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## Macrofungi of Alanya District

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**Abstract:** The material of this study comprises macrofungi specimens which were collected from different localities in Alanya district in the Mediterranean region between 1999 and 2001. As a result of field and laboratory studies 188 taxa belonging to two classes and 38 families were identified. Eleven taxa belonged to *Ascomycetes* and 177 to *Basidiomycetes*.

**Key Words:** Macrofungi, flora, Alanya, Turkey

### Alanya Yöresi Makrofungusları

**Özet:** Bu çalışmanın materyali 1999-2001 yıllarında Akdeniz bölgesinin Alanya yöresinden farklı lokalitelerden toplanan makromantar örneklerinden oluşmaktadır. Laboratuvar ve arazi çalışmaları sonucu 2 sınıf ve 28 familyaya ait 188 takson belirlenmiştir. 11 takson *Ascomycetes* ve 177 takson da *Basidiomycetes*'e aittir.

**Anahtar Sözcükler:** Makrofunguslar, flora, Alanya, Türkiye

### Introduction

Macrofungi studies have long been of interest to scientists as well as the public due to their important roles in human life, such as their beneficial and harmful effects on forests, their use in pharmacology and the mass production of cultivated fungi in the food industry, as well as their vital role in biodegradation (Stojchev et al. 1998).

Despite the fact that a great deal of work has been conducted on Turkish macrofungi flora (Doğan et al., 2000; Kaşık et al., 2000; Kaşık & Öztürk 2000; Öztürk et al., 2000) there is still much to be done across all regions of Turkey.

Alanya district was chosen as a research area, because its climatic conditions, plant distributions and field features are very suitable for the growth of macrofungi. The field study was carried out chiefly in the autumn and spring, since during these periods the climatic conditions are most suited to carphophore formation.

So far two investigations have been made in the research area by Işiloğlu & Öder (1995) and by Gezer (2000). In the first study two species and in the second study 38 species of macrofungi were determined in Alanya district.

The aim of this study was to determine macrofungi species in the research area and thus provide more data on the macrofungi flora of Turkey.

The Alanya region covers 1545 km<sup>2</sup> (Figure 1). The city is surrounded by the Mediterranean Sea in the south, Antalya in the west, Mersin in the east and Konya in the north. The climate of Alanya is of a humid and semi-humid Mediterranean type. The annual rainfall in the region is 1084.4 mm. The annual average temperature is 18.8 °C. There are a number of streams in the region. The most important stream is the Dimçayı.

In the study area, the leathery leafed 2-3 m high, dense scrub of evergreen shrubs is that of true macchie and it is most widespread. It extends from the coast up to an altitude of 750 m. The coniferous forests are represented mainly by two species, *Pinus brutia* Ten at 0-900 m and *Pinus nigra* J.F. Arn. subsp. *nigra* var. *caramanica* (Loudon) Rehder at 900-1900 m in the research area. The vegetation of these localities is mixed woodland with conifers predominant, *Pinus brutia* Ten, *Quercus petraea* (Mattuschka) Liebl., *Q. pubescens* Willd., and *Q. cerris* L. The pine and oaks along with *Abies cilicica* (Ant. & Kotschy) Carr. subsp. *isaurica* Coode & Cullen,

*Cedrus libani* A.Rich., *Salix alba* L. and *Populus L. spp.* constitute the main ectomycorrhizal hosts. Other dominant plants are *Cupressus sempervirens* L., *Laurus nobilis* L., *Crateagus monogyna* Jacq., *Myrtus communis* L., *Pistacia terebinthus* L., *P. lentiscus* L., and *Nerium oleander* L.

### Materials and Methods

Macrofungi samples were removed from the ground with great care to avoid damage to the base and other parts (stipe, hymenium etc.). Soil was removed using a soft brush. Samples were placed in separate wicker containers to avoid mixing. Colour, locality and characteristics of habitat etc. were noted during the collection. Insecticide spray was used to protect fresh samples from insect larvae damage. In the laboratory,

morphological features and the spore properties of dry and fresh macrofungi specimens were especially studied and they were identified using identification keys (Watling, 1973). The orders were determined using Moser 1983 and other related literature (Krieger, 1967; Phillips, 1981; Watling, 1982; Michael et al, 1983-1987; Breitenbach & Kränzlin, 1984-1995; Henning & Kreisel, 1987; Pegler, 1987; Dähncke, 1988, 1993; Watling & Gregory, 1989; Bresinsky & Besl, 1990; Ellis & Ellis, 1990; Grünert & Grünert, 1984, 1991; Pacioni, 1993; Jordan, 1996; Smith & Smith 1996; Gerhardt, 1997; Pace, 1998). After macrofungi samples were identified and dried, they were preserved in polythene bags containing 5 g thymol crystals.

All macrofungi samples are kept at Selçuk University, Mushroom Fungarium Application and Research Centre, in Konya.



Figure 1. Map of Alanya region.

## Results

### Ascomycetes

#### Sphaeriaceae

1. *Daldinia concentrica* (Bolt.: Fr.) Ces. & De Not.

Yeşilköy, 03.12.1999, Doğan, Aktaş 348.

#### Dermateaceae

2. *Tapesia fusca* (Pers.: Mèrat) Fuckel

Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1156.

#### Helotiaceae

3. *Bisporella citrina* (Batsch: Fr.) Korf & Carpenter

Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1221.

#### Morchellaceae

4. *Morchella esculenta* Pers.: St. Amans var. *esculenta* Pers.: St. Amans

Çukur plateau, 20.05.2001, Doğan, Öztürk, Kaşık, 1350.

5. *Morchella esculenta* Pers.: St. Amans var. *vulgaris* Pers.

Gevne, Çayarası district, 05.05.2001, Doğan, Aktaş 1160.

#### Helvellaceae

6. *Helvella acetabulum* (L.) Quél.

Gevne, Çayarası district, 05.05.2001, Doğan, Aktaş 1170.

