



Research Article

<https://doi.org/10.53803/turvehab.1528292>

Macrofungi Determined in Aluçdağı Nature Park (Çamlıdere, Ankara) and its Close Environs

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Received: 05.08.2024

Accepted: 25.09.2024

Published Online: 02.10.2024

Abstract

The study is based on the macrofungi samples collected from Aluçdağı Nature Park and its environs between 2021 and 2024. As a result of field and laboratory studies, 124 macrofungi species belonging to 2 divisions, 4 classes, 15 orders, 50 families and 86 genera were determined. All of the determined species are new for the region, and 68 are new for Ankara province. The list of the species is presented together with their localities, habitats or substrates, collection dates and voucher numbers.

Keywords: Biodiversity, Macrofungi, Çamlıdere, Ankara, Türkiye

Aluçdağı Tabiat Parkı (Çamlıdere, Ankara) ve Yakın Çevresinde Belirlenen Makromantarlar

Özet

Çalışma 2021-2024 yılları arasında Aluçdağı Tabiat Parkı ve çevresindeki alandan toplanan makromantar örneklerine dayanmaktadır. Arazi ve laboratuvar çalışmaları sonucunda, 2 bölüm, 4 sınıf, 15 takım, 50 familya ve 86 cins içinde dağılım gösteren 124 makromantar türü belirlenmiştir. Belirlenen türlerin tamamı bölge için yenidir, 68 tanesi ise Ankara için yenidir. Türlerin listesi, yayılış yerleri, habitat veya substratları, toplanma tarihleri ve toplayıcı numaralarıyla birlikte verilmiştir.

Anahtar kelimeler: Biyoçeşitlilik, Makromantarlar, Çamlıdere, Ankara, Türkiye

INTRODUCTION

Aluçdağı Nature Park is located within the boundaries of Çamlıdere district of Ankara province. The area falls in A4 according to Davis' grid square system, and the Irano-Turanian phytogeographical region within the Holarctic floral kingdom. The climate of the region is Mediterranean with an annual average temperature of 9.79°C, and total precipitation of 585.8 mm. The plant cover of the park area is mainly characterized by pine forests composed of *Pinus nigra* J.F. Arnold and *Pinus sylvestris* L., *Juniperus communis* L., *Juniperus oxycedrus* L., *Berberis vulgaris* L., *Quercus cerris* L., *Quercus robur* L. subsp. *pedunculiflora* (K.Koch) Menitsky, *Quercus robur* L. subsp. *robur*, *Jasminum fruticans* L., *Cerasus mahaleb* (L.) Miller, *Cotoneaster nummularia* Fisch. & C.A.Mey., *Crataegus pseudoheterophylla* Pojark., *Malus sylvestris* (L.) Mill., *Prunus cocomilia* Ten., *Rubus idaeus* L., *Salix alba* L., *Salix amplexicaulis* Bory & Chaub., *Salix babylonica* L., *Salix caprea* L. and *Salix*

Suggested Citation:

Aslan, A.M., Uzun, Y. & Kaya, A. (2024). Macrofungi Determined in Aluçdağı Nature Park (Çamlıdere, Ankara) and its Close Environs. *Türler ve Habitatlar* 5(2): 48–63.

pseudomedemii E.L.Wolf are some other tree or shrubs, observed within the boundaries of nature park area (Uğurman, 2022). Outside the pine forests, *Quercus* sp. forms the dominating tree populations. Alongside the stream, from Çamlıdere High Plateau to Çamlıdere, *Salix* sp. is the most prominent tree population.

Four regional lists (Güler & Mutlu, 2003; Akata et al., 2009; 2019; Öztürk et al., 2017) were presented from nearby areas, and *Protoglossum aromaticum* (Velen.) J.M.Vidal (Türkoğlu et al., 2015), and *Agaricus brunneofibrillosus* Kerrigan (Aslan et al., 2024) were reported as new records from Çamlıdere district. Nevertheless, a comprehensive research has not so far been presented about the macrofungi of the region (Sesli et al., 2020). The study aims to determine the macrofungi growing in Aluçdağı Nature Park and its close environs, and to contribute to the macrofungal biodiversity of Türkiye.

MATERIAL AND METHOD

Sampling of the fruit bodies were performed from 2021 to 2024 within the boundaries of Aluçdağı Nature Park and its close environs from the area between 40°28'-40°31' northern latitudes and 32°29'-32°33' eastern longitudes (Figure 1). During field investigations, fruit bodies were photographed at their naturally growing habitats, and some characteristics such as taste and smell were noted. Then they were transferred to the fungarium within paper cases. Investigation of micromorphology was based on dry specimens. Sections, cut for micro-morphological investigations, were rehydrated with 5% KOH and water. Spore micromorphology was mainly based on the spores obtained from spore prints. At least 20 spores were measured for each sample. Identification was performed by comparing the obtained data by Breitenbach and Kränzlin (1984-2000), Arora (1986), Miller and Miller (1988), Ellis and Ellis (1990), Jordan (1995), Kibby (1997), Bessette et al. (1997; 2007), Arroyo et al. (2005), Kränzlin (2005), Sterry and Hughes (2009), Kuo and Methven (2010), Phillips (2010) and Læssøe and Petersen (2019).

