

## Full Length Research Paper

# Macrofungal diversity of Babadağ (Denizli, Turkey)

Aziz Türkoğlu

Department of Biology, Faculty of Science and Arts, Nevsehir University, 50300, Nevsehir, Turkey. E-mail: [turkoglu.aziz@gmail.com](mailto:turkoglu.aziz@gmail.com). Tel: +90-384-2153900. Fax: +90-384-2153949.

Accepted 16 January, 2008

**Some macrofungi specimens were collected from different localities in Babadağ District (Denizli) between 2005 – 2006 particularly during the months of autumn and spring seasons. As a result of the field and laboratory studies, totally 125 taxa belonging to 70 genera, 40 families and 2 classes have been identified. 19 taxa belong to *Ascomycetes*, 106 taxa belong to *Basidiomycetes* classes.**

**Key words:** Fungal diversity, taxonomy, macrofungi, Babadağ, Denizli, Turkey.

## INTRODUCTION

Many taxonomic studies of the macrofungal flora of Turkey have been carried out and many others are in progress. The studies carried out on macrofungi species between 1817 and 2007 have been reviewed, and as a result it was determined that there are approximately 2400 documented macrofungi species in Turkey (Solak et al., 2007). In these studies, the Mediterranean, Marmara, Black Sea and Western part of Turkey have been investigated. Although there are many taxonomic studies in the Aegean region (Gezer et al., 2007; Türkoğlu et al., 2007a; Türkoğlu et al., 2007b; Çelik et al., 2007), there is no research available in Babadağ district. Therefore, the area was chosen as a research area.

Babadağ is a town in the province of Denizli, bordered by Tavas on the south, Sarayköy on the north, Aydın on the west, and Denizli on the east (Figure 1). The collection area, located in the Aegean region, has a Mediterranean-alpine climate. The investigated area is a natural habitat of number of trees, dominant forest plants, such as *Pinus nigra*, *P. brutia*, *Juniperus oxycedrus* and *Quercus coccifera*. There are also *Populus alba* and *Salix triandra*, which grow near the streams. The study area's climate and vegetation are favourable for macrofungi. The aim of this study is to determine macrofungi species in the research area and thus provide more data on the macrofungi of Turkey.

## MATERIAL AND METHOD

Macrofungi were collected in Babadağ district (Denizli) between 2005 and 2006. The field studies were conducted mostly in autumn and spring, since during these periods the climatic conditions are

most suitable for Macrofungi. Relevant morphological and ecological characteristics of the macrofungi were recorded and photographed in their natural habitats. The local consumption of macrofungi and their local names were recorded by interviewing local people. Then they were carried to the laboratory for further investigation. Spore prints were prepared and spores photographed. The specimens were identified by examining their macroscopic and microscopic features, using current reference books (Marchand, 1971-1986; Phillips, 1981; Moser, 1983; Bresinsky and Besl, 1990; Ellis and Ellis, 1990; Breitenbach and Kränzlin, 1984-2000). Taxa are arranged according to Kirk et al. (2004). All collected specimens are now deposited at Pamukkale University, Education Faculty, Laboratory of Science Department, in Denizli.

## RESULTS

In our study, 124 taxa belonging to 40 families were identified. The distribution of the taxa and their families are: *Tricholomataceae* 14, *Lycoperdaceae* 9, *Psathyrellaceae* 7, *Russulaceae* 7, *Agaricaceae* 6, *Bolbitiaceae* 6, *Morchellaceae* 6, *Polyporaceae* 6, *Pezizaceae* 5, *Geastraceae* 4, *Helvellaceae* 4, *Hymenochaetaceae* 4, *Marasmiaceae* 4, *Pluteaceae* 4, *Boletaceae* 3, *Mycenaceae* 3, *Suillaceae* 3, *Hydnangiaceae* 2, *Pyronemataceae* 2, *Rhizopogonaceae* 2, *Stereaceae* 2, *Strophariaceae* 2, *Albatrellaceae* 1, *Astraeaceae* 1, *Auriculariaceae* 1, *Cortinariaceae* 1, *Crepidotaceae* 1, *Discinaceae* 1, *Exidiaceae* 1, *Ganodermataceae* 1, *Gomphidiaceae* 1, *Hygrophoropsidaceae* 1, *Phallaceae* 1, *Pleurotaceae* 1, *Pisolithaceae* 1, *Sarcoscyphaceae* 1, *Schizophyllaceae* 1, *Sclerodermataceae* 1, *Thelephoraceae* 1, and *Tulostomataceae* 1.

