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Research note/Araştırma notu

A new and rare record for Turkish *Cantharellus*

Ilgaz AKATA [*1], Meriç KUMBAŞLI [2]

[1] Ankara University, Faculty of Science, Department of Biology, 06100 Ankara, Turkey
[2] Düzce University, Faculty of Foresty, Depatment of Wildlife Ecology and Management, Düzce, Turkey

Abstract

In the present study, *Cantharellus melanoxeros* Desm. (*Cantharellaceae*) is reported for the first time from Turkey. A short description, the photographs of macro and the micro morphologies of the species are provided and discussed briefly.

Key words: new record, *Cantharellus melanoxeros*, Turkey

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Türkiye *Cantharellus*' ları için yeni ve nadir bir kayıt

Özet

Bu çalışmada *Cantharellus melanoxeros* Desm. (*Cantharellaceae*) Türkiye'den ilk kez rapor edilmiştir. Türün kısa deskripsiyonu, makro ve mikro morfolojilerine ilişkin fotoğrafları verilmiş ve kısaca tartşılmıştır.

Anahtar kelimeler: yeni kayıt, *Cantharellus melanoxeros*, Türkiye

1. Introduction

Cantharellus is a genus of the family *Cantharellaceae* within the order *Cantharellales*. The genus includes 65 species that are widely distributed especially in temperate regions, and some of them are common in Europe and North America (Kirk et al., 2008; Pegler et al., 1997). Its members are among the most widely consumed ectomycorrhizal mushrooms that are collected and marketed on a commercial scale (Arora and Dunham, 2008).

The genus produce brightly coloured, whitish, yellow, orange, brownish, dark grey or red, funnel shaped basidiome with an incurved margin; decurrent, smooth, wrinkled, veined or folded hymenophore; fleshy or hollow, meso to pleuropodal stipe indistinctly deliminated from hymenium; monomitic hyphal system; long, slenderly clavate, 2-8 spored basidia with clamp connections; subglobose to ellipsoid, smooth hyaline and non amyloid, spores (Hansen and Knudsen, 1997; Pegler et al., 1997).

According to literature on Turkish macromycota (Solak et al., 2007; Sesli and Denchev, 2008; Kaya et al., 2012; 2013; Atila and Kaya, 2013; Akata et al., 2014), *Cantharellus melanoxeros* Desm. has not yet been recorded from Turkey. The aim of this study is to make a contribution to the Turkish *Cantharellus* by adding a new record.

2. Materials and methods

Fungal samples were collected from Belgrad Forest (İstanbul) between 2012 and 2013. Necessary ecological and morphological features of the specimens were recorded and they were photographed in their natural habitats. Then the samples were taken to the fungarium for detailed investigations. Some spesific reagents (distillate water, 5% KOH, congo red, 5% KOH etc.) were used for microscopic studies. Microphotographs of basidia and spores were taken under a light microscope (Leica DM 1000). Identification of the samples were conducted according to their macroscopic and microscopic features and performed with the help of literature (Breitenbach and Kränzlin, 1986; Hansen and Knudsen,

* *Corresponding author* / Haberleşmeden sorumlu yazar: Tel.: +903122126720/1066; Fax.: +903122126720; E-mail: fungus@hotmail.com.tr
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1997; Monthoux and Röllin, 1978; Neville and Alpago-Novello, 1998; 2000; Pegler et al., 1997). The identified samples are kept at Ankara University Herbarium (ANK).

3. Results

A short description, ecology and distribution, locality, collection date, photographs of fruit bodies and microphotographs of basidia and spores are provided.

Cantharellales Gäum.
Cantharallaceae J. Schröt
Cantharellus Adans. ex Fr.
Cantharellus melanoxeros Desm. (1830).
Syn.: *Craterellus melanoxeros* (Desm.) Pérez-De-Greg. (2000).

Pileus 40-60 mm across, fleshy, turbinate at first, expanding to depressed, later becoming funnel-shaped **Surface** slightly tomentose, saffron yellow sometimes lilaceous tint, blacking towards to margin. **Margin** thin, undulate and incurved (Figure 1a,b). **Hymenophore** subdecurrent, with irregularly branching and anastomosing ribs, furcate towards to margin, rose pinkish, liliac to violet (Figure 1c). **Stipe** 45-50× 10-15 mm, subcylindrical to conical, solid, yellowish to pinkish liliac. **Flesh** white to whitish cream, pale violet in the stipe. **Taste** mild. **Odor** fruity. **Basidia** 80-90 × 9-10 µm, slenderly clavate, 4 spored and with basal clamp (Figure 1d). **Spores** 8-11 × 6-7 µm, ovoid to slightly ellipsoid, hyaline, thin walled and smooth, with granular contents (Figure 1e).

Edibility: Edible, occasionally collected and sold on local markets in Europe but commercial value low. Unknown in Turkey (Dahlberg and Croneborg, 2006).

Ecology: Rare, summer to fall, on rich, calcareous soil, mycorrhizal with beech (*Fagus* L.) and oak (*Ouercus* L.) trees (Hansen and Knudsen, 1997; Pegler et al., 1997).

Material examined: TURKEY—İstanbul, Belgrad Forest, on soil, under oriental beech (*Fagus* orientalis Lipsky), 41° 11' N -28° 57' E, 143 m, 29.11.2012, Akata & Kumbaşlı 002; Belgrad Forest, on soil, in oriental beech (*Fagus* orientalis Lipsky) forest, 41° 11' N -28° 57' E, 120 m, 29.11.2012; N 41° 12' - E 28° 57', 120 m, 23.10.2013, Akata 5913.