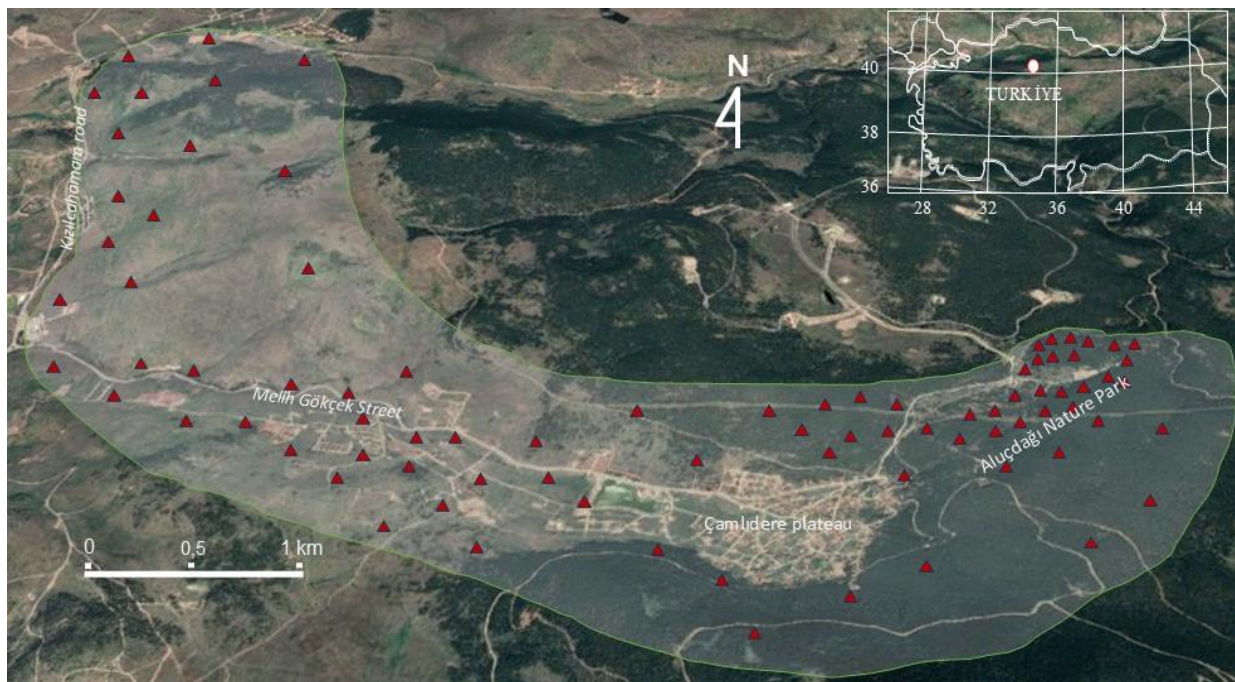


Figure 1. Macrofungi collection sites.

RESULTS

The determined species are listed alphabetically, regarding the taxonomic categories, together with their localities, habitats or substrates, collection dates and voucher numbers.

Fungi R.T. Moore**Ascomycota** Whittaker**Leotiomycetes** O.E. Erikss. & Winka**Helotiales** Nannf.**Lachnaceae** Raitv.1. *Lachnellula subtilissima* (Cooke) Dennis

Aluçdağı Nature Park, Kalburca Hills, pine forest, on decaying pine wood, 1430 m, 09.07.2023, Aslan 294.

Pezizomycetes O.E. Erikss. & Winka**Marthamycetales** P.R. Johnst. & Baral**Marthamycetaceae** Baral, Lantz, Hustad & Minter2. *Cyclaneusma niveum* (Pers.) DiCosmo, Peredo & Minter

Aluçdağı Nature Park, Kalburca Hills, pine forest, on dead pine needles, 1430 m, 09.07.2023, Aslan 282.

Pezizales J. Schröt.**Helvellaceae** Fr.3. *Dissingia leucomelaena* (Pers.) K. Hansen & X.H. Wang

Aluçdağı Nature Park, around hypethral event area, on soil among needle litter, 1405 m, 11.06.2023, Aslan 151.

4. *Helvella acetabulum* (L.) Quél.

Çamlıdere Plateau, around Dostlar summer residences, on soil among leaf litter, 22.06.2023, 1345 m, Aslan 234.

5. *Helvella elastica* Bull.

Çamlıdere Plateau, around Nefestepe mountain houses, on soil among leaf litter, 1350 m, 21.06.2023, Aslan 207.

6. *Helvella lacunosa* Afzel

Around Çamlıdere Plateau Road (Melih Gökçek Street), on wet ground under *Salix* L. sp., 1310 m, 21.06.2023, Aslan 189.

7. *Helvella leucopus* Pers.

Around Çamlıdere Plateau Road (Melih Gökçek Street), on wet ground under *Salix* L. sp., 1320 m, 22.05.2023, Aslan 32.