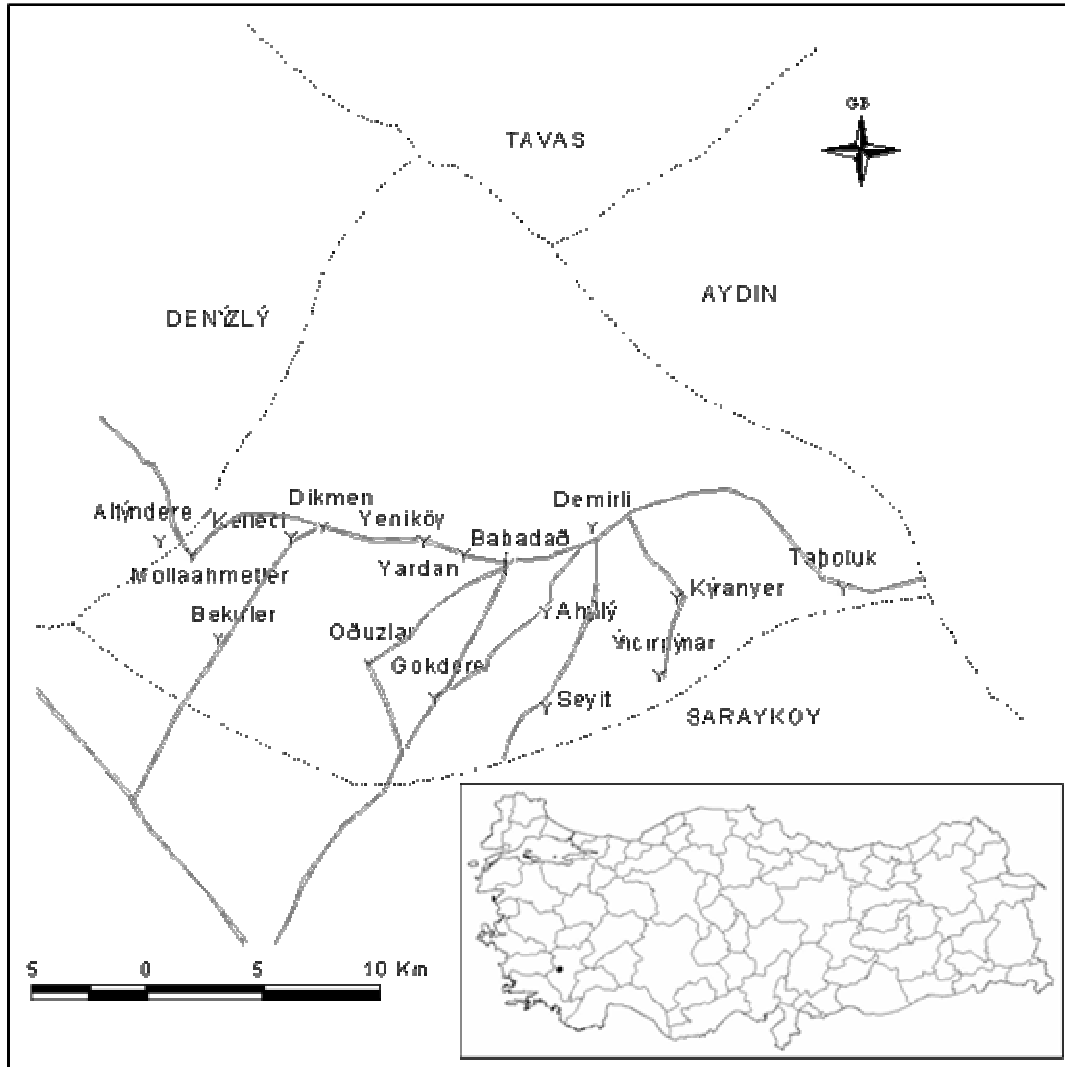


Figure 1. Macrofungi collection areas.

These taxa are presented with their localities, habitats, collection dates and accession numbers.

### Ascomycetes

#### Discinaceae

##### *Gyromitra esculenta* (Pers.) Fr.

Altındere village, in *Pinus brutia* forest, 12.04.2006 Türkoğlu 2627.

#### Helvellaceae

##### *Helvella lacunosa* Afzel.

Kelleci village, in *Pinus brutia* forest, 13.04.2006 Türkoğlu 2726; Kelleci village, in *Pinus brutia* forest, 13.04.2006

Türkoğlu 2744; Kelleci village, in *Pinus brutia* forest, 13.04.2006 Türkoğlu 2747; Yeniköy village, in *Pinus brutia* forest, 19.05.2006 Türkoğlu 2765, 2795.

