

Macrofungi of Hatila Valley National Park (Artvin, Turkey)

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Abstract: The taxonomic study of 382 samples collected from Hatila Valley National Park (Artvin, Turkey) revealed 126 taxa of macromycetes, belonging to 34 families and 60 genera. Two of them, *Arrhenia acerosa* (Fr.) Kühn. (*Tricholomataceae*) and *Entoloma politum* (Pers.: Fr.) Donk. (*Entolomataceae*), are new records for Turkey.

Key words: Biodiversity, macrofungi, Hatila Valley, Artvin

Hatila Vadisi Milli Parkı makrofungusları (Artvin-Türkiye)

Özet: Hatila Vadisi Ulusal Parkından (Artvin-Türkiye) toplanan 382 örnek üzerinde gerçekleştirilen taksonomik çalışma sonucunda 34 familya ve 60 cinse ait 126 makrofungus taksonu belirlenmiştir. Bunlardan iki tanesi, *Arrhenia acerosa* (Fr.) Kühn. (*Tricholomataceae*) ve *Entoloma politum* (Pers.: Fr.) Donk. (*Entolomataceae*), Türkiye için yeni kayıttır.

Anahtar sözcükler: Biyoçeşitlilik, makrofungus, Hatila Vadisi, Artvin

Introduction

Knowledge on the macrofungi of Turkey has been derived over a study period of about 90 years and the accumulated data were presented as checklists by Solak et al. (2007), and Sesli and Denchev (2008). New contributions were also made to these data by Solak et al. (2009), Kaya (2009a, 2009b, 2009c), and Aktaş et al. (2009). Some studies were also conducted on the macrofungal diversity of nearby areas of Hatila Valley National Park by Demirel and Uzun (1996), Demirel (1998, 1999), and Demirel et al. (2004). According to

the available records, there is no study on the macromycota of the research area.

Hatila Valley (Figure) is situated in A8 square according to Davis' grid square system (Davis, 1965) within the province of Artvin, Turkey. The valley, which occupies an area of 16,988 ha, was declared a national park in 1994 due to the geomorphological constructions and biodiversity. According to climatologic data of the Artvin meteorological station, the climate of the area is Mediterranean (Akman, 1999). The annual average

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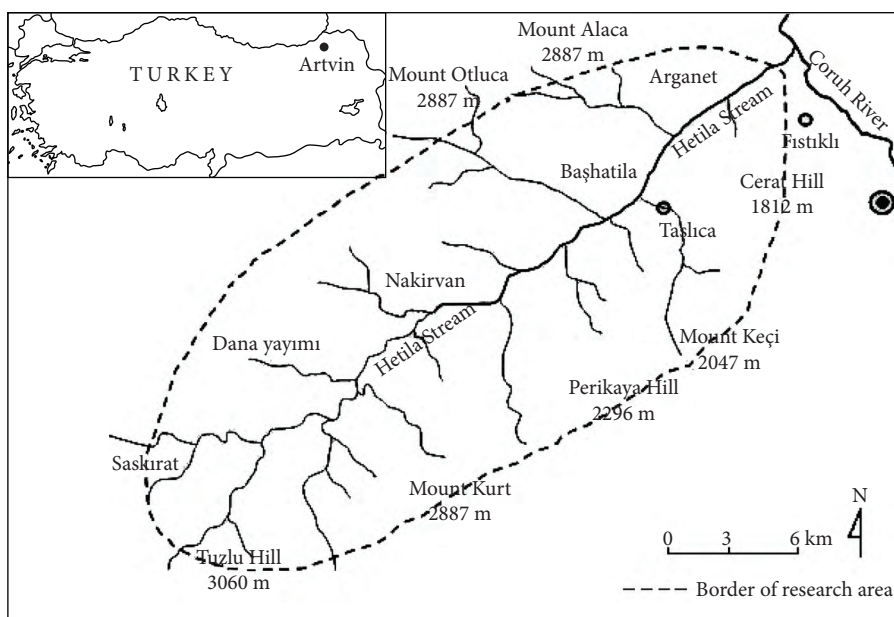


Figure. Map of the research area.

