



Macrofungi of Mustafa Kemal University Tayfur Sökmen Campus (Hatay- Turkey) And Environment

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Abstract: In this taxonomic study, macrofungi of Tayfur Sökmen Campus (Hatay) were collected between 2010-2011. As a result of field and laboratory studies we have reported 58 taxa *Ascomycota* and *Basidiomycota*. The distribution, habitat, and collection numbers of the identified species are given.

Key Words: Tayfur Sökmen campus (Hatay), macrofungi, systematic, Turkey

Mustafa Kemal Üniversitesi Tayfur Sökmen Kampüsü (Hatay-Türkiye) ve Çevresinin Makromantarları

Özet: Bu taksonomik çalışmada, 2010-2011 yılları arasında Tayfur Sökmen Kampüsü (Hatay) makrofungusları toplanmıştır. Arazi ve laboratuvar çalışmaları sonucu *Ascomycota* ve *Basidiomycota* bölümlerinden 58 takson rapor edilmiştir. Belirlenen türlerin yayılışı, habitatı ve toplama numaraları verilmiştir.

Anahtar Sözcükler: Tayfur Sökmen Kampüsü (Hatay), makromantar, sistematik, Türkiye

Introduction

Many studies have been carried out on the macrofungi of Turkey (Alkan et al., 2010, Alkan et al., 2011, Demirel et al., 2002, Türkoğlu et al., 2007, Kaya, 2009, Baba et al., 2013). While much research has been done on macrofungi, studies on Turkish macrofungi list are still incomplete. In this context there have been no previous studies on macrofungi growing in Hatay. The study materials were collected between 2010 and 2011 in the province of Hatay. During field studies, colorful slides of the macrofungi specimens were taken in their natural habitats.

After relevant notes were taken on their morphological and ecological features, they were put in specially prepared boxes and taken to the fungarium. Tayfur Sökmen Campus area is located of the Hatay city in Alahan village district (Figure 1).

The area is situated in Mediterranean

phytogeographical region. Research area is surrounded to the north by Amanos mountains and Alahan village areas, to the south by Amik plain, to the west by Dikmece village and to the east by Serinyol town. The altitude of the research area is 100m.

The study area is naturally covered with *Pinus brutia* Ten., scrub vegetation and frigana formation. In this type of vegetation is founded woody species of *Arbutus andrachne* L., *Quercus coccifera* L. and *Phillyrea latifolia* L. In addition in these regions *Olea europea* L. is grown in culture form (Yıldız, 2008).

