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## Macrofungal Biodiversity of Güneysınır District (Konya-Turkey)

Akın ÇELİK<sup>1</sup>, Yasin UZUN<sup>2</sup>  
Abdullah KAYA<sup>3\*</sup>

\*Sorumlu yazar: kayaabd@hotmail.com

<sup>1</sup> Lale Primary School, Karaman, Turkey

Orcid ID: 0000-0002-2807-0698/ akin\_007\_@hotmail.com

<sup>2</sup> Karamanoğlu Mehmetbey University, Science Faculty, Dept. of Biology, Karaman, Turkey

Orcid ID: 0000-0002-6423-6085/ yasinuzun\_61@hotmail.com

<sup>3</sup> Gazi University, Science Faculty, Department of Biology, 06500 Ankara, Turkey

Orcid ID: 0000-0002-4654-1406/ kayaabd@hotmail.com

**Abstract:** This study was based on 295 macrofungi samples collected from the region within the boundaries of Güneysınır district of Konya province. As a result of field and laboratory studies, 89 macromycete species belonging to five classes, 10 orders, 36 families and 62 genera within Ascomycota and Basidiomycota were determined. The taxa are listed together with their habitats and localities.

**Key words:** Biodiversity, macrofungi, taxonomy, edible and poisonous mushrooms

### Güneysınır İlçesi (Konya-Türkiye)'nin Makromantar Biyoçeşitliliği

**Öz:** Bu çalışma Konya'nın Güneysınır ilçe sınırları içinde kalan bölgeden toplanan 295 makromantar örneğine dayanmaktadır. Arazi ve laboratuvar çalışmaları sonucunda Ascomycota ve Basidiomycota bölümleri içinde yer alan beş sınıf, 10 takım, 36 familya ve 62 cinse ait 89 makromantar türü belirlenmiştir. Taksonlar habitat ve lokaliteleri ile birlikte listelenmiştir.

**Anahtar kelimeler:** Biyoçeşitlilik, makromantarlar, taksonomi, yenilen ve zehirli mantarlar

### Introduction

Güneysınır is a district of Konya province in Central Anatolian Region of Turkey. It has a surface area of 522.38 km<sup>2</sup>, and located between 37°01'-37°21' north latitudes and 32°35'- 32°49' east longitudes. The district is surrounded by Karaman to the east, Hadim (Konya) to the south, Bozkır and Çumra (Konya) to the west and Çumra (Konya) to the north (Fig. 1). Northern part of the district is composed of step areas and agricultural fields. Mountainous region is located at the southern, south-eastern and south-western parts of the district. Gökbaşı hill (1744 m), Küçükyılanlı hill (1697 m) which are the two projections of Hacibaba mountains, and Saksığan hill (1951 m) form the peak points of the region. Kızılöz, Aydoğmuş irrigation ponds and İngiliz Boğazı dam lake constitute the main hydrological components of the region.

Akman (1999) reports the climate of the region as Mediterranean. According to the meteorological data obtained from Güneysınır Meteorological Station, the

annual precipitation is 482.2 mm, and the average temperature is 12.57 °C. Though step vegetation dominates the region, some *Quercus* L., *Juniperus* L., and *Pinus nigra* J.F.Arnold populations constitutes the forest areas at mountainous region. *Quercus* species are the most dominant tree populations in forest areas.

Sesli and Denchev (2014) and Solak et al (2015) lists about 2.400 macromycete taxa existing in Turkey. After these checklists numerous contributions were also made to the macromycota of Turkey as either as local lists (Akata et al., 2019; Özkazanç and Yeşilbaş Keleş, 2019; Şelem et al., 2019; Yıldız et al., 2019) or as new records (Acar et al., 2018; Akçay et al., 2018; Sesli et al., 2018; Allı and Doğan, 2019; Çağlı et al., 2019; Kaygusuz et al., 2019; Keleş, 2019; Sesli, 2019; Uzun and Acar, 2018). But the existence of 15.000 mushrooms in Europe (Lukić, 2009) reveals the necessity of further studies in this field.

Though some mycological researches were conducted within the boundaries of Konya province (Afyon, 1996, 1997; Kaşık and Öztürk, 2000; Öztürk et al.,



2000; Aktaş et al., 2003; Alkan et al., 2010; Kaşık et al., 2017), there isn't any study focusing on the macromycetes of Güneysınır district. The study aims to determine the macrofungal biodiversity of the district and to make a contribution to the mycobiota of Turkey.