temperature is 11.92 °C and the rainfall is 626.2 mm. The valley falls in the colchic province of Euro-Siberian floristic area within the Holarctic floral kingdom. Although pseudomacchie, subalpine, alpine, and stream vegetations are also clearly visible in the area, forest vegetation is the most common formation. Some of the plant taxa related to macrofungal growth are *Abies nordmanniana* (Stev.) Spach. subsp. *nordmanniana*, *Acer cappadocicum* Gled., *A. campestre* L., *A. divergens* Pax., *A. platanoides* L., *Alnus glutinosa* (L.) Gaertn., *Betula pendula* Roth., *Carpinus betulus* L., *C. orientalis* Mill., *Castanea sativa* Mill., *Daphne mezereum* L., *Fagus orientalis* Lipsky, *Juglans regia* L., *Juniperus oxycedrus* L., *Picea orientalis* (L.) Link, *Pinus pinea* L., *P. sylvestris* L., *Platanus orientalis* L., *Populus tremula* L., *Quercus hartwissiana* Stev., *Q. petraea* (Mattuschka) Liebl. subsp. *iberica* (Stev.) Krassilin, *Q. pontica* C.Koch, *Rhododendron caucasicum* Pall., *R. luteum* Sweet., *R. ponticum* L., *R. smirnovii* Trautv., *R. ungeronii* Trautv., *Rhus coriaria* L., *Rosa elymatica*, *R. montana* Chaix., *Taxus baccata* L., and *Tilia rubra* DC. (Eminağaoğlu & Anşin, 2003).

The aim of the study was to determine the macrofungal diversity of Hatila Valley National Park and to make a contribution to the macromycota of Turkey.

Materials and methods

Samples were collected from 27 localities (Table 1) in Hatila Valley National Park in 2006 and 2007. During field studies, colour photographs of the macrofungi specimens were taken in their natural habitats and relevant notes on their morphological and ecological features were taken. Then they were brought to the laboratory. Spore prints were obtained and necessary measurement data, related to macroscopic and microscopic structures, were obtained. Identification were performed with the help of Phillips (1981), Moser (1983), Orton (1986), Watling and Gregory (1987), Buczacki (1989), Bresinsky and Besl (1990), Ellis and Ellis (1990), Breitenbach and Kränzlin (1984-2000), and Jordan (1995). The specimens are kept in the Mycology Laboratory in the University of Yüzüncü Yıl, Faculty of Science and Arts, Biology Department, Van, Turkey.

Table 1. Macrofungi collecting localities.

No.	Localities	Coordinates	Altitudes (m)
1	Başhatıla	41°10'N - 41°41'E	850-1100
2	Başhatıla	41°11'N - 41°40'E	1450-1495
3	Başhatıla, Çilegara	41°10'N - 41°40'E	1340-1360
4	Cerattepe	41°10'N - 41°46'E	1700-1720
5	Cerattepe	41°09'N - 41°45'E	1600-1650
6	Melo high plateau	41°05'N - 41°38'E	2150-2180
7	İtliyet	41°09'N - 41°44'E	1100-1170
8	Kuapt	41°10'N - 41°45'E	1370-1480
9	Kuapt, Çala	41°10'N - 41°45'E	1450-1480
10	Nakerav, Çayırılık high plateau	41°10'N - 41°46'E	2000-2025
11	Nakerav, Danayayımı high plateau	41°06'N - 41°35'E	2050-2080
12	Nakerav, Danayayımı, Deliklitaş	41°06'N - 41°36'E	1900-1950
13	Nakerav, Fındıklidere	41°07'N - 41°37'E	1550-1580
14	Nakerav, Fındıklidere	41°09'N - 41°38'E	1490-1510
15	Nakerav, Fırınlar	41°07'N - 41°38'E	1150-1180
16	Nakerav, Sucudibi	41°06'N - 41°39'E	1538-1740
17	Nakerav, Yol üstü	41°07'N - 41°37'E	1240-1260
18	Salletepe	41°08'N - 41°45'E	1600-1630
19	Salletepe	41°08'N - 41°44'E	1620-1650
20	Salletepe, Büyükdere road	41°07'N - 41°44'E	1600-1620
21	Salletepe, Mount Genya	41°07'N - 41°46'E	1950-1970
22	Sitimzara	41°08'N - 41°42'E	1550-1630
23	Sitimzara, Hanzat	41°07'N - 41°42'E	1850-1900
24	Taşlıca, Arganet	41°10'N - 41°43'E	580-600
25	Taşlıca, Arganet	41°10'N - 41°42'E	610-640
26	Taşlıca, Meydan	41°10'N - 41°44'E	800-820
27	Taşlıca, Şartev	41°07'N - 41°41'E	660-720

Results

The determined taxa are listed in alphabetical order. For each taxon, habitat, locality, collection date, and accession numbers (D: Demirel; E: Erdem) are given. The systematics of the taxa is given in accordance with Kirk et al. (2008) and Index Fungorum (www.speciesfungorum.org; accessed 25 August 2009). New records are indicated by an asterisk (*).