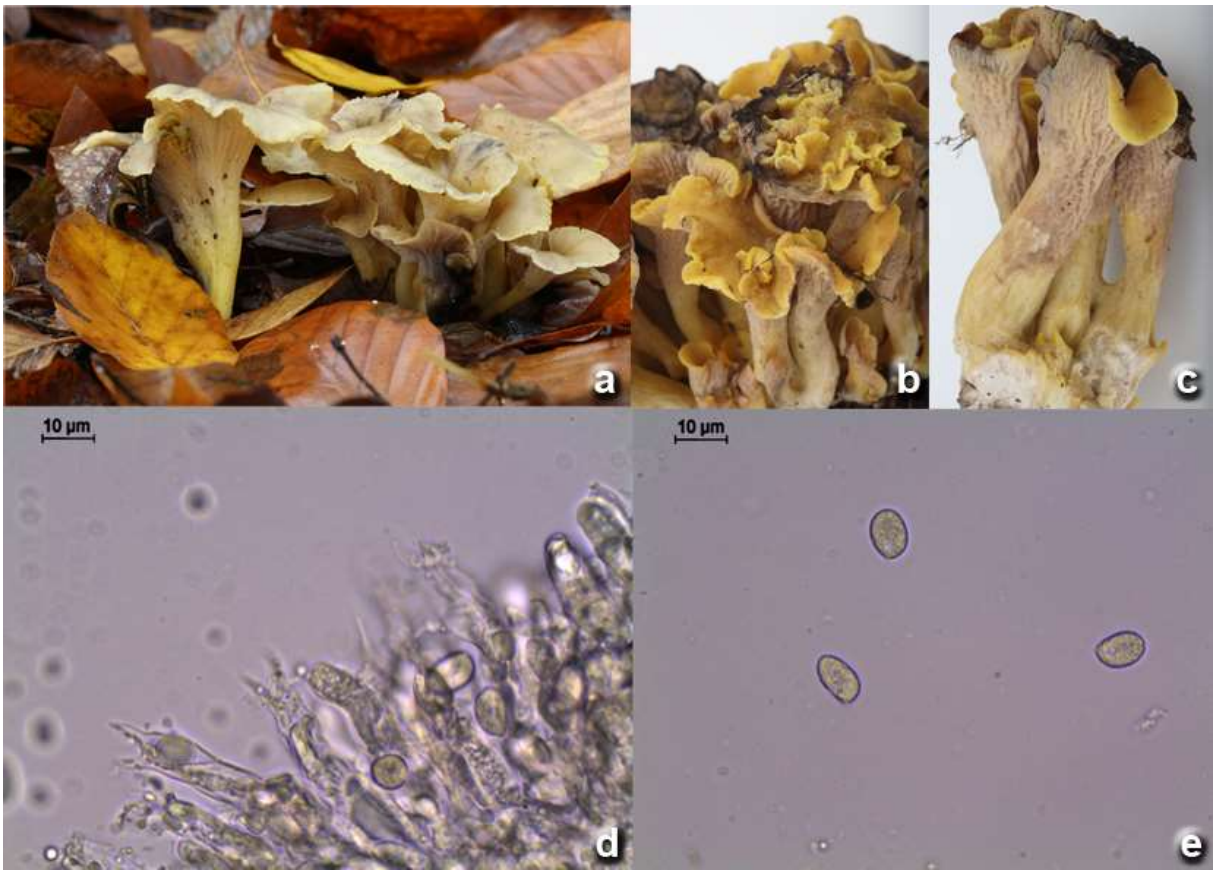

Figure1. *Cantharellus melanoxeros*: a,b,c- Fruit bodies, d- basidia, e- spores

4. Conclusions

Cantharellus melanoxeros is characterized by small to medium sized fruit body blacking when bruised, with a saffron yellow pileus, yellowish to pinkish liliac stipe and rose pinkish to violet hymenophore (Breitenbach and Kränzlin, 1986; Pegler et al., 1997).

C. melanoxeros may be confused with *C. amethysteus* (Quél.) Sacc. but the latter species is easily distinguished from the former by its yellow to ochre yellow hymenophore (Breitenbach and Kränzlin, 1986; Pegler et al., 1997). *C. melanoxeros* macroscopically resembles *C. ianthinoxanthus* (Maire) Kühner due to their similar colour and morphology. Although both species have saffron yellow pileus sometimes with lilaceous tint and violet to liliac hymenophore, the latter species has smaller pileus (20-40 mm) with a thickened margin and pale coloured stipe (Monthoux and Röllin, 1978; Breitenbach and Kränzlin, 1986; Hansen and Knudsen, 1997; Pegler et al., 1997; Neville and Alpago-Novello, 1998).

This is a rare and European endemic ectomycorrhizal species, usually associated with beech (*Fagus* L.) and oak (*Ouercus* L.) trees. It is reported from 17 countries, 398 localities throughout Europe. This fungus is red listed in 9 countries and critically endangered in the United Kindom. Finally, it was submitted for inclusion in the Bern Convention basis of its European status in order to notice the need for conservation of the species and its habitats (Dahlberg and Croneborg, 2006).

According to the recent checklist on Turkish macromycota (Solak et al., 2007; Sesli and Denchev, 2008) 7 species of *Cantharellus* (*Cantharellus amethysteus* (Quél.) Sacc., *C. cibarius* Fr., *C .cinereus* (Pers.) Fr., *C. ferruginascens* P.D. Orton, *C. friesii* Quél., *C. lutescens* (Fr.) Fr., *C. subalbidus* A.H. Sm. & Morse) have previously been recorded from Turkey.

With the present study, *Cantharellus melanoxeros* was reported for the first time from Turkey and it will be eighth member of Turkish *Cantharellus*.

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