8. *Paxina queletii* (Bres.) Stangl

Aluçdağı Nature Park, Kalburca Hills, pine forest, on soil among needle litter, 1440 m, 21.06.2023, Aslan 178.

Morchellaceae Rchb.9. *Morchella elata* Fr.

Aluçdağı Nature Park, around wrestling place, pine forest, on soil among needle litter, 1390 m, 22.05.2023, Aslan 61.

Pyronemataceae Corda10. *Anthracobia melaloma* (Alb. & Schwein.) Arnould

Aluçdağı Nature Park, around hypethral event area, on fire residue (ash), 1410 m, 21.06.2023, Aslan 191.

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

Çamlıdere Plateau, around Dostlar summer residences, in soil under *Quercus* L. sp., 1370 m, 22.06.2023, Aslan 243.

12. *Humaria hemisphaerica* (F.H. Wigg.) Fuckel

Around Çamlıdere Plateau Road (Melih Gökçek Street), on wet ground under *Quercus* L. sp., 1300 m, 21.06.2023, Aslan 165.

Tuberaceae Dumort.

13. *Tuber nitidum* Vittad.

Çamlıdere Plateau Road (Melih Gökçek Street), around Pelit Mountain Houses, in soil under *Quercus* sp., 1340 m, 22.05.2023, Aslan 82.

Basidiomycota R.T. Moore

Agaricomycetes Doweld

Agaricales Underw.

Agaricaceae Chevall

14. *Agaricus brunneofibrillosus* Kerrigan

Aluçdağı Nature Park, Taşlıyayla Hill, pine forest, on soil among needle litter, 1470 m, 17.07.2022, K. 15738.

15. *Agaricus campestris* L.

Çamlıdere Plateau, around Dostlar summer residences, on soil among the grass, 1360 m, 22.05.2023, Aslan 45.

16. *Agaricus sylvicola* (Vittad.) Peck

Around Çamlıdere Plateau, pine forest, 1460 m, 22.06.2023, Aslan 219.

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

Çamlıdere Plateau, around Dostlar summer residences, among grass, 1350 m, 22.05.2023, Aslan 48; around Nefestepe mountain houses, 1360 m, 21.06.2023, Aslan 203; Çamlıdere-Kızılcahamam road, around Göktürk Houses, 1370 m, 22.05.2023, Aslan 91.

18. *Macrolepiota procera* (Scop.) Singer

Aluçdağı Nature Park, Taşlıyayla Hill, pine forest, 1470 m, 17.07.2022, K. 15739.

19. *Tulostoma fimbriatum* Fr.

Around Çamlıdere Plateau, pine forest, on soil among needle litter, 1400 m, 16.11.2023, Aslan 304.

Amanitaceae R. Heim ex Pouzar

20. *Amanita rubescens* Pers.

Çamlıdere Plateau, around Nefestepe mountain houses, on soil among leaf litter near *Quercus* sp., 1355 m, 21.06.2023, Aslan 205.

21. *Amanita vaginata* (Bull.) Lam.

Çamlıdere – Kızılcahamam road, around Bernaz Mountain Houses, on soil among leaf litter under *Quercus* sp., 1360 m, 25.06.2022, K.15508; around Nefestepe mountain houses, 1360 m, 21.06.2023, Aslan 206.

Bolbitiaceae Singer

22. *Conocybe apala* (Fr.) Arnolds

Çamlıdere Plateau, ABB Adem Ceylan Park area, 1350 m, 22.05.2022, K. 15557.

23. *Conocybe tenera* (Schaeff.) Kühner

Çamlıdere Plateau, around Ihlamur summer residences, on soil among the grass, 1340 m, 22.05.2023, Aslan 42.

Chromocyphellaceae Knudsen24. *Chromocyphella muscicola* (Fr.) Donk

Çamlıdere Plateau, around Dostlar summer residences, on moss in mixed forest, 1450 m, 22.06.2023, Aslan 226.

Clitocybaceae Roze25. *Clitocybe bresadolana* Singer

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K. 15564.

Cortinariaceae R. Heim26. *Protoglossum niveum* (Vittad.) T.W. May

Around Çamlıdere Plateau Road (Melih Gökçek Street), on soil under *Quercus* sp., 1340 m, 21.06.2023, Aslan 196.

Cyphellaceae Burnett27. *Chondrostereum purpureum* (Pers.) Pouzar

Aluçdağı Nature Park, around hypethral event area, pine forest, on pine stump, 1410 m, 22.10.2022, Aslan 23.

Entolomataceae Kotl. & Pouzar28. *Entoloma sinuatum* (Bull.) P. Kumm.

Çamlıdere-Kızılcahamam road, around Bernaz Mountain Houses, on soil among leaf litter under *Quercus* sp., 1365 m, 25.06.2022, K. 15515.

Galeropsidaceae Singer29. *Panaeolus semiovatus* (Sowerby) S. Lundell & Nannf.

Çamlıdere-Kızılcahamam road, around Bernaz Mountain Houses, on soil among leaf litter under *Quercus* sp., 1365 m, 25.06.2022, K. 15507.