### Material and method

The fungal samples were collected between 2017 and 2019 from the habitats in Güneysınır (Konya) district. During field studies, fruit bodies were photographed at their natural habitats and required characteristics were recorded. Then the samples were transferred to the fungarium where the detailed investigations were carried out. A Nikon Eclipse Ci-S trinocular compound microscope, coupled with a Nikon DS-Fi2 camera was

used for microscopic investigations. The samples were identified by comparing the accumulated descriptive data with Phillips (2010), Moser (1983), Cappelli (1984), Breitenbach and Kränzlin (1984, 1986, 1991, 1995, 2000), Miller ve Miller (1988), Ellis and Ellis (1990, 1997), Candusso and Lanzoni (1990), Buczacki (1992), Hansen and Knudsen (1992, 1997), Jordan (1995), Courtecuisse and Duhem (1995), Pegler et al. (1995), Bessette et al. (1997, 2007, 2010), Antonin and Noordeloos (2010), Kuo (2005), Bessette and Bessette (2006), Trappe et al. (2007), Sterry and Hughes (2009), Hausknecht (2009), Kuo and Methven (2010), Medardi (2006), Thompson (2013) and Beug et al. (2014). The specimens are kept at Karamanoğlu Mehmetbey University, Kamil Özdağ Science Faculty, Department of Biology.

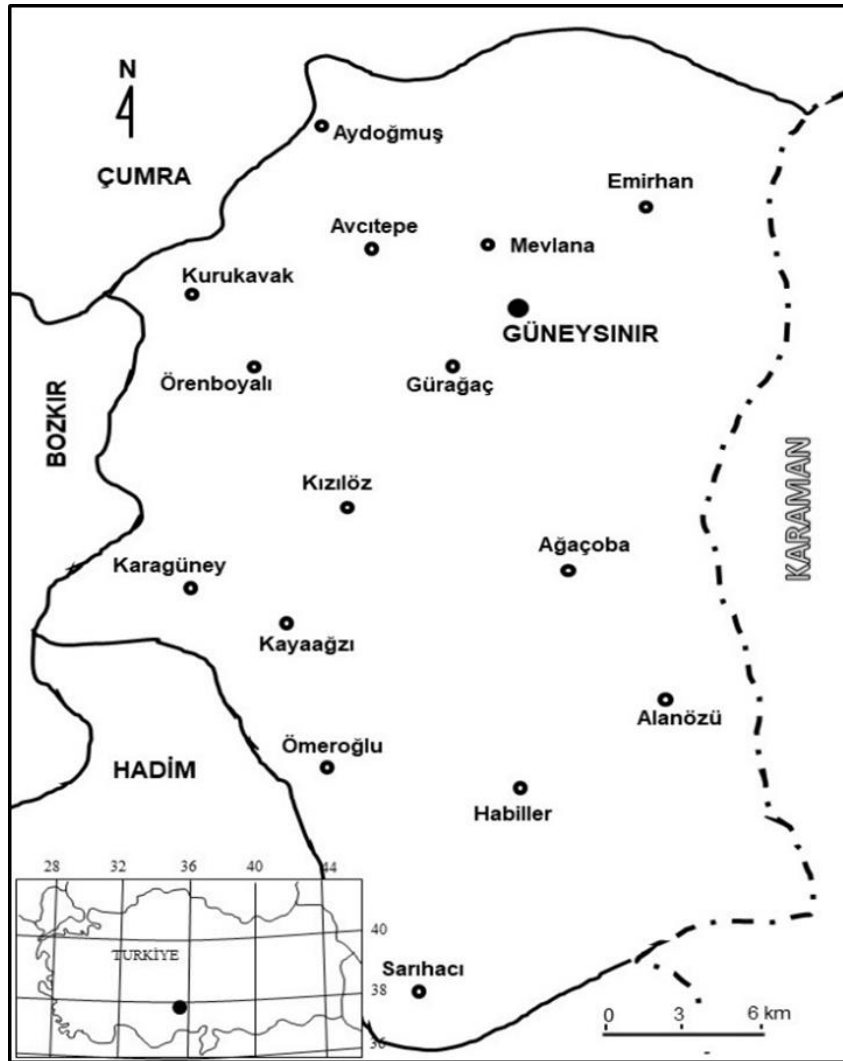


Figure 1. Map of the research area



## Results

Considering the taxonomic categories, the determined taxa are listed in alphabetical order together with its locality, substrate, habitat, collection date and personal voucher number. The systematics of the taxa are in accordance with Kirk et al. (2010) and Index Fungorum (accessed 15 December 2019).

