

# Checklist of the species of the genus *Tricholomopsis* (*Agaricales*, *Agaricomycetes*) in Estonia

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**Abstract:** Four species of the genus *Tricholomopsis* (*Agaricales*, *Agaricomycetes*) have been recorded in Estonia. A checklist of these species with ecological, phenological and distribution data as well as taxonomic comments is presented.

**Kokkuvõte:** Perekonna *Tricholomopsis* (*Agaricales*, *Agaricomycetes*) liigid Eestis

Esitatakse kriitiline nimestik koos ökoloogiliste, fenoloogiliste ja levikuandmetega ning taksonoomiliste märkustega puiduheiniku (*Tricholomopsis*) perekonna (*Agaricales*, *Agaricomycetes*) nelja liigi kohta Eestis.

## INTRODUCTION

The present checklist contains four *Tricholomopsis* species recorded in Estonia. Two of them (*T. decora*, *T. rutilans*) correspond to the species conceptions established by Vesterholt (2008) and Ludwig (2001), *T. osiliensis* to those by Vauras (2009) and *T. flammans* to Holek and Kolařík (2011). The checklist principally follows the nomenclature of taxons in Index Fungorum (1 April 2011). The species studied have been proved by relevant exsiccates in the fungariums of the Institute of Agricultural and Environmental Sciences of the Estonian University of Life Sciences (TAAM) and of the Natural History Museum of the University of Tartu (TU).

The checklist provides data on the species in Estonia, including taxonomic comments with short descriptions of the species. The following data are presented on each species: (1) the Latin name with a reference to the initial source; (2) most important synonyms; (3) reference to most important and representative pictures (iconography) in mycological literature used in identifying the Estonian species; (4) data on the ecology, phenology and distribution; (5) references to specimens available in Estonian fungariums, using internationally accepted abbreviations of the fungal collections TAAM and TU; (6) taxonomic comments.

In the characterization of fungal habitats, the classification by Paal (1997) is used. The frequency of the occurrence of taxa is estimated according to a 6-point scale: very rare – 1–2 localities, rare – 3–5 localities, rather rare – 6–10

localities, rather frequent – 11–20 localities, frequent – 21–50 localities, very frequent – 51 and more localities.

Abbreviations of iconography are following:

Bon – Bon, 1995  
BK – Breitenbach & Kränzlin, 1991  
CD – Courtecuisse & Duhem, 2000  
CettoEnz – Cetto, 1987  
D – Dähncke, 2001–2004  
Hagara – Hagara, 1987  
HK – Holek & Kolařík, 2011  
KL – Kalamees & Liiv, 2005, 2008, 2010  
KM – Konrad & Maublanc, 1927  
Korh – Korhonen, 1986  
Kriegl – Krieglsteiner, 2001  
March – Marchand, 1986  
Métrod – Métrod, 1977  
Nyl – Nylén, 2001  
Phil – Phillips, 1981  
RH – Ryman & Holmåsén, 1984  
Riva88 – Riva, 1988  
SNS – Salo, Niemelä & Salo, 2006  
Vauras – Vauras, 2009

## LIST OF SPECIES

**Tricholomopsis** Singer, Schweiz. Z. Pilzk. 17: 56. 1939

TRICHOLOMOPSIS DECORA (Fr.: Fr.) Singer, Schweiz. Z. Pilzk. 17: 56. 1939

*Agaricus decorus* Fr.: Fr., Syst. mycol. (Lundae) 1: 108. 1821; *Tricholoma decorum* (Fr.: Fr.) Quél.,

Compt. Rend. Assoc. Franç. Avancem. Sci. 11: 389. 1883 [1882]; *Tricholomopsis ornata* (Fr.) Singer, Mycologia 35 (2): 153. 1943.

Icon.: BK 444; CD 417, 419, as *T. ornata*; D p.223; Hagara 154; KL 178; KM 263; March 828; Phil p.44; RH p.281; Riva88 p.61.

Ecol. & Distr.: In mesotrophic boreal, meso-eutrophic boreo-nemoral hilllock, eutrophic boreo-nemoral and paludifying spruce and spruce-mixed forests, in all forest sites; saprotrophic on trunks and stumps of conifers, especially in spruce wood; July to October, frequent.

Voucher specimens studied: TAAM 070767, 084284, 171577, 182747.

Comments: The fruitbodies of *T. decora* are small to medium-sized, thin-fleshed, entirely yellow-coloured; cap minutely with olivaceous yellow, olivaceous brown to blackish fibrillose squamules on a yellow background; stem smooth or sometimes with olivaceous brown scales or fibres; spores broadly ellipsoid to subglobose, highly varying in size; cheilocystidia clavate, pleurocystidia absent; spores (5-)6-8(-10) × (3.5-)4-5.5(-6) μm, Q=(1.1-)1.3-1.6(-1.9), Qav=1.44 (n=90); hyphae with clamps.

The close species *T. ornata* is synonymized as *T. decora* by Ludwig (2001) and regarded as a form or variety of *T. decora* by Breitenbach & Kränzlin (1991) and Marchand (1986).