Hydnangiaceae Gäum. & C.W. Dodge30. *Laccaria bicolor* (Maire) P.D. Orton

Aluçdağı Nature Park, Kalburca Hills, pine forest, on soil among needle litter, 1440 m, 21.06.2023, Aslan 183.

31. *Laccaria laccata* (Scop.) Cooke

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K. 15580.

Hygrophoraceae Lotsy32. *Arrhenia griseopallida* (Desm.) Watling

Aluçdağı Nature Park, around wrestling place, pine forest, on mossy soil among needle litter, 1400 m, 10.12.2023, Aslan 332.

33. *Arrhenia spathulata* (Fr.) Redhead

Aluçdağı Nature Park, around wrestling place, pine forest, on moss among needle litter, 1400 m, 10.12.2023, Aslan 324.

34. *Hygrocybe chlorophana* (Fr.) Wünsche

Aluçdağı Nature Park, Kalburca Hills, pine forest, on soil among needle litter, 1440 m, 21.06.2023, Aslan 190.

35. *Hygrocybe conica* (Schaeff.) P. Kumm.

Çamlıdere Plateau, around Dostlar summer residences, on soil among leaf litter under *Quercus* sp., 1365 m, 22.06.2023, Aslan 223.

Hymenogastraceae Vittad.

36. *Galerina graminea* (Velen.) Kühner

Aluçdağı Nature Park, around wrestling place, pine forest, on soil among moss, 1400 m, 10.12.2023, Aslan 346.

37. *Hebeloma crustuliniforme* (Bull.) Quéf.

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K. 15595.

38. *Hebeloma mesophaeum* (Pers.) Quéf.

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K. 15589.

39. *Hebeloma sinapizans* (Paulet) Gillet

Çamlıdere-Kızılcıcahamam road, around Bernaz Mountain Houses, on soil among leaf litter under *Quercus* sp., 1340 m, 21.06.2023, Aslan 168.

40. *Psilocybe coronilla* (Bull.) Noordel

Çamlıdere Plateau, around Dostlar summer residences, on soil among grass, 1360 m, 22.05.2023, Aslan 47.

Inocybaceae Jülich

41. *Inocybe geophylla* P. Kumm.

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K.15571.

42. *Mallocybe perbrevis* (Weinm.) Matheny & Esteve-Rav.

Çamlıdere Plateau, around Ihlamur summer residences, on soil among leaf litter under *Quercus* sp., 1365 m, 22.05.2023, Aslan 31.

43. *Pseudosperma rimosum* (Bull.) Matheny & Esteve-Rav.

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K.15600; Çamlıdere Plateau, around Dostlar summer residences, on soil among grass, 1370 m, 22.06.2023, Aslan 241.

Lycoperdaceae F. Berchtold & J. Presl

44. *Bovista aestivalis* (Bonord.) Demoulin

Aluçdağı Nature Park, around wrestling place, pine forest, on soil among needle litter, 1400 m, 09.07.2023, Aslan 251.

45. *Bovista plumbea* Pers.

Aluçdağı Nature Park, around picnic area, on soil among grass, 1400 m, 22.10.2022, Aslan 13; around hypethral event area, pine forest, 1405 m, 11.06.2023, Aslan 161.

46. *Lycoperdon molle* Pers.

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1425 m, 07.11.2021, K. 15474.

47. *Lycoperdon nigrescens* Pers.

Aluçdağı Nature Park, Kalburca Hills, pine forest, on mossy ground, 1440 m, 21.06.2023, Aslan 182.

48. *Lycoperdon perlatum* Pers.

Aluçdağı Nature Park, around hypethral event area, pine forest, on soil among needle litter, 1405 m, 22.10.2022, Aslan 19; Çamlıdere Plateau, around Nefestepe mountain houses, on soil under *Quercus* sp., 1370 m, 21.06.2023, Aslan 202.

Marasmiaceae Roze ex Kühner

49. *Crinipellis scabella* (Alb. & Schwein.) Murrill

Aluçdağı Nature Park, Kalburca Hills, pine forest, on soil among needle litter, 1440 m, 21.06.2023, Aslan 186.

50. *Marasmius epodius* Bres.

Çamlıdere-Kızılcahamam road, around Bernaz Mountain Houses, on soil among grass, 1350 m, 21.06.2023, Aslan 169.

51. *Marasmius oreades* (Bolton) Fr.

Çamlıdere Plateau Road (Melih Gökçek Street), on soil among grass, 1350 m, 21.06.2023, Aslan 193.

52. *Marasmius rotula* (Scop.) Fr.

Çamlıdere-Kızılcahamam road, around Bernaz Mountain Houses, on soil among leaf litter under *Quercus* sp, 1350 m, 21.06.2023, Aslan 172.

53. *Marasmius wynneae* Berk. & Broome

Aluçdağı Nature Park, Taşlyayla Hill, pine forest, on soil among needle litter, 1470 m, 17.07.2022, K.15751.