Ascomycetes

Pezizales

Morchellaceae Rchb.

Morchella esculenta var. *umbrina* (Boud.) S. Imai: Among herb, in forest clearing, locality 26, 13.05.2006, D. & E. 005.

Morchella rigida (Krombh.) Boud.: In mixed forest, locality 17, 15.05.2007, D. & E. 227.

Morchella vulgaris (Pers.) Boud.: In coniferous forest, locality 2, 22.05.2007, *D. & E.* 110; in mixed forest, locality 17, 15.05.2007, *E.* 228.

Basidiomycetes

Agaricales

Agaricaceae Chevall.

Agaricus augustus Fr.: In coniferous forest, locality 19, 17.08.2006, *D. & E.* 080; locality 26, 27.08.2006, *D. & E.* 062.

Agaricus campestris var. *campestris* L.: In meadow, locality 21, 20.06.2006, *D. & E.* 140.

Agaricus moelleri Wasser: Forest edge, locality 25, 24.09.2006, *D. & E.* 108.

Agaricus urinascens var. *urinascens* (Jul.Schäff. & F.H.Møller) Singer: In meadow, locality 26, 16.06.2006, *D. & E.* 017; locality 14, 27.06.2006, *D. & E.* 081.

Coprinus comatus (O.F.Müll.) Pers.: In meadow, locality 6, 18.06.2006, *D. & E.* 053.

Lepiota cristata (Bolton) P.Kumm.: Among herb, locality 27, 28.07.2006, *D. & E.* 037.

Lepiota ignivolvata Bousset & Joss. ex Joss: In coniferous forest, locality 19, 20.07.2006, *D. & E.* 010.

Lepiota magnispora Murrill: In mixed forest, locality 5, 03.09.2007, *D. & E.* 161.

Leucoagaricus leucothites (Vittad.) Wasser: In coniferous forest, locality 19, 07.10.2007, *D. & E.* 202.

Leucoagaricus serenus (Fr.) Bon & Boiffard: In mixed forest, locality 5, 24.08.2006, *D. & E.* 069.

Lycoperdon perlatum Pers.: In coniferous forest, locality 4, 30.06.2006, *D. & E.* 118; locality 27, 24.09.2006, *D. & E.* 071; locality 2, 11.08.2007, *D. & E.* 236; in mixed forest, locality 3, 03.09.2007, *D. & E.* 160.

Lycoperdon pyriforme Schaeff.: On conifer stump, locality 2, 07.08.2006, *D. & E.* 096.

Lycoperdon umbrinum Pers.: Among grass, in forest clearing, locality 20, 20.07.2006, *D. & E.* 008.

Lycoperdon utrifforme Bull.: In coniferous forest, locality 19, 15.07.2006, *D. & E.* 135.

Macrolepiota excoriata (Schaeff.) Wasser: Among

grass in mixed forest, locality 5, 18.07.2006, *D. & E.* 065; locality 20, 04.10.2006, *D. & E.* 066.

Macrolepiota konradi (Huijsm. ex P.D.Orton) Mos.: In mixed forest, locality 20, 24.08.2006, *D. & E.* 039; locality 24, 24.08.2006, *D. & E.* 068.

Macrolepiota mastoidea (Fr.) Singer: In coniferous forest, locality 19, 20.07.2007, *D. & E.* 010; in mixed forest, locality 25, 03.09.2007, *D. & E.* 158.

Macrolepiota procera var. *procera* (Scop.) Singer: In coniferous forest, locality 15, 18.09.2006, *D. & E.* 076; locality 4, 20.09.2007, *D. & E.* 077.

Amanitaceae R. Heim ex Pouzar

Amanita caesarea (Scop.) Pers.: In coniferous forest, locality 4, 20.09.2006, *D. & E.* 052,

Amanita gemmata (Fr.) Bertill.: In coniferous forest, locality 2, 16.09.2006, *D. & E.* 095; in mixed forest, locality 5, 25.09.2007, *D. & E.* 216.

Amanita muscaria var. *muscaria* (L.) Lam.: In coniferous forest, locality 19, 18.09.2006, *D. & E.* 046; locality 4, 18.09.2006, *D. & E.* 060; locality 2, 16.09.2001, *D. & E.* 093.

Amanita pantherina (DC.) Krombh.: In coniferous forest, locality 18, 17.08.2006, *D. & E.* 119.

Amanita phalloides (Vaill. ex Fr.) Link: In mixed forest, locality 20, 18.07.2006, *D. & E.* 124.

Amanita rubescens Pers. var. *rubescens*: In mixed forest, locality 5, 18.7.2006, *D. & E.* 064; locality 20, 12.08.2006, *D. & E.* 094.