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

Syn: *Paxina leucomelas* (Pers.) O Kuntze

*Acetabula leucomelas* (Pers.) Sacc.

Tepebaşı district, 20.05.2001, Doğan, Öztürk, Kaşık 1353, above Çakallar, Süzek, 05.02.2000, Doğan, Aktaş 356, Avsallar-İncekum, 04.03.2000, Doğan, Aktaş 434.

#### Pezizaceae

8. *Peziza amphora* Quél.

Tepebaşı district, 20.05.2001, Doğan, Öztürk, Kaşık, 1353.

9. *Peziza granulosa* Schum.: Fr.

Yeşilköy, 03.12.1999, Doğan, Aktaş 342, 05.02.2000, Doğan, Aktaş 365, Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1152, Avsallar İncekum district, 04.03.2000, Doğan, Aktaş 425.

10. *Sarcosphaera crassa* (Santi: Steudel.) Pouz.

Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1119.

#### Humariaceae

11. *Caloscypha fulgens* (Pers.) Boud.

Gevne, Çayarası district, 05.05.2001, Doğan, Aktaş 1162.

### Basidiomycetes

#### Tremellaceae

12. *Exidia glandulosa* Fr.

Syn: *Exidia plana* (Wigg.: Schleich.) Donk

Avsallar, İncekum district, 04.03.2000, Doğan, Aktaş 430.

13. *Tremella mesenterica* Retz.: Hook.

Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1204.

#### Cantharellaceae

14. *Cantharellus cibarius* Fr.

Kızılcaşehir, 06.02.2000, Doğan, Aktaş 403, Akçatı, Çukur plateau, 20.05.2001, Doğan, Öztürk, Kaşık 1344.

#### Clavariaceae

15. *Clavariadelphus pistillar* (Fr.) Donk.

Merap district, 20.01.2001, Doğan, Aktaş 1127.

#### Hydnaceae

16. *Hydnum repandum* L.: Fr.

Sabırlar district, 05.02.2000, Doğan, Öztürk, Kaşık 898, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 415, Doğan, Öztürk, Kaşık 927.

17. *Hydnum rufescens* (Fr.) Barla

Kızılcaköy, 05.02.2000, Doğan, Öztürk, Kaşık 924, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 414, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1210.

#### Corticaceae

18. *Hyphoderma praetermissum* (P. Karst.) Erikss. & Strid

Merap district, 20.01.2001, Doğan, Öztürk, Kaşık 1190.

19. *Phanerochaete sordida* (Karst.) Erikss. & Ryv.

Syn: *Peniophora cromea* Bres.

Yeşilköy, 03.12.1999, Doğan, Aktaş 343, Avsallar, İncekum district, 04.03.2000, Doğan, Aktaş 422, Kızılcaşehir, 10.12.2000, Doğan, Öztürk, Kaşık 1043.

20. *Pulcherricium caeruleum* (Fr.) Parm.

Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1220.

21. *Stereum gausapatum* (Fr.) Fr.

Yeşilköy, 03.12.1999, Doğan, Aktaş 316, Avsallar, İncekum district, 04.03.2000, Doğan, Aktaş 423.

22. *Stereum hirsutum* (Willd.: Fr.) S.F.Gray

Akçatı village, Çukur plateau, 10.12.2000, Doğan, Öztürk, Kaşık 1058, Çakallar-Süzek district, 05.02.2000, Doğan, Aktaş 350, Çakallar, 05.03.2000, Doğan, Aktaş 442, Merap district, 20.01.2001, Doğan, Aktaş 1121, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1227.

23. *Stereum ochraceoflavum* (Schw.) Ellis

Syn: *Stereum rameale* (Pers.: Fr.) Burt.

Sabırlar district, 05.02.2000, Doğan, Öztürk, Kaşık 902, Avsallar, İncekum district, 04.03.2000, Doğan, Aktaş 424, 428, Sabırlar district, 05.03.2000, Doğan, Aktaş 445.

24. *Stereum rugosum* (Pers.: Fr.) Fr.

Sabırlar district, 05.02.2000, Doğan, Öztürk, Kaşık 903.

#### Thelephoraceae

25. *Boletopsis leucomelaena* Pers.

Syn: *Boletopsis subsquamosa* (Fr.) Kotl. & Pouz.

Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık, 1134.

26. *Hydnellum conrescens* (Pers.: Schw.) Banker

Syn: *Hydnellum zonatum* (Fr.) Karst.

Yeşilköy, 05.02.2000, Doğan, Aktaş 368.

27. *Phellodon niger* (Fr.: Fr.) Karst.

Yeşilköy, 05.02.2000, Doğan, Aktaş 366, 05.03.2000, Doğan, Aktaş 446, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 410, above Alarahan road, 20.01.2000, Doğan, Öztürk, Kaşık 1124.

28. *Phellodon tomentosus* (L.: Fr.) Banker

Syn: *Calodon tomentosus* (L.: Fr.) Maire

Yeşilköy, 05.02.2000, Doğan, Öztürk, Kaşık 908, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 409.

#### Hymenochaetaceae

29. *Hymenochaete rubiginosa* (Dicks.: Fr.) Lév.

Sabırlar district, 05.03.2000, Doğan, Aktaş 443.

30. *Phellinus conchatus* (Fr.) Quél.

Gıvrasıoğlu plateau, Şahinler çeşmesi, 27.05.2000, Doğan, Aktaş 751.

31. *Phellinus pini* (Brot.: Fr.) L.M.Ames

Çukur plateau, 10.12.2000, Doğan, Aktaş 1116.

32. *Phellinus robustus* (Karst.) Bourd. & Galz.

Yeşilköy, 03.12.1999, Doğan, Aktaş 344.

33. *Phellinus torulosus* (Pers.) Bourd. & Galz.