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

İncirpınar village, in *Pinus brutia* forest, 10.04.2006 Türkoğlu 2583; Kıranyer village, in *Pinus brutia* forest, 12.04.2006 Türkoğlu 2613.

##### *Helvella queletii* Bres.

Yeniköy village, in *Pinus brutia* forest, 19.05.2006 Türkoğlu 2766.

##### *Helvella acetabulum* (L.) Quéf.

Kelleci village, in *Pinus brutia* forest, on path, 13.04.2006 Türkoğlu 2719.

**Morchellaceae*****Morchella angusticeps* Peck**

Yardan village, in *Pinus brutia* forest, under *Cistus salvifolius*, 13.04.2006 Türkoğlu 2738.

***Morchella conica* Krombh.**

Taşoluk village, in *Pinus brutia* forest, under *Cistus salvifolius*, 12.04.2006 Türkoğlu 2630; Yeniköy, in *Pinus brutia* forest, under *Cistus salvifolius*, 19.05.2006 Türkoğlu 2778.

***Morchella crassipes* Schwein. & Cooke**

İncirpınar village, in *Pinus brutia* forest, under *Cistus salvifolius*, 10.04.2006 Türkoğlu 2576.

***Morchella distans* Fr.**

Altındere village, in *Pinus brutia* forest, under *Cistus salvifolius*, 12.04.2006 Türkoğlu 2639.

***Morchella elata* Fr.**

Altındere village, in *Pinus brutia* forest, under *Cistus salvifolius*, 12.04.2006 Türkoğlu 2631.

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

İncirpınar village, in *Pinus brutia* forest, under *Cistus salvifolius*, 10.04.2006 Türkoğlu 2594.

**Pezizaceae*****Peziza ampelina* Quél.**

Yeniköy village, in gardens, 19.05.2006 Türkoğlu 2770.

***Peziza arvernensis* Boud.**

Oğuzlar village, in gardens, 19.05.2006 Türkoğlu 2774.

***Pachyella celtica* (Boud.) Häffner**

İncirpınar village, among leaf litter, 10.04.2006 Türkoğlu 2598; Altındere village, 12.04.2006 Türkoğlu 2620; Kelleci village, among leaf litter, 13.04.2006 Türkoğlu 2710.

***Peziza micropus* Pers.**

Yeniköy village, on rotting wood, 19.05.2006 Türkoğlu 2772.

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

Ahıllı village, in gardens, 12.04.2006 Türkoğlu 2616.

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

Mollaahmetler village, in *Quercus coccifera* forest, 22.05.2006 Türkoğlu 2844.

***Tarzetta catinus* (Holmsk.) Korf & J.K. Rogers**

Mollaahmetler village, on road sides, 22.05.2006 Türkoğlu 2854.

**Sarcoscyphaceae*****Sarcoscypha coccinea* (Jacq.) Sacc.**

Demirli village, on branches of willow, 21.12.2005 Türkoğlu 2493.

**Basidiomycetes****Agaricaceae*****Agaricus campestris* L.**

Kelleci village, in *Pinus brutia* forest, 13.04.2006 Türkoğlu 2752.

***Agaricus hortensis* Krombh.**

Dikmen village, in needle litter, 21.05.2006 Türkoğlu 2821.

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

İncirpınar village, bank of the stream, 10.04.2006 Türkoğlu 2568; Yeniköy village, Yardan village, in garden, 19.05.2006 Türkoğlu 2764.

***Lepiota clypeolaria* (Bull.) P. Kumm.**

Taşoluk village, on leaf litter, 10.04.2006 Türkoğlu 2585.

***Leucoagaricus cinerascens* (Quél.) Bon & Boiffard**

Oğuzlar village, in gardens, 25.05.2006 Türkoğlu 2901; Altındere village, in gardens, 12.04.2006 Türkoğlu 2634.

***Macrolepiota excoriata* (Schaeff.) M.M. Moser**

İncirpınar district, in field area, 21.12.2005 Türkoğlu 2502.

**Albatrellaceae*****Albatrellus confluens* (Alb. & Schwein.) Kotl. & Pouzar**

İncirpınar village, under *Picea*, 18.12.2005 Türkoğlu 2463.