Amanita solitaria (Bull.) Fr.: In mixed forest, locality 24, 02.09.2007, *D. & E.* 147.

Amanita vaginata (Bull.) Lam.: In coniferous forest, locality 4, 18.07.2006, *D. & E.* 117; among grass in forest clearing, locality 20, 18.07.2006, *D. & E.* 123.

Amanita verna (Bull.) Lam.: In mixed forest, locality 24, 02.09.2007, *D. & E.* 150.

Cortinariaceae R. Heim ex Pouzar

Cortinarius camphoratus (Fr.) Fr.: In coniferous forest, locality 24, 02.09.2007, *D. & E.* 146.

Cortinarius scaurus (Fr.) Fr. var. *scaurus*: In coniferous forest, locality 4, 20.07.2006, *D. & E.* 115.

Cortinarius sodagnitus Rob. Henry: In mixed forest, locality 24, 16.09.2006, *D. & E.* 089.

Cortinarius uraceus Fr.: In coniferous forest, locality 4, 28.09.2006, D. & E. 126.

Entolomataceae Kotl. & Pouzar

(*) *Entoloma politum* (Pers.) Donk: In mixed forest, locality 2, 07.09.2006, D. & E. 045.

Hydnangiaceae Gäum. & C.W.Dodge

Laccaria bicolor (Maire) P.D.Orton: In mixed forest, locality 9, 14.09.2006, D. & E. 103; locality 18, 10.08.2007, D. & E. 232.

Hygrophoraceae Lotsy

Hygrocybe helobia (Arnolds) Bon: In coniferous forest, locality 19, 21.08.2006, D. & E. 032.

Hygrocybe persistens (Britzelm.) Singer var. *persistens*: Among grass in forest clearing, locality 26, 12.08.2006, D. & E. 022; in mixed forest, locality 2, 03.09.2007, D. & E. 157.

Hygrophorus speciosus Peck.: In mixed forest, locality 24, 10.09.2006, D. & E. 088.

Marasmiaceae Roze ex Kühner

Gymnopus peronatus (Bolton) Antonín, Halling & Noordel.: In deciduous forest, locality 17, 28.08.2006, D. & E. 131.

Marasmius oreades (Bolton) Fr.: In meadow, locality 10, 20.07.2006, D. & E. 007; locality 1, 18.08.2006, D. & E. 106.

Mycenaceae Roze

Mycena inclinata (Fr.) Quél.: On oak stump in mixed forest, locality 5, 27.08.2006, D. & E. 063.

Physalacriaceae Corner

Armillaria cepistipes Velen.: On conifer stump, locality 4, 14.07.2006, D. & E. 018; locality 25, 20.07.2006, D. & E. 085.

Armillaria mellea (Vahl) P.Kumm.: On conifer stump, locality 4, 14.07.2006, D. & E. 019; locality 27, 28.07.2006, D. & E. 038; locality 25, 20.07.2006, D. & E. 084; 02.09.2007, D. & E. 151; locality 20, 20.10.2007, D. & E. 188.

Flammulina velutipes var. *velutipes* (Curtis) Singer: On poplar stump, locality 20, 10.08.2007, D. & E. 221.

Oudemansiella melanotricha (Dörfelt) M.M.Moser: In mixed forest, locality 3, 16.09.2006, D. & E. 092.

Xerula radicata (Relhan) Dörfelt: In mixed forest, locality 20, 19.08.2006, D. & E. 137.

Pleurotaceae Kühner

Pleurotus nebrodensis (Inzengae) Quél.: On decaying *Laserpitium* sp. remains, locality 6, 16.06.2006, D. & E. 101.

Pluteaceae Kotl. & Pouzar

Pluteus cinereofuscus J.E.Lange: In coniferous forest, locality 18, 21.08.2006, D. & E. 030.

Pluteus salicinus (Pers.) P.Kumm.: On deciduous wood stump, locality 5, 20.07.2006, D. & E. 112.

Psathyrellaceae Vilgalys, Moncalvo & Redhead

Coprinellus micaceus (Bull.) Vilgalys, Hopple & Jacq. Johnson: On poplar stump, locality 22, 12.7.2006, D. & E. 133.

Schizophyllaceae Quél.

Schizophyllum commune Fr.: On conifer stump, locality 25, 02.09.2007, D. & E. 142,

Strophariaceae Singer & A.H. Sm.

Gymnopilus penetrans (Fr.) Murrill: On conifer stump, locality 5, 25.09.2007, D. & E. 215.