Yeşilköy, 03.12.1999, Doğan, Aktaş 315, Sariağalar, 20.01.2000, Doğan, Öztürk, Kaşık 1109, Sabırlar district, 05.02.2000, Doğan, Öztürk, Kaşık 905, Kızılcaşehir, 10.12.2000, Doğan, Öztürk, Kaşık 1044.

#### Ganodermataceae

34. *Ganoderma applanatum* (Pers.: Wallr.) Pat.

Dimçayı, 05.03.2000, Doğan, Aktaş 452, Gıvrasıoğlu plateau, 27.05.2000, Doğan, Aktaş 750, Dimçayı, 21.01.2000, Doğan, Öztürk, Kaşık 1196, 1197.

35. *Ganoderma carnosum* Pat.

Dimçayı, 05.03.2000, Doğan, Aktaş 449.

36. *Ganoderma lucidum* (Fr.) P.Karst.

Dimçayı, 05.03.2000, Doğan, Aktaş 450, Merap district, 20.01.2001, Doğan, Aktaş 1126.

#### Polyporaceae

37. *Bjerkandera adusta* (Fr.) P.Karst.

Syn: *Gloeoporus adustus* (Willd.: Fr.) Pilát

Çakallar-Süzek district, 03.12.1999,

Doğan, Aktaş 327, 05.02.2000, Doğan, Aktaş 351, Dimçayı, 05.03.2000, Doğan, Aktaş 448, 454, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1199.

38. *Corioloopsis gallica* (Fr.) Ryv.

Syn: *Trametella extenuata* (Dur. & Mont.) Domanski

Dimçayı, 05.03.2000, Doğan, Aktaş 455, 21.01.2001, Doğan, Öztürk, Kaşık 1118.

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

Kızılcaşehir, 06.02.2000, Doğan, Öztürk, Kaşık 930, Dimçayı, 05.03.2000, Doğan, Aktaş 457, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1195.

40. *Gloeophyllum trabeum* (Pers.: Fr.) Murrill

Syn: *Lenzites trabea* (Pers.: Fr.) Fr.

Yeşilköy, 03.12.1999, Doğan, Aktaş 322.

41. *Gloeophyllum odoratum* (Wulf.: Fr.) Imazeki

Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1125.

42. *Lenzites betulina* (L.: Fr.) Fr.

Syn: *Trametes betulina* (L.: Fr.) Pil.

Merap district, 20.01.2001, Doğan, Aktaş 1124.

43. *Perenniporia fraxinea* (Fr.) Ryv.

Syn: *Fomitopsis cytisina* (Berk.) Bond. & Sing.

*Haploporus cystisinus* (Berk.) Dom.

Dimçayı, 05.03.2000, Doğan, Aktaş 451.

44. *Polyporus arcularius* Batsch: Fr.

Tepepinar district, 20.05.2001, Doğan, Öztürk, Kaşık 1361.

45. *Polyporus brumalis* Fr.

Tepebaşı district, 20.05.2001, Doğan, Öztürk, Kaşık 1360.

46. *Postia stiptica* (Pers.: Fr.) Jül.

Syn: *Tyromyces stipticus* (Pers.: Fr.) Kotl. & Pouz.

Yeşilköy, 03.12.1999, Doğan, Aktaş 349, Çukur plateau, 10.12.2000, Doğan, Aktaş 1101.

47. *Schizopora paradoxa* (Schrad.: Fr.) Donk.

Syn: *Polyporus versiporus* Pers.

Avsallar, İncekum district, 04.03.2000, Doğan, Aktaş 426, Çukur plateau, 20.05.2001, Doğan, Öztürk, Kaşık 1343.

48. *Trametes hirsuta* (Wulf.: Fr.) Pil.

Gıvrasıoğlu plateau, 27.05.2000, Doğan, Aktaş 755, Dimçayı, 21.01.2001, Doğan, Öztürk, Kaşık 1198.

49. *Trametes multicolor* (Schaeff.) Jül.

Sabırlar district, 05.02.2000, Doğan, Öztürk, Kaşık 899.

50. *Trametes pubescens* (Schum.: Fr.) Pil.

Yeşilköy, 05.02.2000, Doğan, Aktaş 369.

51. *Trametes suaveolens* (L.: Fr.) Fr.

Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1203.

52. *Trametes versicolor* (Fr.) Pil.

Dimçayı, 05.03.2000, Doğan, Aktaş 453, Merap district, 20.01.2001, Doğan, Aktaş 1120, Çukur plateau, 20.05.2001, Doğan, Öztürk, Kaşık 1342.

53. *Trichaptum abietinum* (Fr.) Ryv.

Syn: *Hirschioporus abietinus* (Dicks.: Fr.) Donk

Sabırlar district, 05.03.2000, Doğan, Aktaş 444.

54. *Trichaptum fuscoviolaceum* (Ehrenb.: Fr.) Ryv.

Avsallar, İncekum district, 04.03.2000, Doğan, Aktaş 429.

#### Phallaceae

55. *Phallus impudicus* L.: Pers.

Merap district, 20.01.2001, Doğan, Aktaş 1139.

#### Nidulariaceae

56. *Cyathus olla* Batsch: Pers.

Alarahan, 20.01.2001, Doğan, Öztürk, Kaşık 1150, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1247.

#### Schizopyllaceae

57. *Schizophyllum commune* Fr.: Fr.

Çakallar-Süzek district, 03.12.1999, Doğan, Aktaş 328, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1224, 1235.

**Geastraceae**58. *Geastrum fimbriatum* Fr.

Gevne Çayarası district, 05.05.2001, Doğan, Aktaş 1161.

59. *Geastrum triplex* Jungh.

Akçatı village, 06.02.2000, Doğan, Aktaş 392, Merap district, 20.01.2001, Doğan, Öztürk, Kaşık 1188.

60. *Geastrum pectinatum* Pers.

Kızılcaşehir, 10.12.2000, Doğan, Öztürk, Kaşık 1040, Çukur plateau, Doğan, Öztürk, Kaşık 1052.