### **Ascomycota** Caval-Sm

#### **Leotiomyces** O.E. Erikss. & Winka

#### **Helotiales** Nannf. ex Korf & Lizoň

#### **Dermateaceae** Fr.

#### **Mollisia melaleuca** (Fr.) Sacc.

Örenboyalı Village, stream side, on dead *Populus* sp. twig, 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-240.

#### **Helotiaceae** Rehm

#### **Hymenoscyphus calyculus** (Fr.) W. Phillips

Alanözü Village, on decaying *Populus* sp. twigs, 37°06'N-32°44'E, 1180 m, 11.11.2018, A.Çelik-134.

#### **Hyaloscyphaceae** Nannf.

#### **Brunnipila clandestina** (Bull.) Baral

Kızılöz Village, on dead *Quercus* sp. in mixed forest, 37°11'N-32°39'E, 1320 m, 28.04.2019, A.Çelik-288.

#### **Lachnaceae** Raitv.

#### **Lachnum virgineum** (Batsch) P. Karst.

Gürağaç Village, on *Quercus* sp. cupules in oak forest, 37°14'N-32°40'E, 1200 m, 24.03.2019, A.Çelik-159; Kızılöz Village, 37°11'N-32°39'E, 1335 m, 28.04.2019, A.Çelik-289.

#### **Pezizomyces** O.E. Erikss. & Winka

#### **Pezizales** J. Schröt.

#### **Discinaceae** Benedix

#### **Discina brunnea** (Underw.) Raitv.

Örenboyalı Village, on soil among grass at stream side, 37°14'N-32°39'E, 1240 m, 28.04.2019, A.Çelik-247.

#### **Helvellaceae** Fr.

#### **Helvella acetabulum** (L.) Qué!

Gürağaç Village, on soil in oak forest, 37°14'N-32°40'E, 1200 m, 24.03.2019, A.Çelik-157; Karasınır Village (Akkışla High Plateau), on soil in mixed forest, 37°13'N-32°44'E, 1470 m, 13.04.2019, A.Çelik-171; Emirhan Village, 37°15'N-32°46'E, 1145 m, 20.04.2019, A.Çelik-204; Örenboyalı Village, 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-260.

#### **Helvella cupuliformis** Dissing & Nannf.

Habiller Village, on soil in pine forest, 37°05'N-32°44'E, 1180 m, 15.04.2018, A.Çelik-115.

#### **Helvella fusca** Gillet

Gürağaç Village, among leaf litter in oak forest, 37°14'N-32°40'E, 1200 m, 24.03.2019, A.Çelik-158.

#### **Helvella lacunosa** Afzel.

Emirhan Village, among leaf litter in oak forest, 37°15'N-32°47'E, 1145 m, 20.04.2019, A.Çelik-205; Kızılöz Village, 37°11'N-32°39'E, 1320 m, 28.04.2019, A.Çelik-281.

#### **Helvella leucomelaena** (Pers.) Nannf.

Habiller Village, under or among needle litter in pine forest, 37°05'N-32°44'E, 1210 m, 11.03.2018, A.Çelik-108, A.Çelik-112; Alanözü Village, 37°06'N-32°44'E, 1150 m, 13.04.2019, A.Çelik-180.

#### **Helvella leucopus** Pers.

Örenboyalı Village, on soil under *Populus-Salix* sp., 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-245.

#### **Paxina queletii** (Bres.) Stangl

Emirhan Village, among leaf litter in oak forest, 37°15'N-32°47'E, 1145 m, 20.04.2019, A.Çelik-207.

#### **Morchellaceae** Rchb.

#### **Morchella deliciosa** Fr

Alanözü Village, on soil in pine forest, 37°06'N-32°44'E, 1185 m, 23.03.2019, A.Çelik-149; Ağaçoğa village (Kabakbaş High Plateau), on soil in oak forest, 37°11'N-32°46'E, 1400 m, 13.04.2019, A.Çelik-177.

#### **Morchella elata** Fr.

Habiller Village, on soil in pine forest, 37°06'N-32°44'E, 1210 m, 13.04.2019, A.Çelik-184. (Şekil 4.14).

