

Cuphophyllus flavipesoides

Fungal Planet 1237 – 13 July 2021

Cuphophyllus flavipesoides J.B. Jordal & E. Larss., *sp. nov.*

Etymology. Refers to its morphological similarity of *Cuphophyllus flavipes*.

Classification — *Hygrophoraceae*, *Agaricales*, *Agaricomycetes*.

Basidiomata clitocybioid. *Pileus* 15–40(–50) mm diam, as young conical to plano-convex with a broad and blunt umbo and incurved margin, later becoming more plane, with age sometimes becoming slightly depressed and with somewhat undulating and lobed margin. Lubricous to subviscid, sometimes translucently striate at margin up to 2/3 towards the centre, hygrophanous, as young grey violet or ash grey to greyish brown to brown, with a violaceous tint, dark at centre, paler towards the margin and with age discolouring to pale grey to grey violet. *Lamellae* short to deeply decurrent, arcuate, distant to subdistant, lamellae that reach the stipe = 30–40(–50), interspaced with lamellulae, a few furcate, intervening, first whitish to greyish, when greyish with paler margin, with age pale greyish. *Stipe* 30–65 × 3–7 mm, cylindrical and usually thickest at the apex or upper half, tapering and often bending towards the base, dry, matt, fibrillose lengthwise, pale, whitish grey, at the base normally pale yellow, up to 1/3 of the stipe. *Context* concolorous. *Smell* weak, indistinct, *taste* mild.

Micro-morphological characters measured from dried material dehydrated in 3 % KOH and ammoniacal Congo red solution. *Spores* (5.5–)7.0–7.3(–8.8) × (4.2–)5.2–5.4(–6.1) μm, n = 117, av. 7.2 × 5.3 μm, Q = 1.34–1.39, subglobose to ellipsoid, often lacrimoid, with a distinct and often oblique apiculus, hyaline, white in deposit, non-amyloid. *Basidia* 35–54 × 7.5–9 μm, 2–4-spored observed, sterigmata 5–6.5 μm. *Lamellar trama* irregular interwoven, made up of cylindrical hyphae, 5.5–7 μm wide and 30–60 μm long, some branched and inflated. *Pileipellis* an ixocutis, 50–110 μm thick with radially interwoven hyphae, 3–6 μm wide, 30–60 μm long, incrustated with finely granular pigments. Hyphae in subpellis interwoven, 7–10 μm wide, 40–55 μm long, with inflated end cells up to 20 μm wide. *Clamp connections* frequent in all tissues.

Ecology & Distribution — Associated with nutrient poor semi-natural grasslands, among mosses, herbs and grasses, with the soil ranging from rather acid to (rarely) moderately calcareous. Confirmed distribution so far from Norway, Sweden and Denmark.

Typus. NORWAY, Vestland, Alver, Lygra (Utluro), 25 m a.s.l., in semi-natural grassland pasture, 3 Sept. 2019, J.B. Jordal, JBJ19-013 (holotype OF-258322, isotype GB-0207610, ITS-LSU sequence GenBank MW714630, MycoBank MB 839261).

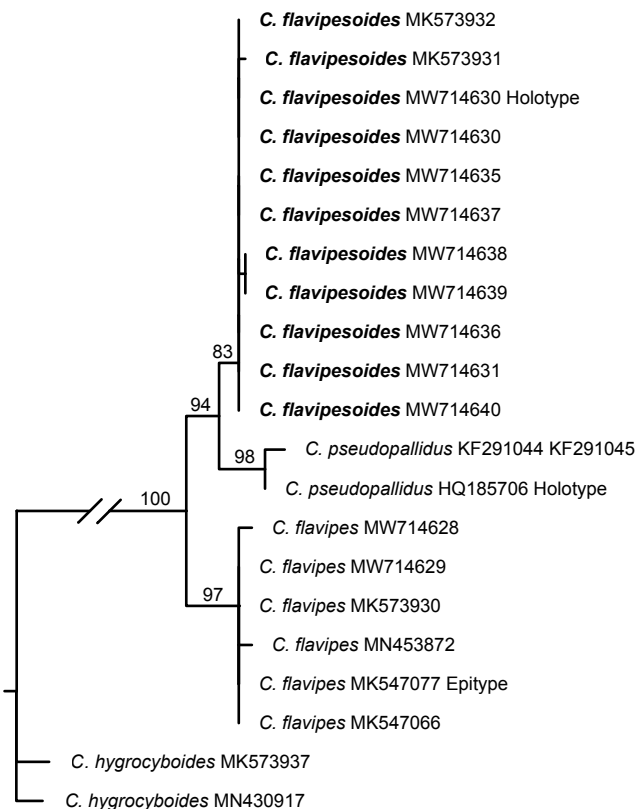
Notes — *Cuphophyllus flavipesoides* belongs in a complex of closely related and morphologically similar species. In macro- and micromorphology it is very similar to *C. flavipes*. On average we find that the spores in *C. flavipes* are more subglobose with the average measurements 7.1 × 5.6 μm, and Q = 1.22–1.27, compared to the average in *C. flavipesoides*, 7.2 × 5.3 μm, Q = 1.34–1.39. In Voitk et al. (2020) an average value for the spores of the selected epitype of *C. flavipes* was measured to

Colour illustrations. *Cuphophyllus flavipesoides* habitat in semi-natural grassland, from the type locality in Vestland, Alver, Lygra, Norway. *In situ* basidiomata of the holotype; hymenium and basidiospores of the holotype (OF-258322). Scale bars = 10 μm for spores, 20 μm for hymenium.

Q = 1.2. The two species differ in ITS1 sequence data by four substitutions and four single bp insertion/deletion events, in the ITS2 by six substitutions and three single bp insertion/deletion events. The sequences in the *C. flavipesoides* clade are homogenous, suggesting an independent evolutionary lineage.

Based on the sequence data available, the two species differ somewhat in geographic distribution where *C. flavipes* seems to be more common in southern Europe and confirmed from Italy, Austria, Germany, UK, Denmark, SW Norway and S Sweden, whereas *C. flavipesoides* has a more northern distribution range and is confirmed from Norway, Sweden and Denmark and is most common in the northern/boreal areas. However, the two species overlap and co-occur in some areas in southern parts of Scandinavia.

Cuphophyllus pseudopallidus is also closely related and resembles *C. flavipesoides*, but it differs in morphology by having a pale beige brown (ecru-drab) to pale greyish pileus colour and ivory yellow lamellae, a stipe that is glabrous, striate and white-shining, and somewhat smaller spores (Hesler & Smith 1963, Voitk et al. 2020). So far only known from North America and Japan.



Phylogram obtained using PAUP v. 4.0a (Swofford 2003) based on ITS and LSU data showing the position of *C. flavipesoides* to *C. flavipes* and *C. pseudopallidus*. Bootstrap support values are indicated on branches. *Cuphophyllus flavipesoides* is marked in **bold** and the holotype is indicated.

Supplementary material**FP1237** Additional materials examined.