**Lycoperdaceae**61. *Calvatia utriformis* (Bull.: Pers.) Jaap

Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1225.

62. *Lycoperdon lividum* Pers.Syn: *Lycoperdon spadiceum* Pers.

Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1240.

63. *Lycoperdon molle* Pers.

Kızılcaşehir, 10.12.2000, Doğan, Öztürk, Kaşık 1038.

64. *Lycoperdon perlatum* Pers.

Kızılcaşehir, 10.12.2000, Doğan, Öztürk, Kaşık 1037, Çukur plateau, Doğan, Öztürk, Kaşık 1039, Sabırlar district, 05.02.2000, Doğan, Aktaş 358, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 388, Merap district, 20.01.2001, Doğan, Aktaş 1137, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1212, 1242.

65. *Lycoperdon umbrinum* Pers.: Pers.

Kızılcaşehir, 06.02.2000, Doğan, Aktaş 404.

**Rhizopogonaceae**66. *Rhizopogon luteolus* Fr.

Yeşilköy, 05.02.2000, Doğan, Aktaş 375.

67. *Rhizopogon roseolus* (Fr.: Fr.) Th. Fr.

Çukur plateau, 10.12.2000, Doğan, Aktaş 1094, Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1123, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 390, Yeşilköy, 04.03.2000, Doğan, Aktaş 435, Avsallar,

İncekum district, Doğan, Aktaş 437, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1245.

**Boletaceae**68. *Boletus luridus* Schaeff.: Fr.

Gıvrasıoğlu plateau, 27.05.2000, Doğan, Aktaş 758.

69. *Boletus radicans* Pers.: Fr.

Gıvrasıoğlu plateau, 27.05.2000, Doğan, Aktaş 747.

70. *Suillus granulatus* (L.: Fr.) O Kuntze

Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1138, Sarıağalar, Doğan, Öztürk, Kaşık 1073.

71. *Suillus grevillei* (Klotzch: Fr.) Sing.

Yeşilköy, 03.12.1999, Doğan, Aktaş 317, Çakallar-Süzek district, 05.02.2000, Doğan, Aktaş 359, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 377, Çukur plateau, 10.12.2000, Doğan 1091, 1110, Merap district, 20.01.2001, Doğan, Aktaş 1133, Akçatı village, 21.01.2001, Doğan, Aktaş 1230.

72. *Suillus luteus* (L.) S.F.Gray

Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1139.

73. *Suillus placidus* (Bon.) Sing.

Yeşilköy, 03.12.1999, Doğan, Aktaş 334.

**Paxillaceae**74. *Paxillus involutus* (Batsch) Fr.

Yeşilköy, 03.12.1999, Doğan, Aktaş 335, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 405.

**Gomphidiaceae**75. *Gomphidius helveticus* (Pil.) Kuthan & Sing.

Yeşilköy, 05.02.2000, Doğan, Aktaş 379.

76. *Gomphidius maculatus* Fr.

Kızılcaşehir, 06.02.2000, Doğan, Öztürk, Kaşık 917.

77. *Gomphidius rutilis* (Schaeff.: Fr.) Lund & Nannf.Syn: *Chroogomphus rutilis* (Fr.) O.K.Miller

Yeşilköy, 03.12.1999, Doğan, Aktaş

318, Çukur plateau, 10.12.2000, Doğan, Aktaş 1092, Merap district, 20.01.2000, Doğan, Öztürk, Kaşık 1185.

**Pleurotaceae**78. *Lentinus tigrinus* (Bull.: Fr.) Fr.

Yeşilköy, 03.12.1999, Doğan, Aktaş 345, Şifalı su district, 05.05.2001, Doğan, Aktaş 1166.

**Hygrophoraceae**79. *Camarophyllus niveus* (Scop.: Fr.) Wünsche

Sarıoğlu, 20.01.2000, Doğan, Öztürk, Kaşık 1077, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1218.

80. *Camarophyllus virgineus* (Wulf.: Fr.) Karst.

Çakallar-Süzek district, 05.02.2000, Doğan, Aktaş 362, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 384.

81. *Hygrophorus discoideus* (Pers.: Fr.) Fr.

Merap district, 20.01.2000, Doğan, Öztürk, Kaşık 1191.

82. *Hygrophorus eburneus* (Bull.: Fr.) Fr.

Çukur plateau, 10.12.2000, Doğan, Aktaş 1109, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1215.

83. *Hygrophorus ligatus* Fr.

Yeşilköy, 03.12.1999, Doğan, Aktaş 338.

84. *Hygrophorus pudorinus* (Fr.) Fr.

Akçatı village, 21.05.2001, Doğan, Öztürk, Kaşık 1248.

**Tricholomataceae**85. *Armillaria mellea* (Vahl.: Fr.) P.Kumm.

Çukur plateau, 10.12.2000, Doğan, Öztürk, Kaşık 1065.

86. *Baespora myosura* (Fr.: Fr.) Sing.Syn: *Collybia conigena* (Pers.: Fr.) Kumm.

Çakallar-Süzek district, 5.12.2000, Doğan, Aktaş 364.

87. *Clitocybe bresadoliana* Sing.

Kızılcaşehir, 06.02.2000, Doğan, Aktaş 401, Avsallar, İncekum district, 04.03.2000, Doğan, Aktaş 431.



