



## Macrofungal diversity of Araban (Gaziantep/Turkey) district

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### Abstract

The study was conducted on the macrofungi specimens collected from Araban district (Gaziantep-Turkey) between 2009-2011. As a result, 53 taxa belonging to 23 families and 42 genera in *Ascomycota* and *Basidiomycota* were identified. All of the taxa are new records for the district.

**Key words:** Biodiversity, macrofungi, Araban, Turkey

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### Araban (Gaziantep) yöresinin makromantar çeşitliliği

#### Özet

Çalışma 2009-2011 yılları arasında Araban (Gaziantep) yöresinden toplanan makromantar örnekleri üzerinde gerçekleştirilmiştir. Çalışma sonucunda, *Ascomycota* and *Basidiomycota* bölümlerine ait 23 familya ve 42 cins içinde yer alan 53 takson belirlenmiştir. Taksonların tamamı bölge için yeni kayıttır.

**Anahtar kelimeler:** Biyoçeşitlilik, makrofunguslar, Araban, Türkiye

#### 1. Introduction

Araban district is situated between 37°22'N- 37°31'N north latitude and 37°29'E- 38°05'East longitude. The district is bordered by Besni (Adıyaman) to the north, Halfeti and Bozova (Urfa) to the east, Yavuzeli (Gaziantep) to the south and Pazarcık (Kahramanmaraş) to the west (Figure 1).

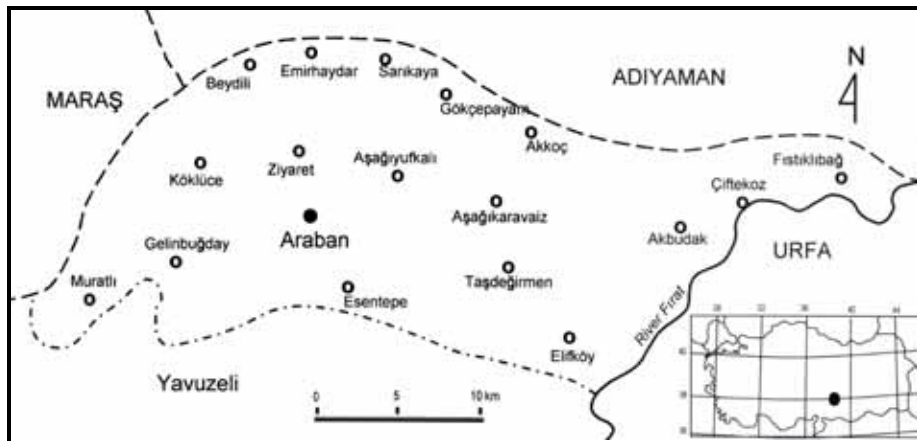


Figure 1. Map of the research area.

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The area has a Mediterranean climate (Akman, 1999) and falls mainly in Irano-Turanian phytogeographical sector within the holarctic floral kingdom. Main tree populations affecting the distribution of macrofungi in the region are the members of *Quercus* L., *Cedrus* Trem., *Pinus* L., *Prunus* L., *Populus* L. and *Salix* L.

Almost 2057 taxa of macromycetes occurring in Turkey have been reported till now with about 449 published studies (Solak et al., 2007; Sesli and Denchev, 2012; Akata, 2012; Akata and Kaya, 2012a,b; Akata et al., 2012). But no records have been given from the district so far. This study was carried out to determine the macrofungal diversity of the area and to make a contribution to the macromycota of Turkey.

## 2. Materials and methods

The material of this study was collected from different localities within the boundaries of Araban district (Gaziantep) during periodical field inventories between 2009-2011. Macroscopic characteristics, ecologic parameters and the local ethnofungal knowledge of the specimens were recorded and color photographs were taken at field. The macrofungi samples were carried to the fungarium, spore prints were obtained and they were dried in an air conditioned room and put in polyethylene bags as fungarium materials. Determination and measurement of microscopic features were performed according to mycological techniques in the fungarium of Karamanoğlu Mehmetbey University. Specimens were identified using Phillips (1981), Moser (1983), Breitenbach and Kränzlin (1984-2000), Buczacki (1989), Jordan (1995) and Bessette et al. (1997). The samples are kept in Karamanoğlu Mehmetbey University, Kamil Özdağ Science Faculty, Karaman, Turkey.