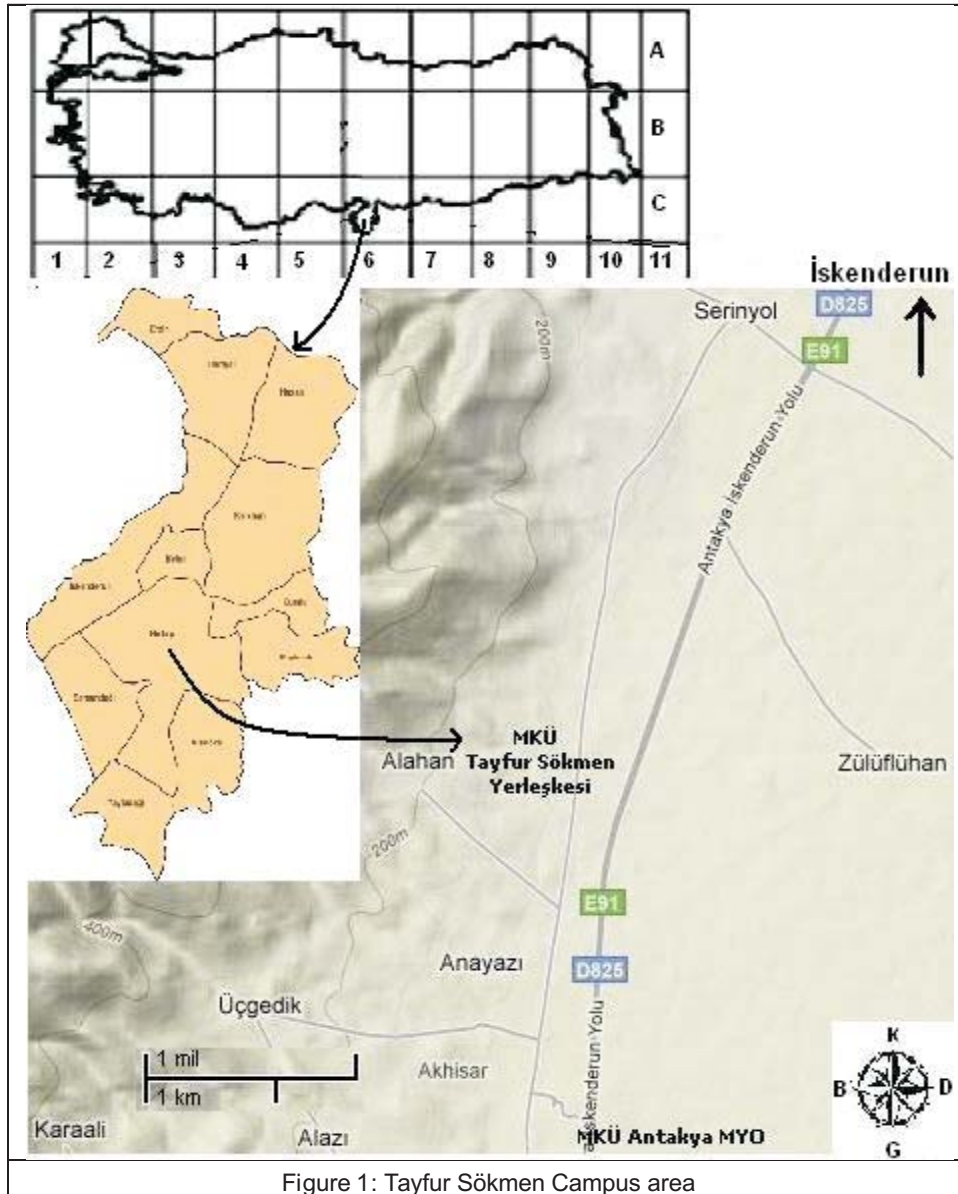
According to meteorological data of Hatay.

The highest average monthly temperature is in August and 27.6 °C, the lowest average monthly temperature is in December and 7.7 °C .



The average monthly maximum rainfall of Antakya is December with 192.4 mm, the lowest average monthly rainfall is August with 3,5 mm. (Anonim, 2007).

The aim of this study was to determine the macrofungi taxa of Campus area. All materials cited are deposited in the fungarium of the University of Mustafa Kemal (Hatay).



Materials and Methods

The macrofungi specimens of this study were collected in Tayfur Sökmen Campus area of Mustafa Kemal University and around

between the years of 2010 and 2011. The ecological and morphological characteristics of the macrofungi were recorded and they were photographed in their natural habitats.



Specimens were brought to the laboratory and dried after spore prints were obtained. The identification of taxa was carried out according to the literature. Fungus names, authors, habitats, collecting dates, collector's names and collecting numbers were respectively given in list.

We identified the specimens using the literature about macrofungi by Sesli & Denchev (2013), Moser (1983), Breitenbach & Kränzlin (1984-2000), Ellis & Ellis (1990), Cannon & Kirk (2007), Dähncke (1993) and Jordan (2004). The specimens are kept in the fungarium of Mustafa Kemal University, Department of Biology.

Results

The names of authors of macrofungus species were abbreviated according to <http://www.indexfungorum.org/names/names.a> sp (Kirk & Ansell, 1992).

Ascomycota

Diatrypaceae

Diatrype disciformis (Hoffm.) Fr.

Alahan village in coniferous forests on branches, 36°19'55"N, 36°11'05"E, 222m, 25.06.2010, Baba 10.

Morchellaceae

Morchella deliciosa Fr.

Alahan village in coniferous forests on soil, 36°19'55"N, 36°11'05"E, 222m, 25.06.2010, Baba 12.

Basidiomycota

Agaricaceae

Agaricus bisporus (J.E.Lange) Imbach

Alahan village under *Platanus* sp. trees, 36°19'55"N, 36°11'05"E, 222m, 25.06.2010, Baba 15.

Agaricus bitorquis (Quel.) Sacc.