88. *Clitocybe candicans* (Pers.: Fr.) Kumm.  
Sariođlan, 20.01.2000, Dođan, Öztürk, Kaşık 1112.
89. *Clitocybe clavipes* (Pers.: Fr.) Kumm.  
Merap district, 20.01.2001, Dođan, Aktaş 1138, Akçatı village, 21.01.2001, Dođan, Öztürk, Kaşık 1208.
90. *Clitocybe costata* J.G.Kühn. & Romagn  
Çukur plateau, 10.12.2000, Dođan, Aktaş 1100, Alarahan, 20.01.2000, Dođan, Öztürk, Kaşık 1140, Merap district, 20.01.2001, Dođan, Öztürk, Kaşık 1159.
91. *Clitocybe dealbata* (Sow.: Fr.) Kumm.  
Çukur plateau, 10.12.2000, Dođan, Aktaş 1071, Akçatı village, 21.01.2001, Dođan, Öztürk, Kaşık 1226.
92. *Clitocybe foetens* Melot  
Merap district, 20.01.2001, Dođan, Öztürk, Kaşık 1186.
93. *Clitocybe fragrans* (With.: Fr.) Kumm.  
Merap district, 20.01.2001, Dođan, Öztürk, Kaşık 1163.
94. *Clitocybe obsoleta* (Batsch) Quéf.  
Alarahan, 20.01.2000, Dođan, Öztürk, Kaşık 1127, 1142.
95. *Clitocybe odora* (Bull.: Fr.) Kumm.  
Merap district, 20.01.2001, Dođan, Aktaş 1144.
96. *Clitocybe phyllophila* (Fr.) Kumm.  
Yeşilköy, 05.02.2000, Dođan, Öztürk, Kaşık 910, Merap district, 20.01.2001, Dođan, Öztürk, Kaşık 1170.
97. *Collybia confluens* (Pers.: Fr.) Kumm.  
Çukur plateau, 10.12.2000, Dođan, Öztürk, Kaşık 1060.
98. *Collybia dryophila* (Bull.: Fr.) Kumm.  
Merap District, 20.01.2001, Dođan, Öztürk, Kaşık 1166, Akçatı village, 20.05.2001, Dođan, Öztürk, Kaşık 1339, Akçatı village, 21.01.2001, Dođan, Öztürk, Kaşık 1214.
99. *Cystoderma granulorum* (Batsch : Fr.) Fayod  
Çukur plateau, 10.12.2000, Dođan, Öztürk, Kaşık 1046, Merap district, 20.01.2001, Dođan, Öztürk, Kaşık 1192.
100. *Laccaria bicolor* (Mre.) Ort.  
Kızılcaşehir, 06.02.2000, Dođan, Aktaş 385, Çukur plateau, 10.12.2000, Dođan, Öztürk, Kaşık 1070, Çukur plateau, Şahinler çeşmesi, 10.12.2000, Dođan, Aktaş 1119.
101. *Laccaria laccata* (Scop.: Fr.) Berk. & Br.  
Çukur plateau, 10.12.2000, Dođan, Aktaş 1117, Kızılcaköy, 06.02.2000, Dođan, Öztürk, Kaşık 921, Kızılcaşehir, Dođan 387, Merap district, 20.01.2001, Dođan, Öztürk, Kaşık 1168, Akçatı village, 21.01.2001, Dođan, Öztürk, Kaşık 1231.
102. *Lepista nuda* (Bull.: Fr.) Cke.  
Alarahan, 20.01.2000, Dođan, Öztürk, Kaşık 1120.
103. *Lepista sordida* (Schum.: Fr.) Sing.  
Sarıađalar, 20.01.2000, Dođan, Öztürk, Kaşık 1099.
104. *Marasmius epiphyllus* (Pers.: Fr.) E.A.Fr.  
Alarahan, 20.01.2000, Dođan, Öztürk, Kaşık 1151, Çakallar, 05.03.2000, Dođan, Aktaş 441.
105. *Marasmius oreades* (Bolt.: Fr.) Fr.  
Alarahan, 20.01.2000, Dođan, Öztürk, Kaşık 1148.
106. *Melanoleuca cognata* (Fr.) Konr. & Maubl.  
Şifalı su district, 05.05.2001, Dođan, Aktaş 1168.
107. *Melanoleuca graminicola* (Vel.) Kühn. & Mre.  
Çukur plateau, 10.12.2000, Dođan, Aktaş 1078, Alarahan, 20.01.2000, Dođan, Öztürk, Kaşık 1121, Yeşilköy, 05.02.2000, Dođan, Aktaş 374.
108. *Melanoleuca stridula* (Fr.) Sing.  
Akçatı village, 21.01.2001, Dođan, Öztürk, Kaşık 1209, Çukur plateau, 10.12.2000, Dođan, Aktaş 1073.
109. *Micromphale brassicolens* (Romagn.) Ort.  
Yeşilköy, 03.12.1999, Dođan, Aktaş 347.
110. *Micromphale foetidum* (Sow.: Fr.) Sing.  
Alarahan, 20.01.2000, Dođan, Öztürk, Kaşık 1143, Merap district, Dođan, Öztürk, Kaşık 1193, Akçatı village, 21.01.2001, Dođan, Öztürk, Kaşık 1244,
111. *Mycena epipterygia* (Scop.: Fr.) Gray  
Çukur plateau, 10.12.2000, Dođan, Aktaş 1086.
112. *Mycena epipterygia* (Scop.: Fr.) Gray var. *lignicola* A.H.Smith  
Çukur plateau, 10.12.2000, Dođan, Aktaş 1076.
113. *Mycena epipterygia* (Scop.: Fr.) Gray var. *pelluculosa* (Fr. ) M.Geest.  
Çukur plateau, 10.12.2000, Dođan, Aktaş 1107.
114. *Mycena galericulata* (Scop.: Fr.) Gray.  
Yeşilköy, 03.12.1999, Dođan, Aktaş 332.
115. *Mycena galopus* (Pers.: Fr.) Kumm.  
Akçatı village, 21.01.2001, Dođan, Öztürk, Kaşık 1216.
116. *Mycena leptoccephala* (Pers.: Fr.) Gill.  
Yeşilköy, 03.12.1999, Dođan, Aktaş 340.
117. *Mycena olida* Bres.  
Yeşilköy, 03.12.1999, Dođan, Aktaş 330.
118. *Mycena polygramma* (Bull.: Fr.) Gray  
Yeşilköy, 03.12.1999, Dođan, Aktaş 346, Çukur plateau, 10.12.2000, Dođan, Aktaş 1069, 1113.
119. *Mycena pura* (Pers.: Fr.) Kumm.  
Merap district, 20.01.2001, Dođan, Aktaş 1123, Alarahan, 20.01.2000, Dođan, Öztürk, Kaşık 1144.
120. *Mycena rosea* (Bull.) Gramberg  
Çukur plateau, 10.12.2000, Dođan, Aktaş 1102.
121. *Mycena sanguinolenta* (Alb. & Schw.: Fr.) Kumm.