#### **Morchella esculenta** (L.) Pers.

Habiller Village, among needle litter in pine forest, 37°05'N-32°44'E, 1255 m, 11.03.2018, A.Çelik-109; Alanözü Village, 37°06'N-32°44'E, 1185 m, 23.03.2019, A.Çelik-148; Aydoğmuş Village, on soil in oak forest, 37°18'N-32°39'E, 1115 m, 20.04.2019, A.Çelik-226.

#### **Morchella vaporaria** Brond.

Örenboyalı Village, among grasses at stream side, 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-255.

#### **Pezizaceae** Dumort.

#### **Sarcosphaera coronaria** (Jacq.) J. Schröt.

Alanözü Village, among needle litter in pine forest, 37°06'N-32°44'E, 1185 m, 07.05.2017, A.Çelik-029.

#### **Terfezia claveryi** Chatin

Avcitepe Village, in soil among *Helianthemum* sp., 37°17'N-32°40'E, 1180 m, 13.04.2019, A.Çelik-192.

#### **Pyronemataceae** Corda

#### **Anthracobia melaloma** (Alb. & Schwein.) Arnould

Örenboyalı Village, on ash among grasses in picnic area, 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-249.

#### **Cheilymenia granulata** (Bull.) J. Moravec

Avcitepe Village, on dung among grasses, 37°17'N-32°40'E, 1190 m, 13.04.2019, A.Çelik-195.

**Genea lobulata** (Mor.-Arr. J. Gómez & Calonge) P. Alvarado & Mor.-Arr.



Karagüney Village, in soil in juniper-oak mixed forest, 37°10'N-32°38'E, 1295 m, 28.04.2019, A.Çelik-272.

**Geopora arenosa** (Fuckel) S. Ahmad

Emirhan Village, in soil in juniper-oak mixed forest, 37°15'N-32°47'E, 1155 m, 20.04.2019, A.Çelik-210; Örenboyalı Village, in soil among grasses, 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-252; Karagüney Village, 37°10'N-32°38'E, 28.04.2019, A.Çelik-263; Kızılöz Village, 37°11'N-32°39'E, 28.04.2019, A.Çelik-282.

**Geopora sumneriana** (Cooke) M. Torre

Habiller Village, under needle litter in pine forest, 37°05'N-32°44'E, 1250 m, 18.02.2018, A.Çelik-097, 15.04.2018, A.Çelik-120; Alanözü Village, 37°06'N-32°44'E, 1210 m, 13.04.2019, A.Çelik-181.

**Octospora polytrichi** (Schumach.) Caillet & Moyne

Ağaçoba (Kabakbaş High Plateau), among moss at stream side, 37°11'N-32°45'E, 1285 m, 02.12.2018, A.Çelik-143.

**Picoa juniperi** Vittad.

Avcitepe Village, in soil among grasses, 37°17'N-32°40'E, 1190 m, 13.04.2019, A.Çelik-193.

**Picoa lefebvrei** (Pat.) Maire

Avcitepe Village, in soil among grasses, 37°17'N-32°40'E, 1185 m, 13.04.2019, A.Çelik-191.

**Scutellinia scutellata** (L.) Lambotte

Ağaçoba Village (Kabakbaş High Plateau), among mosses at stream side, 37°11'N-32°45'E, 1295 m, 14.05.2017, A.Çelik-035.

**Sepultariella patavina** (Cooke & Sacc.) Van Vooren, U. Lindem. & Healy

Habiller Village, on soil among mosses and grasses, 37°05'N-32°44'E, 1260 m, 11.03.2018, A.Çelik-111.

**Tarzetta cupularis** (L.) Svrček

Aydoğmuş Village, on soil in oak forest, 37°18'N-32°39'E, 1115 m, 20.04.2019, A.Çelik-224; Kızılöz Village, 37°11'N-32°39'E, 1320 m, 28.04.2019, A.Çelik-293.

**Tuberaceae** Dumort.

**Tuber borchii** Vittad.

Ağaçoba Village (Kabakbaş High Plateau), in soil under *Quercus* sp., 37°12'N-32°45'E, 1370 m, 13.04.2019, A.Çelik-188.

**Tuber excavatum** Vittad.

Ağaçoba Village (Kabakbaş High Plateau), in soil under *Quercus* sp., 37°11'N-32°45'E, 1335 m, 13.04.2019, A.Çelik-175.