Alahan village in coniferous forests on soil, 36°19'55"N, 36°11'05"E, 222m, 25.06.2010, Baba 18.

Agaricus bresadolanus Bohus

In front of the Faculty of Medicine on soil, 36°20'08"N, 36°11'54"E, 113m, 28.05.2010, Baba 6. Over the Alahan village in coniferous forests, 36°19'55"N, 36°11'05"E, 350m, 06.11.2010, Baba 83.

Agaricus campestris L.

In front of the Faculty of Medicine, on soil, 36°20'08"N, 36°11'54"E, 113m, 28.05.2010, Baba 9.

Agaricus cupreobrunneus (Jul. Schäff. & Steer) Pilát

Opposite the Sabancı residence on soil, 36°18'27"N, 36°11'58"E, 105m, 20.10.2010, Baba 51.

Agaricus xanthodermus Genev.

On Alahan highway under the *Pinus* sp., 36°19'30"N, 36°11'45"E, 145m, 14.10.2010, Baba 24.

Bovista plumbea Pers.

In front of the Faculty of Medicine on soil, 36°20'08"N, 36°11'54"E, 113m, 14.10.2010, Baba 25. Over the Alahan village in coniferous forests, 36°19'55"N, 36°11'05"E, 350m, 06.11.2010, Baba 84.

Chlorophyllum rachodes (Vittad.)

Vellinga

Opposite the Faculty of Arts and Sciences on soil, 36°19'39"N, 36°11'46"E, 119m, 23.12.2010, Baba 128.

Lepiota lilacea Bres.

Across from the Faculty of Agriculture under *Acer* sp. trees, 36°19'30"N, 36°11'45"E, 122m, 23.12.2010, Baba 129.

Leucoagaricus leucothites (Vittad.)

Wasser

Across from the Faculty of Agriculture under *Acer* sp. trees, 36°19'30"N, 36°11'45"E, 122m, 23.12.2010, Baba 132.

***Lycoperdon lividum* Pers.**

Over the Alahan village in coniferous forests, 36°19'55"N, 36°11'05"E, 322m, 25.06.2010, 350m, Baba 20,22.

***Lycoperdon molle* Pers.**

Across from the Faculty of Arts and Sciences on soil, 36°19'39"N, 36°11'46"E, 119m, 23.12.2010, Baba 134, 145.

***Lycoperdon perlatum* Pers.**

Over the Alahan village in coniferous forests, 36°19'55"N, 36°11'05"E, 350m, 06.11.2010, Baba 85.

***Lycoperdon pratense* Pers.**

Over the Alahan village in coniferous forests on soil, 36°19'55"N, 36°11'05"E, 350m, 06.11.2010, Baba 86.

***Lycoperdon utriforme* Bull.**

Over the Alahan village under *Pinus sp.*, 36°19'55"N, 36°11'05"E, 350m, 06.11.2010, Baba 88.

***Macrolepiota excoriata* (Schaeff.) Wasser**

In front of the Faculty of Medicine on soil, 36°20'08"N, 36°11'54"E, 113m, 20.10.2010, Baba 53. Around the University Library on soil, 36°19'39"N, 36°11'46"E, 140m, 24.12.2010, Baba 164, 168. Opposite the Faculty of Arts and Sciences on soil, 36°19'39"N, 36°11'46"E, 119m, 24.12.2010, Baba 165.

Amanitaceae***Amanita vittadinii* (Moretti) Vittad.**

Opposite the Faculty of Medicine around of *Pinus sp.*, 36°20'08"N, 36°11'54"E, 113m, 16.01.2011, Baba 169.

Auriculariaceae***Auricularia auricula-judae* (Bull.) Quel.**

Opposite the Faculty of Medicine on body of *Pinus sp.*, 36°20'08"N, 36°11'54"E, 113m, 30.10.2010, Baba 77.

Ganodermataceae***Ganoderma applanatum* (Pers.) Pat.**

In front of the Faculty of Medicine on body of *Acer sp.* trees, 36°20'08"N, 36°11'54"E, 113m, 14.10.2010, Baba 26. Over the Alahan village in coniferous forests, 36°19'55"N, 36°11'05"E, 350m, 06.11.2010, Baba 81, 96.