Gymnopilus picreus (Pers.) P.Karst.: On conifer stump, locality 4, 20.07.2006, D. & E. 114.

Hebeloma candidipes Bruchet: In mixed forest, locality 3, 07.09.2006, D. & E. 041.

Hypholoma fasciculare var. *fasciculare* (Huds.) P.Kumm.: In mixed forest, locality 25, 18.10.2006, D. & E. 056; locality 27, 03.11.2006, D. & E. 120.

Hypholoma sublateritium (Schaeff.) Quél.: In mixed forest, locality 25, 02.09.2007, D. & E. 149.

Stropharia caerulea Kreisel: In mixed forest, locality 25, 12.08.2006, D. & E. 025.

Tricholomataceae R.Heim

(*) *Arrhenia acerosa* (Fr.) Kühner: In mixed forest, locality 25, 02.09.2007, D. & E. 148.

Clitocybe costata Kühner & Romagn.: In coniferous forest, locality 4, 18.07.2006, D. & E. 034; locality 2, 11.08.2007, D. & E. 240.

Clitocybe gibba (Pers.) P.Kumm.: In coniferous forest, locality 2, 14.07.2006, D. & E. 002; locality 13, 28.7.2006, D. & E. 127.

Clitocybe ornamentalis Velen: In mixed forest, locality 3, 07.09.2006, *D.* & *E.* 042.

Fayodia gracilipes (Britzelm.) Bresinsky & Stangl: In mixed forest, locality 7, 20.07.2006, *D.* & *E.* 011; locality 5, 20.07.2006, *D.* & *E.* 111.

Gamundia striatula (Kühner) Raitheh.: In coniferous forest, locality 2, 14.07.2006, *D.* & *E.* 001.

Melanoleuca excissa (Fr.) Singera: Among grass in forest clearing, locality 14, 23.06.2006, *D.* & *E.* 035.

Melanoleuca humilis (Pers.) Pat.: In meadow, locality 7, 12.07.2006, *D.* & *E.* 012.

Melanoleuca subalpina (Britzelm.) Bresinsky & Stangl: Among grass in forest clearing, locality 19, 22.07.2006, *D.* & *E.* 122.

Tricholoma albobrunneum (Pers.) P.Kumm.: In coniferous forest, locality 2, 16.09.2006, *D.* & *E.* 132.

Tricholoma batschii Gulden: In coniferous forest, locality 4, 12.08.2006, *D.* & *E.* 023; locality 27, 24.09.2006, *D.* & *E.* 075.

Tricholoma caligatum (Viv.) Ricken: In coniferous forest, locality 25, 20.07.2006, *D.* & *E.* 086.

Tricholoma focale (Fr.) Ricken: In coniferous forest, locality 4, 20.07.2006, *D.* & *E.* 116.

Tricholoma fulvum (Bull.) Bigeard & H.Guill.: In mixed forest, locality 16, 23.06.2006, *D.* & *E.* 036.

Tricholoma sejunctum (Sowerby) Quél.: In coniferous forest, locality 2, 16.09.2006, *D.* & *E.* 091.

Tricholomopsis decora (Fr.) Singer: On conifer stump, locality 4, 12.08.2006, *D.* & *E.* 024; locality 25, 20.07.2006, *D.* & *E.* 082.

Boletales

Boletaceae Chevall.

Boletus edulis Bull.: In mixed forest, locality 5, 20.07.2006, *D.* & *E.* 136.

Boletus pinophilus Pilát & Dermek: In coniferous forest, locality 25, 02.09.2007, *D.* & *E.* 144; locality 15, 04.09.2007, *D.* & *E.* 170.

Boletus subtomentosus L.: In coniferous forest, locality 25, 02.09.2007, 02.09.2007, *D.* & *E.* 145.

Leccinum scabrum (Bull.) Gray: In mixed forest, locality 5, 03.09.2007, *D.* & *E.* 167.

Gomphidiaceae Maire ex Jülich

Chroogomphus rutilus (Schaeff.) O.K.Mill.: In coniferous forest, locality 4, 28.09.2006, *D.* & *E.* 125.

Gomphidium maculatus (Scop.) Fr.: In mixed forest, locality 24, 09.09.2006, *D.* & *E.* 006; locality 20, 12.09.2006, *D.* & *E.* 028; locality 24, 02.09.2007, *D.* & *E.* 153; locality 19, 20.10.2007, *D.* & *E.* 186.

Paxillaceae Lotsy

Paxillus involutus (Batsch) Fr.: In coniferous forest, locality 4, 21.08.2007, *D.* & *E.* 026; locality 25, 02.09.2007, *D.* & *E.* 143.