**Tuber ferrugineum** Vittad.

Ağaçoba Village (Kabakbaş High Plateau), in soil under *Quercus* sp., 37°11'N-32°45'E, 1335 m, 13.04.2019,

A.Çelik-176; Aydoğmuş Village, 37°18'N-32°39'E, 1115 m, 20.04.2019, A.Çelik-225.

**Tuber nitidum** Vittad.

Emirhan Village, in soil under *Quercus* sp., 37°15'N-32°47'E, 1155 m, 20.04.2019, A.Çelik-209; Karagüney Mahalesi, 37°10'N-32°38'E, 1295 m, 28.04.2019, A.Çelik-276; Kızılöz Village, 37°11'N-32°39'E, 1320 m, 28.04.2019, A.Çelik-291; Örenboyalı Village, in soil under *Populus* and *Salix* sp., 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-242.

**Xylariaceae** Tul. & C. Tul.

**Rosellinia mammiformis** (Pers.) Ces. & De Not.

Örenboyalı Village, on decaying *Populus* sp. 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-238.

**Basidiomycota** R.T. Moore

**Agaricomycetes** Doweld

**Agaricales** Underw.

**Agaricaceae** Chevall.

**Agaricus bitorquis** (Quél.) Sacc.

Karagüney Village, on soil among grasses, 37°10'N-32°38'E, 1295 m, 28.04.2019, A.Çelik -265.

**Agaricus campestris** L.

Ağaçoba Village (Kabakbaş High Plateau), on soil among grasses, 37°11'N-32°45'E, 1310 m, 19.11.2017, A.Çelik-077.

**Bovista plumbea** Pers.

Emirhan Village, on soil in mixed forest, 37°15'N-32°47'E, 1180 m, 20.04.2019, A.Çelik-216; Kızılöz Village, on soil among grasses, 37°11'N-32°39'E, 1320 m, 28.04.2019, A.Çelik-285.

**Coprinus comatus** (O.F. Müll.) Pers.

Ağaçoba Village (Kabakbaş High Plateau), on soil among grasses, 37°11'N-32°45'E, 1300 m, 01.05.2017, A.Çelik-009; 13.04.2019, A.Çelik-178; Gurağaç Village, 37°15'N-32°41'E, 1170 m, 24.03.2019, A.Çelik-156.

**Cyathus olla** (Batsch) Pers.

Alanözü Village, on decaying woody debris, 37°07'N-32°46'E, 1155 m, 24.03.2019, A.Çelik-161.

**Cyathus stercoreus** (Schwein.) De Toni

Habiller Village, on dung among grasses, 37°05'N-32°44'E, 1195 m, 11.03.2018, A.Çelik-106.

**Leucoagaricus leucothites** (Vittad.) Wasser

Gurağaç Village, on soil among grasses, 37°15'N-32°32'E, 1200 m, 24.03.2019, A.Çelik-163.

**Lycoperdon molle** Pers.

Ağaçoba Village (Kabakbaş High Plateau), on soil among leaf litter in oak forest, 37°11'N-32°45'E, 1340 m, 19.11.2017, A.Çelik-071.



**Macrolepiota mastoidea** (Fr.) Singer

Ağaçoba Village (Kabakbaş High Plateau), on soil in oak forest, 37°11'N-32°45'E, 1310 m, 19.11.2017, A.Çelik-073.

**Tulostoma brumale** Pers.

Karasınır Village (Akkışla High Plateau), on soil in juniper and oak forest, 37°13'N-32°44'E, 1425 m, 14.05.2017, A.Çelik-032.

**Tulostoma fimbriatum** Fr.

Emirhan Village, on soil in juniper and oak forest, 37°15'N-32°47'E, 1175 m, 20.04.2019, A.Çelik-215.

**Bolbitiaceae** Singer**Conocybe apala** (Fr.) Arnolds

Alanözü Village, on soil among grasses, 37°07'N-32°46'E, 1160 m, 28.05.2017, A.Çelik-051.

**Conocybe deliquescens** Hauskn. & Krisai

Örenboyalı Village, on soil among grasses, 37°14'N-32°39'E, 1205 m, 20.04.2019, A.Çelik-233.

**Hygrophoraceae** Lotsy**Arrhenia spathulata** (Fr.) Redhead

Gürağaç Village, on mosses among grasses, 37°14'N-32°40'E, 1200 m, 17.02.2018, A.Çelik-088.