Merap district, 20.01.2001, Doğan, Aktaş 1142.

122. *Omphalina oniscus* (Fr.: Fr.) Qué.

Sarıağalar, 20.01.2000, Doğan, Öztürk, Kaşık 1105, Merap district, 20.01.2001, Doğan, Aktaş 1125.

123. *Omphalina rivulicola* Lamoure

Çukur plateau, 10.12.2000, Doğan, Aktaş 1085.

124. *Panellus stypticus* (Bull.: Fr.) P.Karst.

Çukur plateau, 10.12.2000, Doğan, Öztürk, Kaşık 1042.

125. *Strobilurus esculentus* (Wulf.: Fr.) Sing.

Çukur plateau, 10.12.2000, Doğan, Aktaş 1080.

126. *Tricholoma argyraceum* (Bull.: Fr.) Sacc.

Merap district, 20.01.2000, Doğan, Öztürk, Kaşık 1162.

127. *Tricholoma auratum* (Paul.: Fr.) Gill.

Çukur plateau, 10.12.2000, Doğan, Öztürk, Kaşık 1063.

128. *Tricholoma caligatum* (Viv.) Ricken

Çukur plateau, 10.12.2000, Doğan, Aktaş 1104.

129. *Tricholoma focale* (Fr.) Ricken

Çukur plateau, 10.12.2000, Doğan, Öztürk, Kaşık 1051.

130. *Tricholoma fracticum* (Britz.) Kreisel

Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1136.

131. *Tricholoma lascivum* (Fr.) Gill.

Çukur plateau, 10.12.2000, Doğan, Aktaş 1099.

132. *Tricholoma orirubens* Qué.

Yeşilköy, 05.02.2000, Doğan, Öztürk, Kaşık 907, Kızılcaşehir, 06.02.2000, Doğan, Öztürk, Kaşık 932.

133. *Tricholoma sejunctum* (Sow.: Fr.) Qué.

Kızılcaşehir, 05.02.2000, Doğan, Öztürk, Kaşık 926.

134. *Tricholoma scalpturatum* (Fr.) Qué.

Sarıağalar district, 05.02.2000, Doğan, Öztürk, Kaşık 897, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 396, Çukur plateau, 10.12.2000, Doğan, Aktaş 1096.

135. *Tricholoma stans* (Fr.) Sacc.

Yeşilköy, 03.12.1999, Doğan, Aktaş 339, Merap district, 20.01.2001, Doğan, Aktaş 1143, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1222.

136. *Tricholoma terreum* (Schaeff.: Fr.) Kumm.

Yeşilköy, 05.02.2000, Doğan, Aktaş 363, Sabırlar district, 05.02.2000, Doğan, Öztürk, Kaşık 900, Akçatı village, 06.02.2000, Doğan, Aktaş 394, 21.01.2001, Doğan, Öztürk, Kaşık 1223, Kızılcaşehir, 06.02.2000, Doğan, Öztürk, Kaşık 922, Avsallar, 04.03.2000, Doğan, Aktaş 433, Çukur plateau, 10.12.2000, Doğan, Aktaş 1075, Alarahan, 20.01.2001, Doğan, Öztürk, Kaşık 1122, Merap district, 20.01.2001, Doğan, Öztürk, Kaşık 1165, Sarıağalar, Doğan, Öztürk, Kaşık 1075.

137. *Tricholoma virgatum* (Fr.: Fr.) Kumm.

Yeşilköy, 05.02.2000, Doğan, Aktaş 370.

#### Entolomataceae

138. *Entoloma hirtipes* (Schum.: Fr.) Mos.

Çukur plateau, 10.12.2000, Doğan, Öztürk, Kaşık 1071.

#### Pluteaceae

139. *Pluteus pallescens* P.D.Ort.

Çukur plateau, 20.05.2001, Doğan, Öztürk, Kaşık 1350.

140. *Pluteus plautus* (Weinm.) Gill.

Merap district, 20.01.2001, Doğan, Öztürk, Kaşık 1181.

141. *Pluteus thomsonii* (Berk. Br.) Dennis

Syn: *Pluteus cinereus* Qué.

Yeşilköy, 03.12.1999, Doğan, Aktaş 341.

142. *Volvariella gloiocephala* (DC.: Fr.) Boekhout & Enderle

Sarıağalar, 20.01.2001, Doğan, Öztürk, Kaşık 1108.

#### Amanitaceae

143. *Amanita vaginata* (Bull.: Fr.) Vitt.

Çukur plateau, 20.05.2001, Doğan, Öztürk, Kaşık 1346.

#### Lepiotaceae

144. *Lepiota cristata* (Bolt.: Fr.) P.Kumm.

Merap district, 20.01.2000, Doğan, Öztürk, Kaşık 1171.

145. *Lepiota oreadiformis* Vel.

Merap district, 20.01.2001, Doğan, Öztürk, Kaşık 1173, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1211.

146. *Macrolepiota excoriata* (Schaeff.: Fr.) Wass.

Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1238.

#### Coprinaceae

147. *Psathyrella candolleana* (Fr.: Fr.) Mre.

Syn: *Hypholoma egenula* (Berk. & Br.) Sacc.

Yeşilköy, 03.12.1999, Doğan, Aktaş 333.

148. *Psathyrella murcida* (Fr.) Kits van Wav.

Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1200.