Sclerodermataceae Corda

Scleroderma citrinum Pers.: Among grass, in forest clearing, locality 14, 20.07.2006, *D.* & *E.* 105.

Suillaceae Besl & Bresinsky

Suillus luteus (L.) Roussel: In coniferous forest, locality 16, 20.07.2006, *D.* & *E.* 087; locality 4, 20.07.2006, *D.* & *E.* 113.

Tapinellaceae Locq.

Tapinella atrotomentosa (Batsch) Šutara: On conifer stump, locality 16, 28.07.2006, *D.* & *E.* 128.

Cantharellales

Cantharellaceae J. Schröt.

Cantharellus cibarius Fr.: In coniferous forest, locality 4, 18.07.2006, *D.* & *E.* 015; locality 19, 24.07.2006, *D.* & *E.* 097; locality 2, 11.08.2007, *D.* & *E.* 237.

Cantharellus ferruginascens P.D.Orton: In coniferous forest, locality 4, 18.07.2006, *D.* & *E.* 033.

Hydnaceae Chevall.

Hydnum repandum L.: In coniferous forest, locality 2, 25.08.2006, *D.* & *E.* 049; 11.08.2007, *D.* & *E.* 238; locality 19, 18.08.2006, *D.* & *E.* 054; 25.09.2007, *D.* & *E.* 207.

Dacrymycetales

Dacrymycetaceae J. Schröt.

Calocera viscosa (Pers.) Fr.: On conifer stump, locality 25, 02.09.2007, *D.* & *E.* 141.

Gomphales

Gomphaceae Donk

Gomphus clavatus (Pers.) Gray: In coniferous forest, locality 19, 10.08.2007, *D.* & *E.* 224.

Ramaria flavobrunnescens (G.F. Atk.) Corner: In coniferous forest, locality 2, 11.08.2007, *D. & E.* 243.

Ramaria fumigata (Peck) Corner: In mixed forest, locality 5, 20.09.2006, *D. & E.* 051.

Ramaria lutea (Vent.) Schild: In deciduous forest, locality 17, 24.09.2006, *D. & E.* 059.

Ramaria neoformosa R.H.Petersen: In coniferous forest, locality 19, 17.10.2007, *D. & E.* 197.

Ramaria obtusissima (Peck) Corner: In coniferous forest, locality 4, 18.07.2006, *D. & E.* 013; locality 13, 20.08.2006, *D. & E.* 061.

Polyporales

Fomitopsidaceae Jülich

Climacocystis borealis (Fr.) Kotl. & Pouzar: On conifer stump, locality 2, 16.09.2006, *D. & E.* 090; locality 25, 02.09.2007, *D. & E.* 155.

Fomitopsis pinicola (Sw.) P.Karst.: On conifer stump, locality 25, 18.10.2006, *D. & E.* 057; 25.09.2007, *D. & E.* 213; locality 19, 10.08.2007, *D. & E.* 220; locality 2, 11.08.2007, *D. & E.* 235.

Ganodermataceae Donk

Ganoderma applanatum (Pers.) Pat.: On willow stump, locality 24, 02.09.2007, *D. & E.* 154.

Ganoderma carnosum Pat.: On conifer stump, locality 19, 24.07.2006, *D. & E.* 098.

Ganoderma lucidum (Curtis) P.Karst.: On oak stump, locality 6, 24.07.2006, *D. & E.* 100.

Meruliaceae P. Karst.

Bjerkandera adusta (Willd.) P.Karst.: On deciduous wood stump, locality 20, 07.10.2007, *D. & E.* 203.

Polyporaceae Fr. ex Corda

Polyporus squamosus (Huds.) Fr.: On poplar stump, locality 27, 22.06.2006, *D. & E.* 047.

Trametes hirsuta (Wulfen) Lloyd: On oak stump, locality 24, 02.09.2007, *D. & E.* 156.

Trametes trogii Berk.: On poplar stump, locality 5, 24.08.2006, *D. & E.* 070; 03.09.2007, *D. & E.* 166.

Trametes versicolor (L.) Lloyd: On oak stump, locality 5, 03.09.2007, *D. & E.* 164.

Sparassidaceae Herter

Sparassis crispa (Wulfen) Fr.: In coniferous forest, locality 27, 24.09.2006, *D. & E.* 074.

Russulales

Hericiaceae Donk

Hericium coralloides (Scop.) Pers.: On conifer stump, locality 13, 06.08.2006, *D. & E.* 048.

Russulaceae Lotsy

Lactarius deliciosus (L.) Gray: In coniferous forest, locality 5, 21.08.2006, *D. & E.* 016; locality 19, 21.08.2006, *D. & E.* 029; 04.09.2007, *D. & E.* 169.