**Astraeaceae*****Astraeus hygrometricus* (Pers.) Morgan**

İncirpınar village, in grass, 18.12.2005 Türkoğlu 2475;  
İncirpınar village, in garden, 18.12.2005 Türkoğlu 2484;  
Kelleci village, in *Quercus coccifera* forest, 13.04.2006  
Türkoğlu 2711; Seyit village, in garden, 25.05.2006  
Türkoğlu 2887.

**Auriculariaceae*****Auricularia mesenterica* (Dicks.) Pers.**

Mollaahmetler village, on *Fagus* sp. 22.05.2006 Türkoğlu 2866.

**Bolbitiaceae*****Agrocybe cylindracea* (DC.) Gillet**

İncirpınar village, on stumps of *Populus alba*, 18.12.2005  
Türkoğlu 2448, 2488; Yeniköy, on stumps of *Populus*,  
19.05.2006 Türkoğlu 2798.

***Agrocybe dura* (Bolton) Singer**

Yeniköy village, in garden, 19.05.2006 Türkoğlu 2776.

***Hebeloma eburneum* Malençon**

İncirpınar village, in *Pinus brutia* forest, 10.04.2006  
Türkoğlu 2578.

***Hebeloma mesophaeum* (Pers.) Qué. var. *mesophaeum***

İncirpınar village, in *Pinus brutia* forest, 18.12.2005  
Türkoğlu 2424, 2430, 2451, 2563.

***Panaeolus papilionaceus* (Bull.) Qué. var. *papilionaceus*,**

Yeniköy village, on manure, 19.05.2006 Türkoğlu 2777.

***Panaeolus sphinctrinus* (Fr.) Qué.**

Kelleci village, on manure, 13.04.2006 Türkoğlu 2708.

**Boletaceae*****Boletus calopus* Pers.**

Yardan village, in *Pinus brutia* forest, 19.05.2006  
Türkoğlu 2762; Mollaahmetler village, in *Pinus brutia*  
forest, 22.05.2006 Türkoğlu 2879, 2880.

***Boletus chrysenteron* Bull.**

Kelleci village, in *Quercus coccifera* forest, 13.04.2006  
Türkoğlu 2755; Yeniköy, in *Quercus coccifera* forest,  
19.05.2006 Türkoğlu 2800.

***Boletus edulis* Bull.**

Mollaahmetler village, in *Quercus coccifera* forest,  
22.05.2006 Türkoğlu 2872.

**Cortinariaceae*****Gymnopilus penetrans* (Fr.) Murrill**

Oğuzlar village, on *Populus alba*, 25.05.2006 Türkoğlu 2911.

**Crepidotaceae*****Crepidotus mollis* (Schaeff.) Staude**

Mollaahmetler village, on *Populus alba*, 22.05.2006  
Türkoğlu 2856.

**Exidiaceae*****Exidia truncata* Fr.**

İncirpınar village, on dead branches of *Quercus coccifera*, 10.04.2006 Türkoğlu 2592.

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

Gökdere village, on chestnut tree, 25.05.2006 Türkoğlu 2902, 2912.

**Gomphidiaceae*****Chroogomphus rutilus* (Schaeff.) O.K. Mill.**

İncirpınar village, in *Pinus brutia* forest, 18.12.2005  
Türkoğlu 2426; Altındere village, in garden, 12.04.2006  
Türkoğlu 2628.

**Hydnangiaceae**

***Laccaria laccata* (Scop.) Cooke**

İncirpınar village, in field area, 18.12.2005 Türkoğlu 2476, 2547; Dikmen village, in field area, 21.12.1005 Türkoğlu 2498; Kelleci village, in field area, 13.04.2006 Türkoğlu 2709.

***Laccaria bicolor* (Maire) P.D. Orton**

Kelleci village, in field area, 13.04.2006 Türkoğlu 2718.

**Hygrophoropsidaceae**

***Tapinella atrotomentosa* (Batsch) Šutara**

Yeniköy village, in *Pinus brutia* forest, 19.05.2006 Türkoğlu 2804.

**Hymenochaetaceae**

***Coltricia perennis* (L.) Murrill**

Mollaahmetler village, among needle litter, 22.05.2006 Türkoğlu 2873.

***Phellinus pini* (Brot.) Bondartsev & Singer**

Altındere village, on *Pinus* sp., 12.04.2006 Türkoğlu 2650.

***Phellinus pomaceus* (Pers.) Maire**

Seyit, on *Prunus* sp., 25.05.2006 Türkoğlu 2903.