***Ganoderma lucidum* (Curtis) P. Karst.**

Across the Faculty of Arts and Sciences bottom of *Acer sp.* trees, 36°19'39"N, 36°11'46"E, 119m, 14.10.2010, Baba 29. In front of the Faculty of Medicine on *Acer sp.* trees, 36°20'08"N, 36°11'54"E, 113m, 14.10.2010, Baba 30.

Gloeophyllaceae***Gloeophyllum abietinum* (Bull.) P. Karst.**

In front of the Faculty of Medicine on *Acer sp.* trees, 36°20'08"N, 36°11'54"E, 113m, 14.10.2010, Baba 33. Across from the Faculty of Agriculture on branches of *Acer sp.* trees, 36°19'30"N, 36°11'45"E, 122m, 22.12.2010, Baba 125.

Hymenochaetaceae

***Fomitiporia robusta* (P. Karst.) Fiasson & Niemelä**

Opposite the Faculty of Arts and Science, 36°19'39"N, 36°11'46"E, 119m, 23.12.2010, Baba 136.

***Inonotus rheades* (Pers.) Bondartsev & Singer**

In front of the Faculty of Medicine, 36°20'08"N, 36°11'54"E, 113m, 20.10.2010, Baba 55.

***Phellinus hartigii* (Allesch. & Schnabl) Pat.**

In front of the Faculty of Agriculture on *Acer sp.* trees, 36°19'30"N, 36°11'45"E, 122m, 18.11.2010, Baba 105.

***Phellinus igniarius* (L.) Quel.**

In front of the Faculty of Medicine on the body of *Platanus sp.* trees, 36°20'08"N, 36°11'54"E, 113m, 20.10.2010, Baba 56, 63.



Inocybaceae

Tubaria furfuracea (Pers.) Gillet

In front of the Faculty of Medicine on soil,,
36°20'08"N, 36°11'54"E,113m, 20.10.2010,
Baba 57. Opposite the Faculty of Arts and
Sciences on soil, 36°19'39"N,
36°11'46"E,119m, 23.12.2010, Baba 138.
Opposite the Faculty of Arts and Sciences on
soil, 36°19'39"N, 36°11'46"E,119m, 26.01.2011,
Baba 175, 182.

Meruliaceae

Bjerkandera adusta (Willd.) P. Karst.

Across from the Faculty of Arts and
Sciences, 36°19'39"N, 36°11'46"E, 119m,
23.12.2010, Baba 142.

Omphalotaceae

Gymnopus dryophilus (Bull.) Murrill

Across from the Faculty of Agriculture
under *Acer* sp. trees, 36°19'30"N, 36°11'45"E,
122m, 22.12.2010, Baba 126.

Phallaceae

Phallus impudicus L.

In front of the Faculty of Medicine on soil,
36°20'08"N, 36°11'54"E, 113m, 20.10.2010,
Baba 59. Over the Alahan village in coniferous
forests, 36°19'55"N, 36°11'05"E, 350m,
06.11.2010, Baba 87, 98.

Pleurotaceae

Pleurotus ostreatus (Jacq.) P. Kumm.

Behind of the Faculty of Agriculture
bottom of *Populus* sp, 36°19'30"N,
36°11'45"E,122m, 18.12.2010, Baba 113, 115.

Polyporaceae

Lentinus tigrinus (Bull.) Fr.

Alahan highway on coniferous stump,
36°19'30"N, 36°11'45"E,145m, 14.10.2010,
Baba 36.

Polyporus brumalis (Pers.) Fr.

Opposite the Faculty of Arts and Sciences

on branches, 36°19'39"N, 36°11'46"E, 119m,
23.12.2010, Baba 144.

Trametes ochracea (Pers.) Gilb. & Ryvarden

In front of the Faculty of Medicine on
Populus sp, 36°20'08"N, 36°11'54"E,113m,
21.10.2010, Baba 71.

Trametes versicolor (L.) Lloyd

Over the Alahan village in *Pinus* sp. Forest
on branches, 36°19'55"N, 36°11'05"E, 350m,
06.11.2010, Baba 92.

Psathyrellaceae

Panaeolus papilionaceus (Bull.) Quel.

Opposite the Faculty of Arts and Sciences
on soil, 36°19'39"N, 36°11'46"E,119m,
23.12.2010, Baba 163.