Mycenaceae Overeem

54. *Atheniella flavoalba* (Fr.) Redhead, Moncalvo, Vilgalys, Desjardin & B.A. Perry

Aluçdağı Nature Park, Gölcük Hill, pine forest, among mosses, 1430 m, 07.11.2021, K. 15457.

55. *Mycena epipterygia* (Scop.) Gray

Aluçdağı Nature Park, Gölcük Hill, pine forest, on mossy ground among needle litter, 1430 m, 07.11.2021, K. 15441.

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

Aluçdağı Nature Park, Gölcük Hill, pine forest, among needle litter, 1430 m, 22.06.2023, Aslan 218.

57. *Mycena rosea* Gramberg

Çamlıdere Plateau, around Dostlar summer residences, under *Quercus* sp., 1365 m, 22.06.2023, Aslan 230.

58. *Xeromphalina caudicinalis* (Fr.) Kühner & Maire

Aluçdağı Nature Park, around local products sales place, on mossy ground among needle litter, 1400 m, 22.10.2022, Aslan 16.

Omphalotaceae Bresinsky

59. *Gymnopus androsaceus* (L.) Della Magg. & Trassin.

Aluçdağı Nature Park, Gölcük Hill, pine forest, among needle litter, 1430 m, 22.05.2023, Aslan 53; Kalburca Hills, pine forest, 1430 m, 21.06.2023, Aslan 185.

60. *Gymnopus dryophilus* (Bull.) Murrill

Aluçdağı Nature Park, Gölcük Hill, pine forest, among needle litter, 1420 m, 07.11.2021, K. 15454; 22.10.2022, Aslan 11; Çamlıdere-Kızılcahamam road, around Göktürk Houses, among leaf litter, 1360 m, 22.05.2023, Aslan 96.

61. *Rhodocollybia butyracea* (Bull.) Lennox

Around Çamlıdere Plateau, pine forest, on soil among needle litter, 1440 m, 22.06.2023, Aslan 217.

Physalacriaceae Corner

62. *Strobilurus stephanocystis* (Kühner & Romagn. ex Hora) Singer
Aluçdağı Nature Park, around wrestling place, pine forest, among needle litter, 1370 m, 10.12.2023, Aslan 335.

Pleurotaceae Kühner

63. *Pleurotus ostreatus* (Jacq.) P. Kumm.
Çamlıdere Plateau Road (Melih Gökçek Street), on *Salix* sp. stump, 1310 m, 22.10.2022, Aslan 26.

Pluteaceae Kotl. & Pouzar

64. *Pluteus romellii* (Britzelm.) Lapl.
Çamlıdere Plateau Road (Melih Gökçek Street), on *Salix* sp. stump, 1310 m, 22.05.2023, Aslan 34.

65. *Volvopluteus gloiocephalus* (DC.) Vizzini, Contu & Justo
Çamlıdere Plateau, around Dostlar summer residences, on soil among grass, 1360 m, 22.05.2023, Aslan 50.

Psathyrellaceae Vilgalys, Moncalvo & Redhead

66. *Coprinellus micaceus* (Bull.) Vilgalys, Hopple & Jacq. Johnson
Around Çamlıdere Plateau Pond, around *Salix* sp. stump, 1350 m, 25.06.2022, K. 15621.

67. *Coprinopsis acuminata* (Romagn.) Redhead, Vilgalys & Moncalvo
Çamlıdere Plateau, around Dostlar summer residences, on soil among leaf litter under *Quercus* sp., 1360 m, 22.06.2023, Aslan 235.

68. *Coprinopsis nivea* (Pers.) Redhead, Vilgalys & Moncalvo
Çamlıdere Plateau Road (Melih Gökçek Street), on decaying cow dung, 1300 m, 05.05.2024, Aslan 360.

69. *Parasola plicatilis* (Curtis) Redhead, Vilgalys & Hopple
Çamlıdere Plateau, around Dostlar summer residences, on soil among grass, 1360 m, 22.05.2023, Aslan 43.

Schizophyllaceae Quél.

70. *Schizophyllum amplum* (Lév.) Nakasone
Çamlıdere Plateau, around Ihlamur summer residences, on decaying twigs, 1370 m, 22.05.2023, Aslan 39.

71. *Schizophyllum commune* Fr.
Çamlıdere Plateau Road (Melih Gökçek Street), on decaying *Salix* sp. stump., 1345 m, 16.11.2023, Aslan 302; on decaying wood, 1340 m, 05.05.2024, Aslan 358.

Strophariaceae Singer & A.H. Sm.

72. *Agrocybe pediades* (Fr.) Fayod
Çamlıdere-Kızılcahamam road, around Bernaz Mountain Houses, on soil among grass, 1365 m, 25.06.2022, K. 15524; Aluçdağı Nature Park, around picnic area, 1410 m, 22.05.2022, K. 15598; Çamlıdere Plateau, around Dostlar summer residences, 1370 m, 22.05.2023, Aslan 46.