**Hymenogastraceae** Vittad.**Hymenogaster bulliardii** Vittad.

Karasınır Village (Akkışla High Plateau), in soil under *Quercus* sp., 37°13'N-32°44'E, 1435 m, 13.04.2019, A.Çelik-172.

**Hymenogaster luteus** Vittad.

Ağaçoba Village (Kabakbaş High Plateau), in soil in juniper and oak forest, 37°12'N-32°45'E, 1370 m, 13.04.2019, A.Çelik-187; Aydoğmuş Village, in soil in oak forest, 37°18'N-32°39'E, 1120 m, 20.04.2019, A.Çelik-228.

**Psilocybe coronilla** (Bull.) Noordel.

Emirhan Village, on manured soil among grasses, 37°15'N-32°47'E, 1140 m, 20.04.2019, A.Çelik-198.

**Incertae Sedis****Panaeolina foenisecii** (Pers.) Maire

Alanözü Village, on manured soil among grasses, 37°07'N-32°46'E, 1160 m, 28.05.2017, A.Çelik-057.

**Panaeolus fimicola** (Pers.) Gillet

Habiller Village, on manured soil among grasses, 37°05'N-32°44'E, 1180 m, 15.04.2018, A.Çelik-116.

**Pisolithus arhizus** (Scop.) Rauschert

Örenboyalı Village, on soil under *Populus* and *Salix* sp., 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-248.

**Inocybaceae** Jülich**Inocybe vaccina** Kühner

Emirhan Village, on soil in oak forest, 37°15'N-32°47'E, 1185 m, 20.04.2019, A.Çelik-220.

**Marasmiaceae** Roze ex Kühner**Marasmius oreades** (Bolton) Fr.

Gürağaç Village, on soil in oak forest, 37°14'N-32°40'E, 1200 m, 24.03.2019, A.Çelik-160.

**Mycenaceae** Overeem**Mycena seynii** Quél.

Alanözü Village, on decaying pine cones, 37°05'N-32°45'E, 1230 m, 19.11.2017, A.Çelik-080.

**Omphalotaceae** Bresinsky**Gymnopus dryophilus** (Bull.) Murrill

Ağaçoba Village (Kabakbaş High Plateau), on soil among leaf litter in oak forest, 37°11'N-32°45'E, 1335 m, 19.11.2017, A.Çelik-070.

**Physalacriaceae** Corner**Flammulina velutipes** (Curtis) Singer

Örenboyalı Village, on soil under *Populus* and *Salix* sp., 37°14'N-32°40'E, 1205 m, 28.04.2019, A.Çelik-241.

**Strobilurus tenacellus** (Pers.) Singer

Alanözü Village, among needle litter in pine forest, 37°06'N-32°44'E, 1165 m, 13.04.2019, A.Çelik-179.

**Pleurotaceae** Kühner**Pleurotus dryinus** (Pers.) P. Kumm.

Ağaçoba Village (Kabakbaş High Plateau), on decaying *Populus* sp. stump, 37°11'N-32°45'E, 1280 m, 07.05.2017, A.Çelik-024.

**Pleurotus eryngii** (DC.) Quél.

Örenboyalı Village, on soil under *Populus* and *Salix* sp., 37°14'N-32°39'E, 1205 m, 14.04.2018, A.Çelik-119.

**Pleurotus ostreatus** (Jacq.) P. Kumm.

Ağaçoba Village (Kabakbaş High Plateau), on decaying *Populus* sp. stump, 37°11'N-32°45'E, 1285 m, 30.04.2017, A.Çelik-001; 13.04.2019, A.Çelik-185.

**Psathyrellaceae** Vilgalys, Moncalvo & Redhead**Coprinellus micaceus** (Bull.) Vilgalys, Hopple & Jacq. Johnson

Alanözü Village, on soil around *Populus* sp. stump, 37°07'N-32°46'E, 1160 m, 28.05.2017, A.Çelik-053; Örenboyalı Village, 37°14'N-32°40'E, 1200 m, 28.04.2019, A.Çelik-239.

**Coprinopsis picacea** (Bull.) Redhead, Vilgalys & Moncalvo

Alanözü Village, among leaf and needle litter in pine forest, 37°07'N-32°45'E, 1230 m, 19.11.2017, A.Çelik-079.