## 3. Results

As a result of this study, 53 taxa were identified. The systematics of the taxa are in accordance with Cannon & Kirk (2007) and Kirk et al. (2008), and they are listed in alphabetical order.

### Ascomycota

#### Pezizales

##### Helvellaceae Fr.

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

Araban, Ziyaret village, in *Pinus brutia* forest, 37°28' N - 37°45' E, 720 m, 21.02.2010, K. 7084.

2. *Helvella leucopus* Pers.

Araban, Eskialtıntaş village, on sandy soil on floodplain, 37°24' N - 37°42' E, 509 m, 24.02.2010, K. 7105.

##### Morchellaceae Rchb.

3. *Morchella rigida* (Krombh.) Boud.

Araban, Köklüce village, under *Populus* sp. on flood plain, 37°27' N - 37°37' E, 580 m, 09.04.2011, K. 7291.

##### Pezizaceae Dumort.

4. *Terfezia boudierii* Chatin

Araban, Esentepe village, steppe, 37°24' N - 37°42' E, 547 m, 07.04.2011, K. 7283.

##### Pyronemataceae Corda

5. *Geopora arenicola* (Lév.) Kers

Araban, Ziyaret village, among grass, 37°28' N - 37°45' E, 700 m, 05.05.2010, K. 7236.

### Basidiomycota

#### Agaricales

##### Agaricaceae Chevall.

6. *Agaricus campestris* L. var. *campestris*

Araban, Gelinbuğday village, among grass, 37°23' N - 37°33' E, 610 m, 15.11.2009, K. 6639.

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

Araban, Akbudak village, on soil among grass, 37°26' N - 37°56' E, 546 m, 08.11.2009, K. 6536; Eskialtıntaş village, 37°24' N - 37°42' E, 509 m, 24.02.2010, K. 7103.

8. *Cyathus olla* (Batsch) Pers.

Araban, Ziyaret village, on remains of grass, 37°28' N - 37°45' E, 620 m, 26.12.2009, K. 6939.

9. *Leucoagaricus leucothites* (Vittad.) Wasser  
Araban, Akbudak village, among grass, 37°26' N - 37°56' E, 546 m, 08.11.2009, K. 6537; Gelinbuğday village, 37°23' N - 37°33' E, 610 m, 15.11.2009, K. 6637.

10. *Lycoperdon molle* Pers

Araban, Muratlı village, in grass, 37°23' N - 37°33' E, 682 m, 15.11.2009, K. 6652; Yaylacık village, 37°29' N - 37°44' E, 860 m, 02.01.2010, K. 7013.

11. *Macrolepiota excoriata* (Schaeff.) Wasser  
Gelinbuğday village, in grass, 37°23' N - 37°33' E, 610 m, 15.11.2009, K. 6640.

12. *Macrolepiota mastoidea* (Fr.) Singer

Araban, Muratlı village, in grass, 37°23' N - 37°33' E, 682 m, 15.11.2009, K. 6653.

##### Bolbitiaceae Singer

13. *Conocybe apala* (Fr.) Arnolds

Araban, Dağdağancık village, in manured grass, 37°23' N - 37°36' E, 676 m, 15.11.2009, K. 6635; Eskialtıntaş village, 37°24' N - 37°42' E, 509 m, 24.02.2010, K. 7097; Köklüce village, 37°27' N - 37°37' E, 580 m, 09.04.2011, K. 7296.

14. *Conocybe deliquescens* Huskn. & Krisai

Araban, Gelinbuğday village, in grass, 37°23' N - 37°33' E, 610 m, 15.11.2009, K. 6642; Ziyaret village, 37°28' N - 37°45' E, 620 m, 26.12.2009, K. 6942.

##### Incertae cedis

15. *Panaeolus ater* (J.E. Lange) Kühner & Romagn.