73. *Deconica coprophila* (Bull.) P. Karst.
Çamlıdere Plateau Road (Melih Gökçek Street), on decaying cow dung, 1350 m, 22.10.2022, Aslan 24; Aluçdağı Nature Park, around lavatories, 1400 m, 22.05.2023, Aslan 76.

74. *Pholiota aurivella* (Batsch) P. Kumm.

Çamlıdere Plateau, around Ladin Country Villas, on *Salix* sp. trunk, 1350 m, 22.10.2022, Aslan 25.

Tricholomataceae R. Heim ex Pouzar

75. *Leucopaxillus gentianeus* (Quél.) Kotl.

Aluçdağı Nature Park, Kalburca Hills, pine forest, on soil among needle litter, 1430 m, 21.06.2023, Aslan 176.

76. *Tricholoma batschii* Gulden ex Mort. Chr. & Noordel.

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1420 m, 07.11.2021, K. 15469.

77. *Tricholoma imbricatum* (Fr.) P. Kumm.

Aluçdağı Nature Park, around local products sales place, pine forest, on soil among needle litter, 1430 m, 22.10.2022, Aslan 14.

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

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1420 m, 07.11.2021, K. 15470.

Auriculariales Bromhead

Auriculariaceae Fr.

79. *Exidia glandulosa* (Bull.) Fr.

Çamlıdere Plateau, around Dostlar summer residences, on decaying *Quercus* sp., stump, 1365 m, 22.06.2023, Aslan 222.

80. *Exidia recisa* (Ditmar) Fr.

Aluçdağı Nature Park, around wrestling place, pine forest, on decaying twigs, 1400 m, 10.12.2023, Aslan 325.

Boletales E.-J. Gilbert

Boletaceae Chevall.

81. *Rubroboletus satanas* (Lenz) Kuan Zhao & Zhu L. Yang

Çamlıdere Plateau, around Dostlar summer residences, on soil under *Quercus* sp., 1370 m, 22.06.2023, Aslan 224.

82. *Xerocomellus chrysenteron* (Bull.) Šutara

Aluçdağı Nature Park, around hypethral event area, pine forest, on soil among needle litter, 1410 m, 11.06.2023, Aslan 162; Aluçdağı Nature Park, Kalburca Hills, pine forest, 1430 m, 09.07.2023, Aslan 289.

Diplocystidiaceae Kreisel

83. *Astraeus hygrometricus* (Pers.) Morgan

Aluçdağı Nature Park, around wrestling place, pine forest, on soil among needle litter, 1400 m, 09.07.2023, Aslan 250.

Gomphidiaceae Maire ex Jülich,

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

Aluçdağı Nature Park, Taşlyayla Hill, pine forest, on soil among needle litter, 1460 m, 11.06.2023, Aslan 145; Aluçdağı Nature Park, Kalburca Hills, pine forest, 1430 m, 09.07.2023, Aslan 285; around Çamlıdere Plateau, pine forest, 1450 m, 22.06.2023, Aslan 209.

Paxillaceae Lotsy

85. *Melanogaster broomeanus* Berk.

1370 m, 21.06.2023, Aslan 200.

Rhizopogonaceae Gäum. & C.W. Dodge

86. *Rhizopogon luteolus* Fr.

Aluçdağı Nature Park, around picnic area, pine forest, in soil among needle litter, 1405 m, 22.10.2022, Aslan 12; Aluçdağı Nature Park, around wrestling place, pine forest, 1400 m, 22.05.2023, Aslan 69.

Suillaceae Besl & Bresinsky

87. *Suillus bovinus* (L.) Roussel

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K. 15594.

88. *Suillus granulatus* (L.) Roussel

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K. 15588.

89. *Suillus luteus* (L.) Roussel

Aluçdağı Nature Park, around hypethral event area, pine forest, on soil among needle litter, 1410 m, 11.06.2023, Aslan 156.

Cantharellales Gäum.

Hydnaceae Chevall.

90. *Clavulina rugosa* (Bull.) J. Schröt.

Aluçdağı Nature Park, Kalburca Hills, pine forest, on soil among needle litter, 1430 m, 21.06.2023, Aslan 179.

Geastrales K. Hosaka & Castellano

Geastraceae Corda

91. *Geastrum pectinatum* Pers.

Aluçdağı Nature Park, around local products sales place, on soil among needle litter, 1420 m, 22.10.2022, Aslan 17.

92. *Sphaerobolus stellatus* Tode

Aluçdağı Nature Park, Gölcük Hill, pine forest, on decaying stump, 1430 m, 09.07.2023, Aslan 292.

Gloeophyllales Thorn

Gloeophyllaceae Jülich

93. *Gloeophyllum sepiarium* (Wulfen) P. Karst.

Aluçdağı Nature Park, Kalburca Hills, pine forest, on decaying pine stump, 1430 m, 09.07.2023, Aslan 276.

Hymenochaetales Oberw.

Hymenochaetaceae Donk

94. *Phellinus igniarius* (L.) Quél.

Çamlidere Plateau Road (Melih Gökçek Street), on *Salix* sp. stump, 1320 m, 22.10.2022, Aslan 27.