TRICHOLOMOPSIS FLAMMULA Métrod ex Holec, J. National Mus. (Prague), Nat. Hist. Ser. 178 (3): 8. 2009

*T. flammula* Métrod, Revue Mycol., Paris 11 (2-3): 77. 1946 (invalid name); *T. flammula* (Métrod ex E. Ludw.) P.-A. Moreau & Courtec., Docums Mycol. 34 (nos 135-136): 51. 2008 (invalid name); *T. rutilans* f. *flammula* (Métrod) ex E. Ludw., Pilzkompendium 1: 679. 2001 (invalid name).

Icon.: Métrod p.77; HK p.96; Bon 3B; CettoEnz p.212.

Ecol. & Distr.: In spruce forests, saprotrophic on wood remnants; August, very rare; only one locality in Tartu Co., Palupera, eutrophic boreo-nemoral spruce forest, 29 Aug 2006, Bellis Kullman.

Voucher specimens studied: TAAM 177544.

Comments: The fruitbodies of *T. flammula* are very small and thin-fleshed; cap about 1 cm in diameter, densely reddish purple brown to purple rust-brown tomentose-squamulose on yellow background; gills bright yellow; stem pale

yellow, smooth or minutely tomentose to fibrillose, without purple-red scales; flesh dull yellow; spores ellipsoid to oblong, narrow, (5-)6-7(-8) × 3.5-4(-4.5) μm, Q=(1.2-)1.5-2(-2.1), Qav=1.66, (n=30); cheilocystidia clavate; pleurocystidia prominent, abundant, cylindrical- to lageniform-fusiform or narrowly clavate; hyphae with clamps.

Some authors have synonymized this species as *T. rutilans* (cf Boekhout & Noordeloos, 1999) or regarded this as a dwarfish form of *T. rutilans* (cf Ludwig, 2001) or of *T. decora* (cf Breitenbach & Kränzlin, 1991). Métrod (1977), Moser (1983), Cetto (1987), Bon (1995), Courtecuisse & Duhem (2000), Horak (2005) and Holec (2009) have considered *T. flammans* an independent species. According to Holec and Kolařík (2011) *T. flammula* molecularly forms a distinct clade sister to a well-supported clade of *T. rutilans*, whereas *T. decora* forms cluster standing apart from both above-mentioned species.

TRICHOLOMOPSIS OSILIENSIS Vauras, Folia Cryptog. Estonica 45: 87. 2009

Icon.: Vauras p.88.

Ecol. & Distr.: In eutrophic alvar spruce and spruce-mixed forests, saprotrophic on fallen, mossy trunks of *Picea abies*, September, very rare; only two localities in west Estonian islands: Saare Co., Saaremaa Island, Salme Comm., Kaugatoma-Lõu Landscape Reserve, 18 Sep 2008, Jukka Vauras; Lääne Co., Vormsi Island, Vormsi Comm., Saxby, 19 Sep 2010, Irja Saar. Voucher specimens studied: TAAM 194970 (isotype: holotype J. Vauras 265400F in TUR-A); TU 101571, TAAM 198198 (duplum of TU 101571). Comments: The fruitbodies of *T. osiliensis* are small to medium-sized; cap pale brownish yellow, in centre slightly tomentose, outwards almost smooth to fibrillose, at margin minutely squamulose; gills yellow; stem pale yellow, more brownish below, slightly fibrillose; flesh yellow; spores broadly ellipsoid to pruniform, (5.5-)6-7 × 4.5-5 μm, Q=1.2-1.4(-1.5), Qav=1.27 (n=20); cheilocystidia ovoid to clavate, pleurocystidia cylindrical to clavate, very scarce; hyphae with clamps.

*T. osiliensis* differs macroscopically clearly from *T. decora* and *T. rutilans* and it is thus a very good independent species. Testing the ITS sequences showed good molecular differences from *T. decora* (Vauras, 2009).

TRICHOLOMOPSIS RUTILANS (Schaeff.: Fr.) Singer,  
Schweiz. Z. Pilzk. 17: 56. 1939

*Agaricus rutilans* Schaeff., *Fung. Bavar. Palat.* 4:  
51. 1774; *A. rutilans* Schaeff.: Fr., *Syst. mycol.*  
1: 41. 1821; *Tricholoma rutilans* (Schaeff.: Fr.)  
P. Kumm., *Führ. Pilzk. (Zwickau)*: 133. 1871  
*Icon.*: BK 445; CD 420; *CettoEnz* p.210; Hagara  
p.153; KL 177; KM 262I; Korh p.155; Kriegl  
p.579; March 827; Nyl p.230; Phil p.43; RH  
p.281; SNS p.149.

Ecol. & Distr: In coniferous and mixed, espe-  
cially pine forests, clearings, wooded meadows,  
in all forest sites; saprotrophic on conifer, espe-  
cially pine stumps, often caespitose; July to  
November, very frequent.

Voucher specimens studied: TAAM 051009,  
070171, 070254, 142586.

Comments: Fruitbodies of *T. rutilans* are me-  
dium-sized to large and thick-fleshed; cap and  
stem densely purple-red tomentose-squamulose  
on a yellowish background; gills and flesh yel-  
low; spores broadly ellipsoid to subglobose, 5–7  
× 4–6 µm, Q=1.1–1.5(–1.6), Qav=1.3 (n=35);  
cheilocystidia prominent, clavate, pleurocystidia  
absent; hyphae with clamps.

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