Araban, Gelinbuğday village, in manured grass, 37°23' N - 37°33' E, 610 m, 26.12.2009, K. 6951.

16. *Panaeolus papilionaceus* var. *papilionaceus* (Bull.) Quéf.

Araban, Ziyaret village, on decaying manure among grass, 37°28' N - 37°45' E, 620 m, 07.04.2011, K. 7286.

**Entolomataceae** Kotl. & Pouzar

17. *Entoloma rusticoides* (Gillet) Noordel.

Araban, Gelinbuğday village, on soil among grass, 37°23' N - 37°33' E, 610 m, 26.12.2009, K. 6963.

**Inocybaceae** Jülich

18. *Inocybe bongardii* var. *pisciodora* (Donadini & Rioussset) Kuyper

Araban, Ziyaret village, in *Pinus brutia* forest, 37°28' N - 37°45' E, 630 m, 21.02.2010, K. 7081.

19. *Inocybe cincinnata* (Fr.) Quél. var. *cincinnata*  
Araban, Emirhaydar village, among leaf litter around *Quercus* sp., 37°30' N - 37°42' E, 850 m, 26.12.2009, K. 6914.

20. *Tubaria conspersa* (Pers.) Fayod

Araban, Emirhaydar village, among grass around *Quercus* sp., 37°30' N - 37°42' E, 850 m, 26.12.2009, K. 6908.

**Marasmiaceae** Roze ex Kühner

21. *Gymnopus dryophilus* (Bull.) Murrill

Araban, Muratlı village, among leaf litter in *Quercus* sp. forest, 37°23' N - 37°33' E, 682 m, 15.11.2009, K. 6651; Yaylacık village, 37°29' N - 37°44' E, 860 m, 02.01.2010, K. 7012; Akkoç village, 37°28' N - 37°47' E, 717 m, 02.01.2010, K. 7031.

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

Araban, Muratlı village, among leaf litter in *Quercus* sp. forest, 37°23' N - 37°33' E, 682 m, 15.11.2009, K. 6654; Emirhaydar village, 37°30' N - 37°42' E, 850 m, 26.12.2009, K. 6915.

23. *Macrocystidia cucumis* (Pers.) Joss.

Araban, Akkoç village, in grass, 37°28' N - 37°47' E, 717 m, 02.01.2010, K. 7035; Fıstıklıbağ village, 37°27' N - 38°04' E, 560 m, 02.01.2010, K. 7078.

24. *Marasmius anomalus* Peck

Araban, Taşdeğirmen village, in grass, 37°25' N - 37°48' E, 503 m, 02.01.2010, K. 7065.

25. *Marasmius wynneae* Berk. & Broome

Araban, Emirhaydar village, among leaf litter around *Quercus* sp., 37°30' N - 37°42' E, 850 m, 26.12.2009, K. 6020.

**Mycenaceae** Roze

26. *Mycena pura* (Pers.) P. Kumm.

Araban, Beydili village, among leaf litter around *Quercus* sp., 37°20' N - 37°39' E, 912 m, 26.12.2009, K. 6904; Muratlı village, 37°23' N - 37°33' E, 682 m, 27.12.2009, K. 6969.

**Pleurotaceae** Kühner

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

Araban, Ziyaret village, on *Salix* sp. stump, 37°28' N - 37°45' E, 620 m, 26.12.2009, K. 6938; Akkoç village, 37°28' N - 37°48' E, 758 m, 02.01.2010, K. 7047.

**Pluteaceae** Kotl. & Pouzar

28. *Pluteus romellii* (Britzelm.) Sacc.

Araban, Fıstıklıbağ village, in grass around *Populus* sp. stump, 37°27' N - 38°04' E, 560 m, 24.02.2010, K. 7112.

29. *Volvariella gloiocephala* (DC.) Boekhout & Enderle

Araban, Gelinbuğday village, among grass, 37°23' N - 37°33' E, 610 m, 26.12.2009, K. 6953; Gökçepayam village, 37°29' N - 37°45' E, 826 m, 02.01.2010, K. 7017; Aşağıkaravaiz village, 37°26' N - 37°47' E, 532 m, 02.01.2010, K. 7055; Karababa village, 37°25' N - 37°50' E, 514 m, 02.01.2010, K. 7070.