Psathyrella candolleana (Fr.) Maire

Over the road of Alahan near the *Pinus* sp,
36°19'30"N, 36°11'45"E, 145m, 14.10.2010,
Baba 37. Faculty of Veterinary Medicine under
the *Platanus* sp. trees, 36°19'39"N, 36°11'46"E,
125m, 18.10.2010, Baba 49. In front of the
Faculty of Medicine among grass, 36°20'08"N,
36°11'54"E,113m, 21.10.2010, Baba 72.
Opposite the Faculty of Arts and Sciences on
soil, 36°19'39"N, 36°11'46"E, 119m, 23.12.2010,
Baba 130, 141.

Psathyrella prona (Fr.) Gillet

Opposite the Faculty of Arts and Sciences
on soil, 36°19'39"N, 36°11'46"E, 119m,
23.12.2010, Baba 147.

Psathyrella sphagnicola (Maire) J.

Favre

In front of the Faculty of Medicine on soil,
36°20'08"N, 36°11'54"E,113m, 21.10.2010,
Baba 75.



Psathyrella tephrophylla (Romagn.)

M.M. Moser

In front of the Faculty of Medicine on soil, 36°20'08"N, 36°11'54"E, 113m, 20.10.2010, Baba 60, 68. Behind of the Sabancı residence on soil, 36°18'27"N, 36°11'58"E, 105m, 11.11.2010, Baba 100. In front of the Faculty of Agriculture near the *Acer* sp. trees, 36°19'30"N, 36°11'45"E, 122m, 14.12.2010, Baba 112.

Russulaceae

Lactarius salmonicolor R. Heim &

Leclair

In front of the Faculty of Medicine on soil, 36°20'08"N, 36°11'54"E, 113m, 20.12.2010, Baba 118.

Schizophyllaceae

Schizophyllum commune Fr.

Over Alahan village on body of *Pinus* sp, 36°19'55"N, 36°11'05"E, 350m, 06.11.2010, Baba 95.

Sclerodermataceae

Pisolithus arhizus (Scop.) Rauschert

In front of the Faculty of Medicine on sandy soil, 36°20'08"N, 36°11'54"E, 113m, 20.10.2010, Baba 63. In front of the Faculty of Agriculture around of *Acer* sp. trees, on sandy soil, 36°19'30"N, 36°11'45"E, 122m, 20.12.2010, Baba 119. Opposite the Faculty of Arts and Sciences on sandy soil, 36°19'39"N, 36°11'46"E, 119m, 23.12.2010, Baba 131, 143, 155.

Scleroderma citrinum Pers.

Over the Alahan village in *Pinus* sp forest, 36°19'55"N, 36°11'05"E, 350m, 06.11.2010, Baba 99.

Strophariaceae

Agrocybe splendida Cléménçon

In front of the Faculty of Medicine, on soil, 36°20'08"N, 36°11'54"E, 113m, 14.10.2010, Baba 39.

Cyclocybe cylindracea (DC.) Vizzini &

Angelini

In front of the Faculty of Medicine at the bottom of *Eucalyptus* sp., 36°20'08"N, 36°11'54"E, 113m, 14.10.2010, Baba 42. In front of the Faculty of Arts and Sciences on soil, 36°19'39"N, 36°11'46"E, 119m, 23.12.2010, Baba 149. In front of the Faculty of Agriculture bottom of *Acer* sp. trees on soil, 36°19'30"N, 36°11'45"E, 122m, 26.01.2011, Baba 179.

Pholiota lucifera (Lasch) Quel.

Zülüflühan Cemetery between debris, 36°19'00"N, 36°11'30"E, 130m, 23.12.2010, Baba 153.

Protostropharia semiglobata (Batsch)

Redhead, Moncalvo & Vilgalys

In front of the Faculty of Agriculture under *Acer* sp. trees, among meadows 36°19'30"N, 36°11'45"E, 122m, 21.12.2010, Baba 122.

Suillaceae

Suillus collinitus (Fr.) Kuntze

Opposite the Faculty of Arts and Sciences on soil, among meadows, 36°19'39"N, 36°11'46"E, 119m, 23.12.2010, Baba 156.