***Phellinus torulosus* (Pers.) Bourdot & Galzin**

İncirpınar village, on *Pinus* sp. 18.12.2005 Türkoğlu 2470, 2474; Demirli village, on *Pinus* sp. 21.05.2006 Türkoğlu 2809.

**Geastraceae**

***Geastrum elegans* Vittad.**

Yeniköy village, in needle litter, 19.05.2006 Türkoğlu 2775.

***Geastrum pectinatum* Pers.**

Kelleci village, in field area, 13.04.2006 Türkoğlu 2754.

***Geastrum fimbriatum* Fr.**

Kelleci village, in field area, 13.04.2006 Türkoğlu 2754.

***Geastrum rufescens* Pers.**

Kelleci village, on soil in conifer, 13.04.2006 Türkoğlu 2754.

**Lycoperdaceae**

***Bovista nigrescens* Pers.**

Yardan village, in grass, 25.05.2005 Türkoğlu 2904.

***Bovista plumbea* Pers**

Yar-dan village, in meadows, 25.05.2005 Türkoğlu 2908.

***Handkea utriformis* (Bull.) Kreisel**

Kelleci village, in meadows, 13.04.2006 Türkoğlu 2707.

***Langermannia gigantea* (Batsch) Rostk.**

Yardan village, in meadows, 25.05.2005 Türkoğlu 2913.

***Lycoperdon mammiforme* Pers.**

Bekirler village, in grass, among leaf litter, 14.10.2006 Türkoğlu 2905.

***Lycoperdon nigrescens* Wahlenb.**

Kelleci village, on soil in conifer, 13.04.2006 Türkoğlu 2731.

***Lycoperdon perlatum* Pers.**

Bekirler village, among leaf litter, 14.10.2006 Türkoğlu 2908.

***Lycoperdon umbrinum* Pers.**

Yeniköy village, in grass, 19.05.2006 Türkoğlu 2797; Oğuzlar village, 21.05.2006 Türkoğlu 2811.

***Vascellum pratense* (Pers.) Kreisel**

İncirpınar village, in meadows, 18.12.2006 Türkoğlu 2467.

**Marasmiaceae**

***Armillaria mellea* (Vahl) P. Kumm.**

İncirpınar village, on stumps of *Quercus* sp., 18.12.2005 Türkoğlu 2421, 2466.

***Armillaria tabescens* (Scop.) Emel**

İncirpınar village, on stumps of chestnut, 18.12.2005 Türkoğlu 2441.

***Marasmius oreades* (Bolton) Fr.**

İncirpınar village, in garden, 10.04.2006 Türkoğlu 2565;  
Yeniköy village, in garden, 19.05.2006 Türkoğlu 2758.

***Rhodocollybia butyracea* (Bull.) Lennox f. *butyracea***

İncirpınar village, on leaf litter in conifer, 18.12.2005  
Türkoğlu 2442.

**Mycenaceae*****Mycena inclinata* (Fr.) Quél.**

İncirpınar village, on stumps of *Castanea* sp., 18.12.2005  
Türkoğlu 2428, 2465, 3481.

***Mycena latifolia* (Peck) A.H. Sm.**

İncirpınar village, in mossy meadows, 18.12.2005  
Türkoğlu 2440.

***Mycena strobilicola* J. Favre & Kühner**

İncirpınar village, on cones of *Pinus nigra*, 21.12.2005  
Türkoğlu 2511.

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

Yeniköy village, on *Populus alba* stump, 19.05.2006  
Türkoğlu 2760.

**Pluteaceae*****Amanita pantherina* (DC.) Krombh.**

Mollaahmetler village, under *Cistus salvifolius*,  
22.05.2006 Türkoğlu 2876.

***Amanita verna* Secr.**

Kıraner village, under *Cistus salvifolius*, 21.05.2006  
Türkoğlu 2832; Taşoluk village, in grass, 22.05.2006  
Türkoğlu 2869, 2885; in coniferous forest, 22.05.2006  
Türkoğlu 2877; under *Cistus salvifolius*, 22.05.2006  
Türkoğlu 2882; in grass, 22.05.2006 Türkoğlu 2883; in  
coniferous forest, under *Cistus salvifolius*, 22.05.2006  
Türkoğlu 2884.

***Pluteus petasatus* (Fr.) Gillet**

Oğuzlar village, on stumps of *Populus* sp. 21.05.2006  
Türkoğlu 2812.

***Volvariella murinella* (Quél.) M.M. Moser**

Yeniköy village, in grass, 19.05.2006 Türkoğlu 2791;  
Bekirler village, among grass, 21.05.2006 Türkoğlu 2805.