Hysterangiales K. Hosaka & Castellano

Hysterangiaceae E. Fisch.

95. *Hysterangium stoloniferum* Tul. & C. Tul.

Çamlidere Plateau, around Nefestepe mountain houses, in soil under *Quercus* sp., 1370 m, 21.06.2023, Aslan 198.

Polyporales Gäum.**Laetiporaceae** Jülich

96. *Laetiporus sulphureus* (Bull.) Murrill

Çamlıdere Plateau Road (Melih Gökçek Street), on *Salix* sp. trunk, 1320 m, 22.06.2023, Aslan 208.

Polyporaceae Fr. ex Corda

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

Çamlıdere Plateau Road (Melih Gökçek Street), on *Salix* sp. stump, 1320 m, 22.10.2022, Aslan 29.

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

Çamlıdere Plateau Road (Melih Gökçek Street), on *Salix* sp. stump, 1320 m, 22.10.2022, Aslan 28.

99. *Lentinus arcularius* (Batsch) Zmitr.

Around Çamlıdere stadium, on decaying *Quercus* sp. twigs, 1300 m, 21.06.2023, Aslan 175; Çamlıdere Plateau, around Dostlar summer residences, 1370 m, 22.06.2023, Aslan 236.

100. *Lentinus tigrinus* (Bull.) Fr.

Çamlıdere Plateau Road (Melih Gökçek Street), on *Salix* sp. stump, 1310 m, 09.07.2023, Aslan 301.

101. *Trametes trogii* Berk.

Çamlıdere Plateau Road (Melih Gökçek Street), on *Salix* sp. stump, 1320 m, 21.06.2023, Aslan 192.

Russulales Kreisel ex P.M. Kirk, P.F. Cannon & J.C. David**Auriscalpiaceae** Maas Geest.

102. *Auriscalpium vulgare* Gray

Çamlıdere-Kızılcahamam road, around Pelit Mountain Houses, pine forest, on decaying pine cones, 1345 m, 22.05.2023, Aslan 84.

Russulaceae Lotsy

103. *Lactarius deliciosus* (L.) Gray

Aluçdağı Nature Park, Taşlıyayla Hill, pine forest, on soil among needle litter, 1470 m, 17.07.2022, K.15735; Aluçdağı Nature Park, Kalburca Hills, pine forest, 1430 m, 21.06.2023, Aslan 177.

104. *Russula adusta* (Pers.) Fr.

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K. 15587.

105. *Russula aurea* Pers.

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K. 15579.

106. *Russula atropurpurea* (Krombh.) Britzelm.

Aluçdağı Nature Park, Taşlıyayla Hill, pine forest, on soil among needle litter, 1470 m, 10.06.2023, Aslan 135.

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

Çamlıdere Plateau, around Nefestepe mountain houses, on soil among leaf litter, 1370 m, 21.06.2023, Aslan 201.

108. *Russula decolorans* (Fr.) Fr.

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K. 15582.

109. *Russula delica* Fr.

Aluçdağı Nature Park, Taşlıyayla Hill, pine forest, on soil among needle litter, 1470 m, 17.07.2022, K. 15742.

110. *Russula nauseosa* (Pers.) Fr

Aluçdağı Nature Park, around hypethral event area, pine forest, on soil among needle litter, 1410 m, 25.06.2022, K. 15687.

111. *Russula risigallina* (Batsch) Sacc.

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1430 m, 25.06.2022, K. 15584.

Stereaceae Pilát

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

Çamlidere Plateau Road (Melih Gökçek Street), on decaying *Quercus* sp. stump, 1340 m, 21.06.2023, Aslan 195.

Thelephorales Corner ex Oberw.

Thelephoraceae Chevall.

113. *Thelephora caryophyllea* (Schaeff.) Pers.

Aluçdağı Nature Park, Kalburca Hills, pine forest, on soil among needle litter, 1430 m, 21.06.2023, Aslan 188.

Dacrymycetes Doweld

Dacrymycetales Henn.

Dacrymycetaceae J. Schröt.tri

114. *Dacrymyces stillatus* Nees

Aluçdağı Nature Park, Kalburca Hills, pine forest, on decaying twigs, 1430 m, 09.07.2023, Aslan 278.

Incertae sedis

115. *Baeospora myosura* (Fr.) Singer

Aluçdağı Nature Park, around hypethral event area, pine forest, on decaying pine cones, 1410 m, 22.10.2022, Aslan 22.

116. *Crucibulum laeve* (Huds.) Kambly

Aluçdağı Nature Park, Kalburca Hills, pine forest, on decaying wood, 1435 m, 22.06.2023, Aslan 215.

117. *Cystoderma carcharias* (Pers.) Fayod

Aluçdağı Nature Park, Gölcük Hill, pine forest, on soil among needle litter, 1420 m, 07.11.2021, K. 15443; around wrestling place, pine forest, 1400 m, 10.12.2023, Aslan 338.

118. *Cystodermella cinnabarina* (Alb. & Schwein) Harmaja

Aluçdağı Nature Park, around wrestling place, pine forest, on mossy soil among needle litter, 1400 m, 10.12.2023, Aslan 343.