Suillus grevillei (Klotzsch) Singer

Opposite the Faculty of Arts and Sciences on soil, among meadows, 36°19'39"N, 36°11'46"E, 119m, 26.01.2011, Baba 180.

Suillus luteus (L.) Roussel

In front of the Faculty of Medicine on soil, among meadows, 36°20'08"N, 36°11'54"E, 113m, 01.11.2010, Baba 80.

Tricholomataceae

Clitocybe bresadolana Singer

In front of the Faculty of Medicine on soil, among meadows, 36°20'08"N, 36°11'54"E, 113m, 14.10.2010, Baba 45.

***Clitocybe brumalis*** (Fr.) Quel.

Across the Faculty of Arts and Sciences on soil, among woody debris, 36°19'39"N, 36°11'46"E, 119m, 23.12.2010, Baba 158.

Leucopaxillus mirabilis (Bres.) Konrad & Maubl.

Anayazı village between of coniferous debris, 36°19'00"N, 36°11'30"E, 130m, 20.10.2010, Baba 65.

Melanoleuca excissa (Fr.) Singer

In front of the Faculty of Medicine on soil, 36°20'08"N, 36°11'54"E, 113m, 30.10.2010, Baba 79. Opposite the Faculty of Arts and Sciences on soil, 36°19'39"N, 36°11'46"E, 119m, 23.12.2010, Baba 161.

Melanoleuca graminicola (Velen.) Kuhner & Maire

Anayazı village between grasses, 36°19'00"N, 36°11'30"E, 130m, 24.11.2010, Baba

109.

Tricholoma terreum (Schaeff.) P. Kumm.

In front of the Faculty of Medicine on soil, 36°20'08"N, 36°11'54"E, 113m, 20.10.2010, Baba 70.

Discussion

As a result of the field and laboratory studies, 58 species belong to 39 genera of two division and 21 families have been identified. 2 of them belong to *Ascomycota*, and the other 56 species belong to *Basidiomycota*.

Macrolepiota excoriata, *Tubaria furfuracea*, *Psathyrella candolleana*, *Psathyrella tephrophylla*, *Pisolithus arhizus* and *Agrocybe cylindracea* are the most widespread taxa in research area.

According to the literature, approximately 37.9% (22 taxa) of the all taxa are edible (Table 1). Also about 56.9% (33 taxa) of the all taxa are in edible and 5.2% (3 taxa) are poisonous (Table 2).

Table 1: Edible species list:

<i>Morchella deliciosa</i> Fr.	<i>Auricularia auricula-judae</i> (Bull.) Quel.
<i>Agaricus bisporus</i> (J.E.Lange) Imbach	<i>Gymnopus dryophilus</i> (Bull.) Murrill
<i>Agaricus bitorquis</i> (Quel.) Sacc.	<i>Pleurotus ostreatus</i> (Jacq.) P. Kumm.
<i>Agaricus campestris</i> L.	<i>Lactarius salmonicolor</i> R. Heim & Leclair
<i>Lycoperdon lividum</i> Pers.	<i>Cyclocybe cylindracea</i> (DC.) Vizzini & Angelini
<i>Bovista plumbea</i> Pers.	<i>Suillus collinitus</i> (Fr.) Kuntze
<i>Agaricus cupreobrunneus</i> (Jul. Schäff. & Steer) Pilát	<i>Suillus grevillei</i> (Klotzsch) Singer
<i>Lycoperdon molle</i> Pers.	<i>Suillus luteus</i> (L.) Roussel
<i>Lycoperdon perlatum</i> Pers.	<i>Melanoleuca excissa</i> (Fr.) Singer
<i>Lycoperdon utriforme</i> Bull.	<i>Melanoleuca graminicola</i> (Velen.) Kuhner & Maire
<i>Macrolepiota excoriata</i> (Schaeff.) Wasser	<i>Tricholoma terreum</i> (Schaeff.) P. Kumm.

Table 2: Poisonous species list:

<i>Agaricus xanthodermus</i> Genev.
<i>Panaeolus papilionaceus</i> (Bull.) Quel.
<i>Pisolithus arhizus</i> (Scop.) Rauschert



At the end of this research we have contributed to list of Turkish macrofungi with 58 macrofungi taxa which have been identified different localities in Tayfur Sökmen Campus and environment forests.

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