**Psathyrellaceae** Vilgalys, Moncalvo & Redhead

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

Araban, Fıstıklıbağ village, on damp soil around *Populus* sp., 37°27' N - 38°04' E, 560 m, 24.02.2010, K. 7111.

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

Araban, Gelinbuğday village, around *Populus* sp. remains, 37°24' N - 37°34' E, 560 m, 15.11.2009, K. 6636; Çiftekoz village, 37°26' N - 37°57' E, 519 m, 02.01.2010, K. 7074.

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

Araban, Köklüce village, on soil around *Populus* sp. remains, 37°27' N - 37°37' E, 580 m, 11.12.2009, K. 6846.

33. *Coprinopsis nivea* (Pers.) Redhead, Vilgalys & Moncalvo

Araban, Eskialtıntaş village, on cow manure, 37°24' N - 37°42' E, 509 m, 24.02.2010, K. 7100.

34. *Psathyrella bipellis* (Quél.) A.H. Sm.

Araban, Akkoç village, among grass around *Quercus* sp., 37°28' N - 37°47' E, 717 m, 02.01.2010, K. 7024.

35. *Psathyrella candolleana* (Fr.) Maire

Araban, Muratlı village, around *Quercus* sp., 37°23' N - 37°33' E, 682 m, 27.12.2009, K. 6985.

36. *Psathyrella lutensis* (Romagn.) M.M. Moser

Araban, Dağdağancık village, 37°25' N - 37°37' E, 532 m, 15.11.2009, K. 6634.

**Schizophyllaceae** Quél.

37. *Schizophyllum commune* Fr.

Araban, Fıstıklıbağ village, on decaying wood, 37°27' N - 38°04' E, 560 m, 02.01.2010, K. 7080.

**Strophariaceae** Singer & A.H. Sm.

38. *Agrocybe cylindracea* (DC.) Maire

Araban, Köklüce village, on decaying *Populus* sp. stump, 37°27' N - 37°37' E, 580 m, 11.12.2009, K. 6847.

39. *Galerina graminea* (Velen.) Kühner

Araban, Akkoç village, among moss, 37°28' N - 37°47' E, 717 m, 02.01.2010, K. 7033.

40. *Psilocybe coprophila* (Bull.) P. Kumm.

Araban, Ziyaret village, on decaying dung, 37°28' N - 37°45' E, 620-720 m, 11.12.2009, K. 6626.

41. *Stropharia coronilla* (Bull.) Quél.

Araban, Muratlı village, in grass, 37°23' N - 37°33' E, 682 m, 15.11.2009, K. 6655; Gelinbuğday village, 37°23' N - 37°33' E, 610 m, 26.12.2009, K. 6947; Akkoç village, 37°28' N - 37°47' E, 717 m, 02.01.2010, K. 7045.

**Tricholomataceae** R. Heim ex Pouzar

42. *Arrhenia rickenii* (Hora) Watling

Akkoç village, on moss covered ground, 37°28' N - 37°47' E, 717 m, 02.01.2010, K. 7040.

43. *Arrhenia spathulata* (Fr.) Redhead  
Akkoç village, on moss, 37°28' N - 37°47' E, 717 m, 02.01.2010, K. 7036.

44. *Lepista nuda* (Bull.) Cooke  
Araban, Emirhaydar village, on leaf litter around *Quercus* sp., 37°30' N - 37°42' E, 850 m, 26.12.2009, K. 6922; Muratlı village, 37°23' N - 37°33' E, 682 m, 27.12.2009, K.6971; Akkoç village, 37°28' N - 37°47' E, 717 m, 02.01.2010, K. 7027.

45. *Melanoleuca excissa* (Fr.) Singer  
Araban, Ziyaret village, in pasture, 37°28' N - 37°45' E, 620-720 m, 11.12.2009, K. 6844.