**Phallaceae*****Phallus impudicus* L.**

İncirpınar village, in *Pinus brutia* forest, 18.12.2005  
Türkoğlu 2482; Ahıllı village, in *Pinus brutia* forest,  
14.10.2006 Türkoğlu 2900.

**Pisolithaceae*****Pisolithus arrhizus* (Scop.) Rauschert**

Dikmen village, roadside, 21.05.2006 Türkoğlu 2822.

**Psathyrellaceae*****Coprinopsis atramentaria* (Bull.) Redhead, Vilgalys & Moncalvo**

Altındere village, in meadows, 12.04.2006 Türkoğlu 2632.

***Coprinellus disseminatus* (Pers.) J.E. Lange**

Bekirler village, on paths, 19.05.2006 Türkoğlu 2771.

***Parasola kuehneri* (Uljé & Bas) Redhead, Vilgalys & Hopple**

Mollaahmetler village, on moist soil, 22.05.2006 Türkoğlu  
2847.

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

Altındere village, on dead woods, 2.04.2006 Türkoğlu  
2633.

***Psathyrella candolleana* (Fr.) Maire**

Kıraner village, bank of the stream, 21.05.2006 Türkoğlu  
2837.

***Psathyrella leucotephra* (Berk. & Broome) P.D. Orton**

İncirpınar village, on base of living *Populus alba*,  
10.04.2006 Türkoğlu 2558.

***Psathyrella marcescibilis* (Britzelm.) Singer**

Yeniköy village, in grass, 19.05.2006 Türkoğlu 2784.

**Polyporaceae*****Fomes fomentarius* (L.) J.J. Kickx**

Bekirler village, on coniferous trees, 14.10.2006 Türkoğlu 2909.

***Funalia trogii* (Berk.) Bondartsev & Singer**

Yeniköy village, on *Platanus orientalis*, 19.05.2006 Türkoğlu 2761.

***Polyporus brumalis* (Pers.) Fr.**

İncirpınar village, on stumps of dead coniferous trees, 10.04.2006 Türkoğlu 2571.

***Polyporus squamosus* (Huds.) Fr.**

Mollaahmetler village, on *Populus nigra*, 22.05.2006 Türkoğlu 2862.

***Trametes pubescens* (Schumach.) Pilát**

Kelleci village, on *Prunus* sp., 21.12.2006 Türkoğlu 2492.

***Trametes versicolor* (L.) Lloyd**

Yeniköy village, on fallen dead branches, 19.05.2006 Türkoğlu 2760.

**Rhizopogonaceae*****Rhizopogon luteolus* Fr. & Nordholm**

Altındere village, in *Pinus nigra* forest, 12.04.2006 Türkoğlu 2608.

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

Kelleci village, in *Pinus nigra* forest, 13.04.2006 Türkoğlu 2735.

**Russulaceae*****Lactarius deliciosus* (L.) Gray**

İncirpınar village, in *Pinus nigra* forest, 18.12.2005 Türkoğlu 2437.

***Lactarius deterrimus* Gröger**

Dikmen village, in *Pinus nigra* forest, 21.05.2006 Türkoğlu 2830.

***Russula aurea* Pers.**

Mollaahmetler village, in *Pinus nigra* forest, 22.05.2006 Türkoğlu 2871.

***Russula azurea* Bres.**

Kelleci village, in *Pinus brutia* forest, 13.04.2006 Türkoğlu 2723.

***Russula cyanoxantha* (Schaeff.) Fr.**

Kelleci village, in *Pinus brutia* forest, 13.04.2006 Türkoğlu 2722; Yeniköy village, in *Pinus brutia* forest, 19.05.2006 Türkoğlu 2788.

***Russula delica* Fr.**

İncirpınar village, in *Pinus brutia* forest, 18.12.2005 Türkoğlu 2473.

***Russula livescens* (Batsch) Bataille**

Dikmen village, in *Pinus brutia* forest, 21.05.2006 Türkoğlu 2831.

**Schizophyllaceae*****Schizophyllum commune* Fr.**

Kelleci village, on stumps of fallen branches, 13.04.2006 Türkoğlu 2743.

**Sclerodermataceae*****Scleroderma bovista* Fr.**

Kelleci village, on sandy ground, 13.04.2006 Türkoğlu 2751.

**Stereaceae*****Stereum hirsutum* (Willd.) Pers.**

İncirpınar village, on trunks of *Quercus coccifera*, 18.12.2005 Türkoğlu 2439; on branches of *Quercus coccifera*, 10.04.2006 Türkoğlu 2600.