149. *Psathyrella tephrophylla* (Romagn.) Bon

Çakallar, 05.03.2000, Doğan, Aktaş 439, Gıvrasıoğlu plateau, 27.05.2000, Doğan, Aktaş 749.

#### Bolbitiaceae

150. *Agrocybe dura* (Bolt.) Sing.

Çukur plateau, 20.05.2001, Doğan, Öztürk, Kaşık 1345, Gıvrasıoğlu plateau, 27.05.2000, Doğan, Aktaş 757, Şifalı su district, 05.05.2001, Doğan, Aktaş 1167.

151. *Agrocybe paludosa* (Lge.) Kühn. & Romagn.

Syn: *Pholiota praecox* (Pers.: Fr.) Fay. var. *paludosa* Lge.

Çukur plateau, 10.12.2000, Doğan, Aktaş 1082.

152. *Agrocybe praecox* (Pers.: Fr.) Fayod



Gıvrasıoğlu plateau, 27.05.2000, Doğan, Aktaş 759, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1206.

153. *Agrocybe vervacti* (Fr.) Romagn.

Gıvrasıoğlu plateau, 27.05.2000, Doğan, Aktaş 748, Merap district, 20.01.2001, Doğan, Öztürk, Kaşık 1194.

154. *Conocybe rickeniana* Sing.: P.D.Ort.

Syn: *Conocybe spicula* (Asch.) Kühn.

*Galera teneroides* (Peck.) Sacc.

Çakallar- Süzek district, 05.02.2000, Doğan, Aktaş 355.

#### Strophariaceae

155. *Stropharia coronilla* (Bull.: Fr.) Quél.

Yeşilköy, 03.12.1999, Doğan, Aktaş 324, Çukur plateau, 20.05.2001, Doğan, Öztürk, Kaşık 1358.

#### Crepidotaceae

156. *Crepidotus mollis* (Schff.: Fr.) Kumm.

Yeşilköy, 03.12.1999, Doğan, Aktaş 320, 04.03.2000, Doğan, Aktaş 436, Sabırlar district, 05.03.2000, Doğan, Aktaş 447, Sarioğlan, 20.01.2000, Doğan, Öztürk, Kaşık 1074, Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1145, Merap district, Doğan, Aktaş 1141, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1202.

157. *Crepidotus variabilis* (Pers.: Fr.) P.Kumm.

Yeşilköy, 03.12.1999, Doğan, Aktaş 336.

#### Cortinariaceae

158. *Cortinarius duracinus* Fr.

Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1207.

159. *Cortinarius elegantior* Fr.

Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1243.

160. *Cortinarius flexipes* Fr.

Çukur plateau, 10.12.2000, Doğan, Aktaş 1079.

161. *Galerina atkinsoniana* A.H.Sm.

Merap district, 20.01.2001, Doğan, Öztürk, Kaşık 1184.

162. *Galerina badipes* (Fr.) Kühn.

Çayarası, 10.12.2000, Doğan, Öztürk,

Kaşık 1035, Çukur plateau, 10.12.2000 Doğan, Öztürk, Kaşık 1061, Merap district, 20.01.2001, Doğan, Aktaş 1129.

163. *Galerina marginata* (Fr.) Kühn.

Çakallar-Süzek district, 05.02.2000, Doğan, Aktaş 354, Sabırlar district, 05.03.2000, Doğan, Aktaş 446, Çukur plateau, 10.12.2000, Doğan 1072, Merap district, 20.01.2001, Doğan, Aktaş 1140.

164. *Gymnopilus hybridus* (Fr.: Fr.) Sing.

Çukur plateau, 10.12.2000, Doğan, Aktaş 1070, Merap district, 20.01.2001, Doğan, Aktaş 1131, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1201.

165. *Gymnopilus penetrans* (Fr.: Fr.) Murrill.

Alarahan, 20.01.2001, Doğan, Öztürk, Kaşık 1118.

166. *Hebeloma eburneum* Malençon

Sarıağalar, 20.01.2000, Doğan, Öztürk, Kaşık 1101, Merap district, 20.01.2001, Doğan, Aktaş 1127, 1130, Kızılcaşehir, 06.02.2000, Doğan, Öztürk, Kaşık 933, Çukur plateau, 10.12.2000, Doğan, Aktaş 1083.

167. *Hebeloma mesophaeum* (Pers.: Fr.) Quél.

Sarıağalar, 20.01.2000, Doğan, Öztürk, Kaşık 1116, Çukur plateau, 10.12.2000, Doğan, Aktaş 1084, Kızılcaşehir, 06.02.2000, Doğan, Öztürk, Kaşık 928, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1228.

168. *Hebeloma sinapizans* (Paulet: Fr.) Gillet

Kızılcaşehir, 06.02.2000, Doğan, Aktaş 381, 389.

169. *Inocybe abietis* Kühn.

Çakallar-Süzek district, 05.02.2000, Doğan, Aktaş 360.

170. *Inocybe asterospora* Quél.

Çukur plateau, 20.05.2001, Doğan, Öztürk, Kaşık 1359.

171. *Inocybe friesii* Heim

Merap district, 20.01.2001, Doğan, Öztürk, Kaşık 1176.

172. *Inocybe fuscidula* Bres.

Çukur plateau, 10.12.2000, Doğan,

Aktaş 1087, Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1126, Sarioğlan, 20.01.2000, Doğan, Öztürk, Kaşık 1106.

173. *Inocybe geophylla* (Saw.: Fr.) Kumm.

Çakallar-Süzek district, 03.12.1999, Doğan, Aktaş 326, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 407, Kızılcaköy, 06.02.2000, Doğan, Öztürk, Kaşık 934, Çukur plateau, 10.12.2000, Doğan, Aktaş 1097, 1112, Merap district, 20.01.2001, Doğan, Aktaş 1128.

174. *Inocybe hirtella* Bres.