46. *Pseudoclitocybe cyathiformis* (Bull.) Singer  
Araban, Gelinbuğday village, among grass, 37°23' N - 37°33' E, 610 m, 26.12.2009, K. 6952.

47. *Tricholoma terreum* (Schaeff.) P. Kumm.  
Araban, Emirhaydar village, on leaf litter around *Quercus* sp., 37°30' N - 37°42' E, 850 m, 26.12.2009, K. 6927; Yaylacık village, 37°29' N - 37°44' E, 860 m, 02.01.2010, K. 7007.

#### Boletales

##### *Rhizopogonaceae* Gäum. & C.W. Dodge

48. *Rhizopogon luteolus* Fr. & Nordholm.  
Araban, Ziyaret village, in *Pinus brutia* forest, 37°28' N - 37°45' E, 620-720 m, 11.12.2009, K. 6843.

##### *Suillaceae* Besl & Bresinsky

49. *Suillus luteus* (L.) Roussel  
Araban, Ziyaret village, in *Pinus brutia* forest, 37°28' N - 37°45' E, 620-720 m, 11.12.2009, K. 6842.

#### Hymenochaetales

##### *Hymenochaetaceae* Donk

50. *Phellinus pomaceus* (Pers.) Maire  
Araban, Ziyaret village, On *Prunus* sp. trunk, 37°28' N - 37°45' E, 620-720 m, 15.11.2009, K. 6627.

#### Polyporales

##### *Meruliaceae* P. Karst.

51. *Bjerkandera adusta* (Willd.) P. Karst.  
Araban, Fıstıklıbağ village, on decaying *Populus* sp. stump, 37°27' N - 38°04' E, 560 m, 02.01.2010, K. 7079.

##### *Polyporaceae* Fr. Ex Corda

52. *Lentinus tigrinus* (Bull.) Fr.  
Araban, Köklüce village, around *Salix* sp. stump, 37°27' N - 37°37' E, 580 m, 09.04.2011, K. 7293.

#### Russulales

##### *Stereaceae* Pilát

53. *Stereum hirsutum* (Willd.) Pers.  
Araban, Gökçebayam village, an *Quercus* sp. stump, 37°29' N - 37°45' E, 826 m, 02.01.2010, K. 7020.

## 4. Discussion

In Araban district 53 taxa of macrofungi, belonging to 23 families and 42 genera were determined. All of the taxa are new for the region. The most crowded families in the district are *Agaricaceae* and *Psathyrellaceae* with seven members. They are followed by *Tricholomataceae*, *Marasmiaceae*, *Strophariaceae* and *Inocybaceae* with six, five, four and three taxa respectively. Three families, *Bolbitiaceae*, *Helvellaceae* and *Pluteaceae* contained two taxa while the rest of 13 families are represented with only one taxon in the region.

Twenty five (47.2%) of the 53 taxa are edible while 20 (37.7%) are inedible. Among 25 edible taxa, five of them (*Agaricus campestris* var. *campestris*, *Coprinus comatus*, *Pleurotus ostreatus*, *Terfezia boudierii* and *Volvariella gloiocephala*) are collected and consumed in the region. Tough eight (15.1%) poisonous mushrooms exist in the district, no incidents were recorded officially in the research area.

The taxa determined in the district reflect similarity with those of the studies conducted its close environs. These studies and the similarity percentages are given in Table 1. The reason of this similarity may be the common climate and vegetation.

Table 1. Similarity percentages of neighboring studies with Araban district

|                        | Number of identical taxa | Total taxa | Similarity percentage (%) |
|------------------------|--------------------------|------------|---------------------------|
| Kaya et al. (2004)     | 25                       | 56         | 44.6                      |
| Işiloğlu & Öder (1995) | 18                       | 54         | 33.3                      |
| Kaya (2005)            | 28                       | 77         | 36.4                      |
| Kaya (2009)            | 47                       | 222        | 88.7                      |
| Uzun et al. (2009)     | 22                       | 78         | 28.2                      |
| Kaya et al. (2010)     | 38                       | 46         | 82.6                      |

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