Lactarius piperatus (L.) Pers.: In mixed forest, locality 24, 04.09.2007, *D. & E.* 172; locality 20, 20.10.2007, *D. & E.* 187; 07.10.2007, *D. & E.* 200; locality 5, 25.09.2007, *D. & E.* 212.

Lactarius rufus (Scop.) Fr.: In coniferous forest, locality 27, 24.09.2006, *D. & E.* 072; In mixed forest, locality 24, 04.09.2007, *D. & E.* 176.

Lactarius vietus (Fr.) Fr.: In mixed forest, locality 3, 07.09.2006, *D. & E.* 044.

Lactarius zonarioides Kühner & Romagn.: In coniferous forest, locality 19, 21.08.2006, *D. & E.* 031; 20.10.2007, *D. & E.* 189.

Lactarius zonarius (Bull.) Fr.: In coniferous forest, locality 25, 04.09.2007, *D. & E.* 173.

Russula albonigra (Krombh.) Fr.: In mixed forest, locality 5, 25.09.2007, *D. & E.* 210.

Russula atropurpurea (Krombh.) Britzelm.: In mixed forest, locality 5, 04.09.2007, *D. & E.* 178.

Russula chloroides (Krombh.) Bres. var. *chloroides*: In coniferous forest, locality 4, 04.09.2007, *D. & E.* 174; locality 20, 17.10.2007, *D. & E.* 191; 20.10.2007, *D. & E.* 192.

Russula cuprea (Krombh.) J.E.Lange: In mixed forest, locality 20, 17.10.2007, *D. & E.* 195.

Russula delica Fr.: In coniferous forest, locality 19, 18.07.2006, *D. & E.* 134; locality 4, 28.09.2007, *D. & E.* 138; 175.

Russula firmula Jul. Schäff.: In mixed forest, locality 5, 04.09.2007, *D. & E.* 179.

Table 2. Similarity percentages of neighbouring studies with Hatila Valley National Park.

	Number of identical taxa	Total taxa	Similarity percentage (%)
Demirel & Uzun (1996)	20	51	39.2
Demirel (1998)	19	40	47.5
Demirel (1999)	20	56	35.7
Demirel et al. (2004)	40	162	24.7
Uzun (2010)	40	139	28.8

Russula foetens (Pers.) Pers.: In coniferous forest, locality 19, 22.07.2006, *D. & E.* 121; locality 5, 02.09.2007, *D. & E.* 152.

Russula integra var. *integra* (L.) Fr.: In coniferous forest, locality 2, 11.08.2007, *D. & E.* 242.

Russula risigallina (Batsch) Sacc.: In mixed forest, locality 5, 25.09.2007, *D. & E.* 180.

Russula sanguinea (Bull.) Fr.: In coniferous forest, locality 25, 04.09.2007, *D. & E.* 177; locality 19, 20.10.2007, *D. & E.* 184.

Russula velenovskyi Melzer & Zvára: In mixed forest, locality 5, 17.10.2007, *D. & E.* 181.

Thelephorales

Bankeraceae Donk

Hydnellum aurantiacum (Batsch) P.Karst.: In coniferous forest, locality 4, 18.07.2006, *D. & E.* 014.

Hydnellum peckii Banker: In coniferous forest, locality 4, 03.09.2007, *D. & E.* 165.

Sarcodon imbricatus (L.) P.Karst.: In coniferous forest, locality 19, 02.09.2007, *D. & E.* 139; locality 2, 11.08.2007, *D. & E.* 239.

Discussion

In Hatila Valley National Park 126 taxa of macromycetes, belonging to 34 families and 60 genera, were determined. Forty-nine (39%) of the 126 taxa are edible while 65 (51%) are inedible. Among the 49 edible taxa, 7 are collected and consumed in the region. Members of the genus *Morchella* are known as “Danaburnu”, “Dolmazana”, and “Kuzu

göbeği”; *Hericium coralloides* as “Keçi sakalı”, “Tellice”, or “Suğora”; *Agaricus campestris* var. *campestris* as “çayır mantarı”; *Macrolepiota konradii* and *Macrolepiota procera* as “Şemsiye mantarı” or “Toroscova”; and *Lactarius deliciosus* as “Kanlıca”, “Sütlü mantar”, or “Picka”.

Paxillus involutus, *Clitocybe ornamentalis*, *Collybia peronata*, *Amanita gemmata*, *A. muscaria*, *A. pantherina*, *A. phalloides*, *A. rubescens*, *Agaricus praeclaresquamosus*, *Lepiota cristata*, *Entoloma politum*, and *Hypholoma fasciculare* are the poisonous taxa growing in the region. Although so many poisonous mushrooms share the same habitat with the edible ones no incidents were recorded officially in the research area.