Çakallar-Süzek district, 03.12.1999, Doğan, Aktaş 326, Merap district, 20.01.2001, Doğan, Aktaş 1139, Sarıağalar, 20.01.2000, Doğan, Öztürk, Kaşık 1104, Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1129, Kızılcaköy, 05.02.2000, Doğan, Öztürk, Kaşık 931, Yeşilköy, 05.02.2000, Doğan, Aktaş 365, 372, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 383, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1213, Çukur plateau, 10.12.2000, Doğan, Aktaş 1089.

175. *Inocybe impexa* (Lasch) Kuyper

Çakallar-Süzek district, 05.02.2000, Doğan, Aktaş 361.

176. *Inocybe patouillardii* Bres.

Merap district, 20.01.2001, Doğan, Aktaş 1122, 1135.

177. *Inocybe pudica* Kühn.

Kızılcaşehir, 06.02.2000, Doğan, Aktaş 391.

178. *Inocybe pyriodora* (Pers.: Fr.) Quél.

Kızılcaşehir, 06.02.2000, Doğan, Aktaş 400, Çukur plateau, 10.12.2000, Doğan, Öztürk, Kaşık 1064, Akçatı village, 21.01.2001, Doğan, Öztürk, Kaşık 1217.

179. *Inocybe queletii* Maire & Konrad

Kızılcaşehir, 06.02.2000, Doğan, Aktaş 382, Sarıağalar, 20.01.2001, Doğan, Öztürk, Kaşık 1103.

#### Russulaceae

180. *Lactarius deliciosus* (Lge.) Gray.

Kızılcaşehir, 06.02.2000, Doğan, Aktaş 376, Çukur plateau, 10.12.2000, Doğan, Aktaş 1095, Çukur plateau, Şahinler çeşmesi, 10.12.2000, Doğan, Aktaş 1115.

181. *Lactarius deterrimus* Gröger  
Çakallar-Süzek district, 03.12.1999, Doğan, Aktaş 329.
182. *Lactarius salmonicolor* Heim & Leclair  
Merap district, 20.01.2000, Doğan, Öztürk, Kaşık 1161, Kızılcaşehir, 06.02.2000, Doğan, Aktaş 378.
183. *Russula delica* Fr.  
Yeşilköy, 03.12.1999, Doğan, Aktaş 321.
184. *Russula emetica* Fr.  
Alarahan, 20.01.2000, Doğan, Öztürk, Kaşık 1141, 10.12.2000, Çukur plateau, Doğan, Öztürk, Kaşık 1066.
185. *Russula mairei* Sing.  
Akçatı village, 06.02.2000, Doğan, Aktaş 393.
186. *Russula ochroleuca* (Pers.) Fr.  
Çukur plateau, 20.05.2001, Doğan, Öztürk, Kaşık 1340.
187. *Russula sanguinea* (Bull.: St Am.) Fr.  
Kızılcaşehir, 06.02.2000, Doğan, Aktaş 411, Çukur plateau, 10.12.2000, Doğan, Aktaş 1103.
188. *Russula vesca* Fr.  
Merap district, 20.01.2000, Doğan, Öztürk, Kaşık 1172.

## Discussion

In this study, 188 macrofungi taxa belonging to 38 families were identified in the Alanya district. In previous studies, 40 taxa were found in the area (Işiloğlu & Öder, 1995; Gezer, 2000). Fifteen taxa collected during our study are the same as in the previous studies, while the other 173 taxa are different and contribute to the flora of the research area. The area of interest supports a very rich macrofungi flora, and macrofungi grow in various habitats, e.g., pine forest, cedar forest, mixed forest (macchie and shrubs), meadows, evergreen shrubs and in the macchie community. In addition, 5.85% of the macrofungi taxa we found belong to the *Ascomycetes* while 94.15% belong to the *Basidiomycetes*. These rates are similar to those of previous studies carried out in other areas. For example, in the Mediterranean region of Turkey macrofungi species consist of 7.5% *Ascomycetes* and 92.5% *Basidiomycetes* (Işiloğlu & Watling, 1992), 4.5% *Ascomycetes* and 95.5% *Basidiomycetes* (Işiloğlu & Öder 1995) while in the Antalya region the proportions are 8.7% *Ascomycetes* and 91.3% *Basidiomycetes* (Gezer, 2000).

The most species rich families in the region are *Tricholomataceae* (28.19%), *Cortinariaceae* (11.7%), *Polyporaceae* (9.5 %) and *Russulaceae* (4.7 %).

Lignicolous macrofungi represent 8.3% of the species in the area. The most common species are *Phellinus torulosus*, *P. pini*, *Trametes* species, *Schizophyllum*

*commune* and *Fomes fomentarius*. *Phellinus pini* grows only on *Pinus* species and causes extensive damage to pine trees while *P. torulosus* grows on *Pistacia* species and *Pinus* species and is very damaging to these trees. *Fomes fomentarius*, *Trametes* species and *Schizophyllum* are cosmopolitan, deciduous and evergreen trees.

Twenty-three of the 188 macrofungi species we found in the area are considered edible, but only *Morchella esculenta* var. *esculenta*, *M. esculenta* var. *vulgaris*, *Helvella leucomelaena*, *Cantharellus cibarius*, *Rhizopogon roseolus*, *R. luteolus*, *Lepista nuda*, *Amanita vaginata*, *Macrolepiota excoriata*, *Lactarius deliciosus*, *L. deterrimus*, *L. salmonicolor* and *Russula delica* are commonly eaten. Eleven species are poisonous, and these are *Clitocybe candicans*, *C. dealbata*, *C. foetens*, *C. fragrans*, *C. obsoleta*, *C. odora*, *C. phyllophila*, *Galerina marginata*, *Inocybe friesii*, *I. patouillardii* and *Russula emetica*. Despite the number of poisonous macrofungi in the area, the local people do not have enough knowledge about poisonous mushrooms. Nevertheless, there are no records of poisonings.

This study of macrofungi of the Alanya district is a contribution to the Turkish macrofungi flora.

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