**Psathyrella candolleana** (Fr.) Maire

Alanözü Village, around decaying *Populus* sp. stump, 37°07'N-32°46'E, 1160 m, 28.05.2017, A.Çelik-055; Avcitepe Village, 37°17'N-32°40'E, 1190 m, 13.04.2019, A.Çelik-194; Karagüney Village, around *Quercus* sp. stump, 37°10'N-32°38'E, 1295 m, 28.04.2019, A.Çelik-266. (Şekil 4.75).

**Schizophyllaceae** Quéf.**Schizophyllum amplum** (Lév.) Nakasone

Örenboyalı Village, on decaying *Populus* sp. twigs, 37°14'N-32°39'E, 1205 m, 17.02.2018, A.Çelik-083; Ağaçoğa Village (Kabakbaş High Plateau), 37°11'N-32°45'E, 1280 m, 11.11.2018, A.Çelik-140; Güragaç Village, 37°15'N-32°47'E, 1190 m, 24.03.2019, A.Çelik-154.

**Schizophyllum commune** Fr.

Güragaç Village, on decaying *Populus* sp. stump, 37°15'N-32°47'E, 1190 m, 24.03.2019, A.Çelik-155.

**Strophariaceae** Singer & A.H. Sm.**Agrocybe molesta** (Lasch) Singer

Alanözü Village, on soil among grasses, 37°07'N-32°46'E, 1150 m, 27.05.2017, A.Çelik-040.

**Agrocybe pediades** (Fr.) Fayod

Emirhan Village, on soil in juniper forest, 37°15'N-32°47'E, 1185 m, 20.04.2019, A.Çelik-217, A.Çelik-221; Örenboyalı Village, on soil among grasses, 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-251.

**Agrocybe praecox** (Pers.) Fayod

Kızılöz Village, on soil among grasses, 37°11'N-32°39'E, 1320 m, 28.04.2019, A.Çelik-295.

**Cyclocybe cylindracea** (DC.) Vizzini & Angelini

Ağaçoğa Village (Kabakbaş High Plateau), on decaying *Populus* sp. stump, 37°11'N-32°45'E, 1295 m, 14.05.2017, A.Çelik-034.

**Tricholomataceae** R. Heim ex Pouzar**Melanoleuca grammopodia** (Bull.) Murrill

Örenboyalı Village, on soil among grasses, 37°14'N-32°39'E, 1205 m, 28.04.2019, A.Çelik-261.

**Tricholoma terreum** (Schaeff.) P. Kumm.

Alanözü Village, on soil among needle litter, 37°07'N-32°45'E, 1235 m, 24.03.2019, A.Çelik-166.

**Boletales** E.-J. Gilbert**Boletaceae** Chevall.**Rubroboletus satanas** (Lenz) Kuan Zhao & Zhu L. Yang

Karasınır Village (Akkışla High Plateau), on soil among leaf litter under *Quercus* sp., 37°13'N-32°44'E, 1435 m, 14.05.2017, A.Çelik-033.

**Diplocystidiaceae** Kreisel**Astraeus hygrometricus** (Pers.) Morgan

Karasınır Village (Akkışla High Plateau), on soil among leaf litter under *Quercus* sp., 37°13'N-32°44'E, 1440 m, 13.04.2019, A.Çelik-173; Emirhan Village, on soil, 37°15'N-32°47'E, 1145 m, 20.04.2019, A.Çelik-206; Karagüney Village, on soil, 37°10'N-32°38'E, 1295 m, 28.04.2019, A.Çelik-278.

**Rhizopogonaceae** Gäum. & C.W. Dodge**Rhizopogon luteolus** Fr.

Alanözü Village, on soil among needle litter, 37°06'N-32°44'E, 1180 m, 11.11.2018, A.Çelik-141.

**Rhizopogon roseolus** (Corda) Th. Fr.

Habiller Village, in soil among needle litter in pine forest, 37°05'N-32°44'E, 1180 m, 15.04.2018, A.Çelik-116.

**Suillaceae** Besl & Bresinsky**Suillus collinitus** (Fr.) Kuntze

Habiller Village, on soil among needle litter in pine forest, 37°06'N-32°44'E, 1200 m, 09.11.2018, A.Çelik-125; Alanözü Village, 37°07'N-32°45'E, 1235 m, 24.03.2019, A.Çelik-165.

**Gaestrales** K. Hosaka & Castellano**Gaestraceae** Corda**Gastrum coronatum** Pers.

Alanözü Village, among needle litter in pine forest, 37°07'N-32°45'E, 1235 m, 17.02.2018, A.Çelik-090.