***Stereum ochraceoflavum* (Schwein.) Fr.**

İncirpınar village, on dead branches of *Quercus coccifera*, 10.04.2006 Türkoğlu 2595; Demirli village, on dead branches of *Quercus coccifera*, 14.10.2006 Türkoğlu 2906.

**Strophariaceae*****Hypholoma fasciculare* (Huds.) P. Kumm.**

İncirpınar village, on stumps of *Populus alba*, 10.04.2006 Türkoğlu 2605; Kelleci village, on stumps of *Populus alba*, 13.04.2006 Türkoğlu 2714.

***Stropharia coronilla* (Bull.) Qué.**

İncirpınar village, in *Pinus nigra* ? forest, 10.04.2006  
Türkoğlu 2603.

**Suillaceae*****Suillus bellinii* (Inzenga) Watling**

Seyit village, under *Quercus coccifera*, 14.10.2006  
Türkoğlu 2907.

***Suillus collinitus* (Fr.) Kuntze**

Yeniköy village, under *Quercus coccifera*, 19.05.2006  
Türkoğlu 2759.

***Suillus granulatus* (L.) Roussel**

Altındere village, in *Pinus nigra* forest, 12.04.2006  
Türkoğlu 2626.

**Thelephoraceae*****Thelephora terrestris* Ehrh.**

Kelleci village, in *Pinus nigra* forest, on needle  
litter, 13.04.2006 Türkoğlu 2703.

**Tricholomataceae*****Clitocybe candicans* (Pers.) P. Kumm.**

İncirpınar village, in *Pinus nigra* forest, 18.12.2006  
Türkoğlu 2469.

***Clitocybe costata* Kühner & Romagn.**

Kelleci village, under bushes, 13.04.2006 Türkoğlu 2750.

***Clitocybe gibba* (Pers.) P. Kumm.**

Yeniköy village, in *Pinus nigra* forest, on needle,  
19.05.2006 Türkoğlu 2796.

***Clitocybe odora* (Bull.) P. Kumm.**

İncirpınar village, in field area, 18.12.2005 Türkoğlu 2489.

***Clitocybe subspadicea* (J.E. Lange) Bon & Chevassut**

İncirpınar village, in *Pinus nigra* forest, among leaf litter,  
18.12.2005 Türkoğlu 2468. 114.

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

İncirpınar village, on leaf litter, 10.04.2006 Türkoğlu 2559;  
Altındere village, on leaf litter, 12.04.2006 Türkoğlu 2610.

***Gymnopus ocior* (Pers.) Antonín & Noordel.**

İncirpınar village, on chestnut, 18.12.2005 Türkoğlu 2429.

***Lepista nuda* (Bull.) Cooke**

İncirpınar village, in garden, 21.12.2005 Türkoğlu 2504.

***Leucopaxillus tricolor* (Peck) Kühner**

İncirpınar village, in *Pinus nigra* forest, 18.12.2005  
Türkoğlu 2420.

***Melanoleuca brevipes* (Bull.) Pat.**

Bekirler village, in meadows, 21.05.2006 Türkoğlu 2868.

***Melanoleuca cognata* subsp. *cognata* (Fr.) Konrad & Maubl.**

Yeniköy village, in pastures, 19.05.2006 Türkoğlu 2557.

***Melanoleuca excissa* (Fr.) Singer var. *excissa***

İncirpınar village, in garden, 10.04.2006 Türkoğlu 2567;  
Mollaahmetler village, in field area, 22.05.2006 Türkoğlu  
2886.

***Melanoleuca paedida* (Fr.) Kühner & Maire**

İncirpınar village, in *Pinus nigra* forest, 10.04.2006  
Türkoğlu 2574.

***Tricholoma myomyces* (Pers.) J.E. Lange**

İncirpınar village, in *Pinus nigra* forest, 18.12.2005  
Türkoğlu 2454, 2487; along forest edges, 18.12.2005  
Türkoğlu 2464.

***Tricholoma portentosum* (Fr.) Qué.**

Kelleci village, in *Pinus nigra* forest, 13.04.2006 Türkoğlu  
2736.

**Tulostomataceae*****Tulostoma squamosum* Pers.**

Bekirler village, in *Pinus nigra* forest, 14.10.2006  
Türkoğlu 2910.