The taxa determined in the present study reflect similarity with those of the studies conducted in its close environs. These studies and the similarity percentages are given in Table 2. The reason for similarity may be attributed to the common climate and vegetation.

Two of the 126 taxa, *Arrhenia acerosa* and *Entoloma politum*, are new for Turkish macrobiota.

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References

- Akman Y (1999). *İklim ve Biyoiklim*. Ankara: Kariyer Matbacılık Ltd.
- Aktaş S, Öztürk C, Kaşık G & Doğan HH (2009). New records for the Turkish macrofungi from Amasya province. *Turk J Bot* 33: 311-321.
- Breitenbach J & Kränzlin F (1984-2000). *Fungi of Switzerland*, Volume (No 1-6). Luzern: Verlag Mykologia.
- Bresinsky A & Besl H (1990). *A Colour Atlas of Poisonous Fungi*, Stuttgart: Wolfe Publishing Ltd.
- Buczacki S (1989). *Fungi of Britain and Europe*, Glasgow: William Collins Sons & Co Ltd.
- Davis PH (1965). *Flora of Turkey and the East Aegean Islands*. Vol. 1. Edinburgh: Edinburgh Univ Press.
- Demirel K (1998). Karçal Dağları (Artvin) ve Çevresinde Belirlenen Bazı Makrofunguslar. In: M. Kılınç (ed.). XIV, *Ulusal Biyoloji Kongresi*, Vol. 1, pp. 177-184. Samsun: Ondokuz Mayıs Üniversitesi.
- Demirel K (1999). Contributions to Turkish Mycoflora from the Ardanuç District of Artvin Province. *Turk J Bot* 23: 405-409.
- Demirel K & Uzun Y (1996). Sarıkamış (Kars) Yöresinin Makrofunguslarına Katkılar. *Hacettepe Fen ve Mühendislik Bilimleri Derg* 17: 121-132.
- Demirel K, Uzun Y & Biber G (2004). Macrofungi of Şavşat (Artvin) district, *Ot Sistematik Botanik Derg* 11: 191-206.
- Ellis M B & Ellis JP (1990). *Fungi without Gills (Hymenomycetes and Gasteromycetes) An Identification Handbook*, London: Chapman and Hall.
- Eminağaoğlu Ö & Anşin R (2003). The flora of Hatila valley national park and its close environs (Artvin). *Turk J Bot* 27: 1-27.
- Jordan M (1995). *The Encyclopedia of Fungi of Britain and Europe*. Devon: David & Charles Book Co.
- Kaya A (2009a). Macromycetes of Kahramanmaraş province (Turkey). *Mycotaxon* 108: 31-34.
- Kaya A (2009b). Macrofungi diversity of Adıyaman province (Turkey). *Mycotaxon* 110: 43-46.
- Kaya A (2009c). Macrofungi of Huzurlu High Plateau (Gaziantep-Turkey). *Turk J Bot* 33: 429-437.
- Kirk PF, Cannon PF, Minter DW & Stalpers JA (2008). *Dictionary of the Fungi*. Wallingford: CAB International.
- Moser M (1983). *Keys to Agarics and Boleti*. Stuttgart: Gustav Fischer.
- Orton PD (1986). *British Fungus Flora Agaricales and Boleti 4: Pluteaceae, Pluteus & Volvariella*, Edinburgh: Royal Botanic Garden.
- Phillips R (1981). *Mushrooms and Other Fungi of Great Britain & Europe*. London: Pan Books.
- Sesli E & Denchev CM (2008). Checklists of the myxomycetes, larger ascomycetes, and larger basidiomycetes in Turkey. *Mycotaxon* 106: 65-68.
- Solak MH, Allı H, Işiloğlu M & Kalmış E (2009). Some new records of *Inocybe* (Fr.) Fr. from Turkey. *Turk J Bot* 33: 65-69.
- Solak MH, Işiloğlu M, Kalmış E & Allı H (2007). *Macrofungi of Turkey, Checklist*. Volume-I. Bornova-İzmir: Üniversiteler Ofset.
- Uzun Y (2010). Macrofungi diversity of Ardahan and Iğdır provinces (Turkey). *International Journal of Botany* 6: 11-20.
- Watling R & Gregory NM (1987). *British Fungus Flora, Agaricus and Boleti 5: Strophariaceae & Coprinaceae*, Edinburgh: Royal Botanic Garden.