**Gastrum minimum** Schwein.

Emirhan Village, in soil under *Quercus* sp., 37°15'N-32°47'E, 1145 m, 20.04.2019, A.Çelik-203.

**Hysterangiales** K. Hosaka & Castellano**Hysterangiaceae** E. Fisch.**Hysterangium stoloniferum** Tul. & C. Tul.

Karagüney Village, in soil under *Quercus* sp., 37°10'N-32°38'E, 1295 m, 28.04.2019, A.Çelik-277.

**Polyporales** Gäum.**Meruliaceae** Rea**Bjerkandera fumosa** (Pers.) P. Karst.

Ağaçoğa Village (Kabakbaş High Plateau), on decaying *Populus* sp. stump, 37°11'N-32°45'E, 1280 m, 14.05.2017, A.Çelik-037.

**Polyporaceae** Fr. ex Corda**Cerioporus squamosus** (Huds.) Quéf.

Örenboyalı Village, on decaying branches of *Populus* sp., 37°14'N-32°39'E, 1205 m, 17.02.2018, A.Çelik-091.

**Fomes fomentarius** (L.) Fr.

Ağaçoğa Village (Kabakbaş High Plateau), on *Populus* sp. trunk, 37°11'N-32°45'E, 1280 m, 14.05.2017, A.Çelik-036.

**Lentinus tigrinus** (Bull.) Fr

Alanözü Village, around decaying *Salix* sp. stump, 37°06'N-32°44'E, 1180 m, 11.11.2018, A.Çelik-138.

**Trametes trogii** Berk.

Ağaçoğa Village (Kabakbaş High Plateau), on decaying *Populus* sp. stump, 37°11'N-32°45'E, 1280 m, 07.05.2017, A.Çelik-025.

**Russulales** Kreisel ex P.M. Kirk, P.F. Cannon & J.C. David**Stereaceae** Pilát**Stereum hirsutum** (Willd.) Pers.

Güragaç Village, on decaying wood particles, 37°14'N-32°40'E, 1200 m, 17.02.2018, A.Çelik-089.



### **Pucciniales** Caruel

### **Pucciniaceae** Chevall.

### **Gymnosporangium clavariiforme** (Wulfen) DC.

Emirhan Village, on living juniper branches, 37°15'N-32°47'E, 1175 m, 20.04.219, A.Çelik-214; Örenboyalı Village, 37°14'N-32°39'E, 1215 m, 28.04.219, A.Çelik-256.

### **Discussions**

A Eighty nine macromycete species were determined from the region within the boundaries of Güneysınır district. The taxa included 34 Ascomycota (29 Pezizales, 4 Helotiales, 1 Xylariales) and 55 Basidiomycota (40 Agaricales, 5 Boletales, 5 Polyporales, 2 Geastrales, 1 Russulales, 1 Hysterangiales, 1 Pucciniales). All the determined taxa are new for the research area.

Thirty five (% 39.33) of the determined taxa are edible, 50 (% 56.18) are inedible and 4 (% 4.49) are more

or less poisonous. Some edible taxa are collected and consumed by locals with three distinct names: "Kavak mantarı" (*Pleurotus ostreatus*), "Domalan, dolaman or keme" (*Terfezia clavaryi*) and "Kuzu göbeği" (*Morchella deliciosa*, *M. elata* and *M. esculenta*). Among the locally consumed taxa, *T. clavaryi* and *Morchella* species also have local economic importance.

Among the determined taxa, 66 are terricolous, 18 are lignicolous, two are bryophilous and two are coprophilous. Sixteen of them were also determined to be hypogeous or semihypogeous.

The macrofungi determined in Güneysınır were compared with the studies carried out in close environs. These studies and the similarity percentages of them are given in Table 1. The reason for this similarity may be the common climate and vegetation.

Table 1. Similarity percentages of neighbouring studies with Güneysınır and its close environs

	# of Identical taxa	Total taxa	Similarity (%)
Afyon (1996)	18	41	43.9
Aktaş et al. (2003)	20	74	27
Doğan and Öztürk (2006)	25	202	12.4
Doğan et al. (2007)	21	95	22.1
Kaşık et al. (2000)	8	33	24.2
Kaşık et al. (2001)	12	32	37.5
Kaşık et al. (2017)	18	59	30.5
Öztürk et al (2001)	11	72	15.3

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