## DISCUSSION

In this study, 124 macrofungi taxa belonging to 40 families collected in Babadağ (Denizli) were reported. 19 of these belong to *Ascomycetes* and 105 to *Basidiomycetes*. While 84.6% belong to *Basidiomycota* classes, 15.3% of the macrofungi belong to the *Ascomycota*. These figures are similar to those from the earlier studies conducted in other neighbouring regions. For instance, in the Mediterranean region of Turkey, macrofungi species consist of 7.5% *Ascomycota* and 92.5% *Basidiomycota* (İşiloğlu and Watling, 1992), 13% *Ascomycota* and 87% *Basidiomycota* in the Izmir Province (Solak et al., 1999), 9% *Ascomycota* and 91% *Basidiomycota* in the Antalya region (Gezer, 2000) and 13% *Ascomycota* and 87% *Basidiomycota* in the Bekilli District (Köse et al., 2006).

In comparison with earlier studies carried out near our research area, there were some similarities in terms on the species growing in the regions. This may have been because of similarities in vegetation, climate and plant flora. Most of the determined species belong to family *Tricholomataceae* (12%), *Lycoperdaceae* (7.2%), *Psathyrellaceae* (5.6%), *Russulaceae* (5.6%) and *Agaricaceae* (4.8%).

*Morchella esculenta*, *M. conica*, *M. elata*, *Rhizpogon roseolus*, *R. luteolus*, *Lactarius deliciosus*, *Pleurotus ostreatus*, *Lepista nuda*, *Tricholoma myomyces*, *Agaricus campestris* and *Russula delica* are known as edible mushrooms that are collected and consumed by local people. The other edible mushrooms are not recognised or valued locally.

Lignicolous macrofungi consist of 27 (21.6%) species in the area. Some live as parasites on live trees and cause organic product loss and structural damage to the host trees. *Armillaria*, *Fomes*, *Ganoderma*, *Stereum*, *Phellinus*, and *Mycena* species are particularly important as parasitic species.

With this study of the macrofungi flora of Babadağ, we have added macrofungi species to the Turkish mycoflora.

## REFERENCES

- Breitenbach J, Kränzlin F (1984-2000). Fungi of Switzerland. Volume (No 1-6). Verlag Mykologia. Luzern.
- Bresinsky A, Besl H (1990). A Colour Atlas of Poisonous Fungi. Wolf Publishing. London.
- Çelik A, Uşak M, Gezer K, Türkoğlu A (2007). Macrofungi of Tavas (Denizli) District In Turkey, Pak. J. Bio. Sci. 10(22): 4087-4091.
- Ellis MB, Ellis JP (1990). Fungi without gills (Hymenomycetes and Gasteromycetes). Chapman and Hill. London.
- Gezer K (2000). Contribution to the Macrofungi Flora of Antalya Province, Turk. J. Bot. 24: 293-296.
- Gezer K, İşiloğlu M, Türkoğlu A, Allı H (2007). Macrofungi of Honaz Mountain (Denizli), Turk. J. Bot. 31: 253-261.
- İşiloğlu M, Watling R (1992). Macromycetes of Mediterranean Turkey, Edinb. J. Bot. 49(1): 99-121.
- Kirk PM, Cannon PF, David JC, Stalfers JA (2004). Authors of fungal names. CABI Bioscience, Wallingford. Electronic version: <http://www.indexfungorum.org/Names/Names.asp>
- Köse S, Gezer K, Gökler İ, Türkoğlu A (2006). Macrofungi of Bekilli District (Denizli). Turk J Bot 30: 267-272.
- Marchand A (1971-1986). Champignons du nord et du midi. Volume, No 1-9. Perpignan, Societe Mycologique des Pyrenees Mediterraneennes.
- Moser M (1983). Keys to Agarics and Boleti. Gustav Fischer Verlag, Stuttgart.
- Phillips R (1981). Mushrooms and other fungi of Great Britain and Europe. Pan Books Ltd, London.
- Solak M, İşiloğlu M, Kalmış E, Allı H (2007). Macrofungi of Turkey, Checklist, Volume-I, Bornova-İzmir: Üniversiteliler Ofset.
- Solak MH, İşiloğlu M, Gücin F, Gökler İ (1999). Macrofungi of Izmir Province. Turk. J. Bot. 23: 383-390.
- Türkoğlu A, Kanlık A, Gezer K (2007a). Macrofungi of Çameli District (Denizli-Turkey), Turk. J. Bot. 31: 551-557.
- Türkoğlu A, İşiloğlu M, Allı H, Solak MH (2007b). New Records for the Macrofungi of Turkey. Pak. J. Bio. Sci. 10(23): 4307-4310.