colour illustrations. Norway, Møre og Romsdal, Stranda, Liabygda, Ansok, seminatural grassland, type locality. Spores, cheilocystidia, pileipellis, stipitipellis (all from holotype); Basidiomata *in situ* (holotype). Scale bars = 1 cm (basidiomata), 10 µm (spores and microstructures).

Additional materials examined. NORWAY, Møre og Romsdal, Sunndal, Jordalsgrenda, Kalvhusvøttu, 60 m a.s.l., seminatural grassland (meadow), 14 Sept. 2004, J.B. Jordal, M.E. Noordeloos & G. Gulden (O-F-177981, ITS sequence GenBank MW934584); *ibid.*, 20 Sept. 2019, JBJ19-049 (O-F-256792, ITS sequence GenBank MW934586); Rogaland, Stavanger, Rennesøy, Askje, V-side, c. 60 m a.s.l., in semi-natural pasture, 3 Oct. 2006, J.I. Johnsen & J.B. Jordal (O-F-361225, ITS sequence GenBank MW934587); Vindafjord, Alnåsen west, 129 m a.s.l., west-faced deciduous forest, 5 Sept. 2008, J.B. Jordal, JBJ08-E02 (O-F-252007, ITS sequence GenBank MW934585). — THE NETHERLANDS, Prov. Utrecht, Soesterberg, former airfield, 30 Sept. 2019, M.E. Noordeloos, P.J. Keizer & J. v. Dongen (L0607898, ITS sequence GenBank MW934583).

Notes — The delicate lilac-blue colour of the basidiocarps as well as the small spores and fertile lamella edge are distinctive for *E. cyaneolilacinum*. It was treated as *E. lepiotosme* in Noordeloos (2004). However, there are considerable discrepancies with the protologue, describing a species with a blackish brown, virgate pileus, reminiscent of a species of *Inocybe*, a fibrillose stipe surface, a strong smell like that of *Lepiota cristata*, and larger spores. The lectotype of *Rhodophyllus lepiotosmus* failed for DNA sequencing. Considering the conflict with the protologue and the lack of molecular data, it was decided to describe the present taxon here as a species in its own right. Morphologically, *E. cyaneolilacinum* resembles *E. violaceo-viride*, which has a sterile, brown pigmented lamella edge and often some greenish tinges in the basidiocarp, and has a distant phylogenetic position. *Entoloma cruentatum*, also phylogenetically distant (see the phylogenetic tree for *E. ammophilum* in Supplementary material FP1240), has similar spores and fertile lamella edge, but often turns orange-yellow when bruised at the base of the stipe.

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