119. *Infundibulicybe gibba* (Pers.) Harmaja

Aluçdağı Nature Park, Kalburca Hills, pine forest, on soil among grass, 1440 m, 25.06.2022, K. 15615.

120. *Lepista nuda* (Bull.) Cooke

Aluçdağı Nature Park, around wrestling place, pine forest, on soil among needle litter, 1400 m, 22.05.2023, Aslan 59; Çamlıdere-Kızılcahamam road, around Pelit Mountain Houses, pine forest, 1360 m, Aslan 85.

121. *Myxomphalia maura* (Fr.) Hora

Aluçdağı Nature Park, around wrestling place, pine forest, on soil among needle litter, 1400 m, 10.12.2023, Aslan 336.

122. *Omphalina pyxidata* (Bull.) Quél.

Aluçdağı Nature Park, around wrestling place, pine forest, on soil among needle litter, 1400 m, 10.12.2023, Aslan 323.

123. *Panaeolina foenisecii* (Pers.) Maire

Çamlıdere Plateau, ABB Adem Ceylan Park area, on manured soil among grass, 1355 m, 25.06.2022, K. 15556.

124. *Tricholomopsis rutilans* (Schaeff.) Singer

Aluçdağı Nature Park, around wrestling place, pine forest, on soil among needle litter, 1400 m, 10.06.2023, Aslan 115.

DISCUSSION

One hundred and twenty-four macrofungi species belonging to Ascomycota (13) and Basidiomycota (111) were determined. The determined species are distributed in 4 classes (Agaricomycetes 110, Dacrymycetes 1, Leotiomycetes 2, Pezizomycetes 11) (Figure 2), and 15 orders (Agaricales 75, Auriculariales 2, Boletales 9, Cantharellales 1, Dacrymycetales 1, Geastrales 2, Gloeophyllales 1, Helotiales 1, Hymenochaetales 1, Hysterangiales 1, Marthamycetales 1, Pezizales 11, Polyporales 6, Russulales 11, Thelephorales 11) (Figure 3).

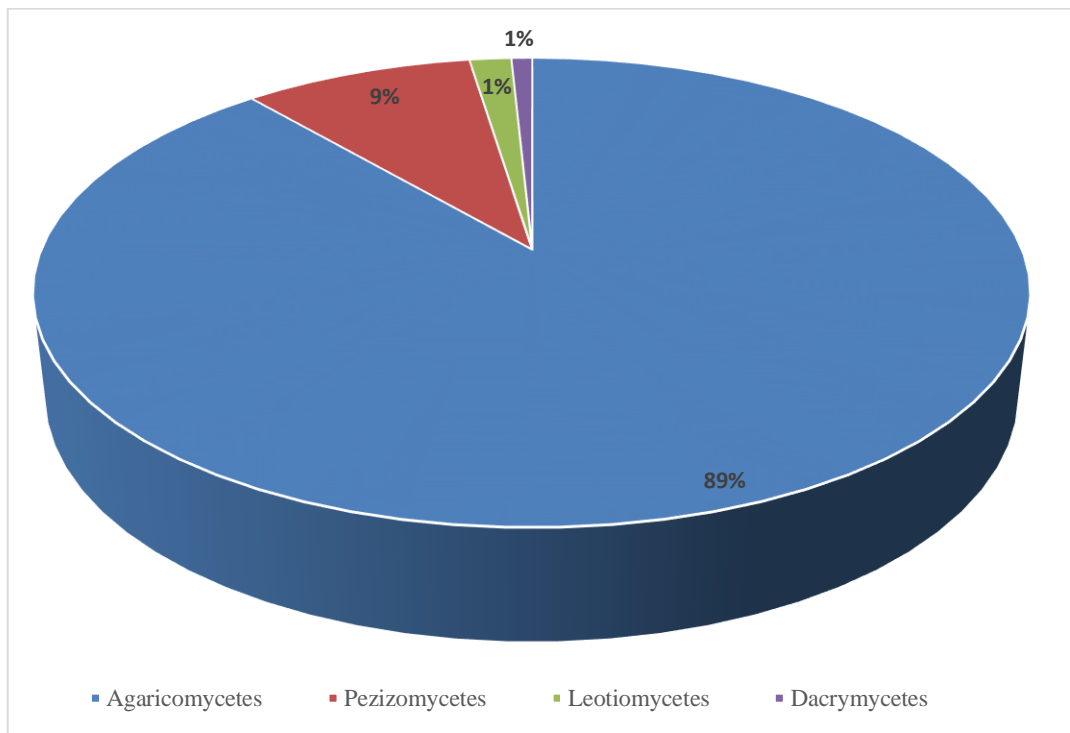


Figure 2. Class-wise distribution of the determined species.

Ten of the determined species are not assigned to a current family and are still in *Incertae sedis* position (IndexFungorum, 2024). Russulaceae is the most crowded family in the research area with nine species. Agaricaceae and Helvellaceae follow it each with 6 species. In the region, five families (Hymenogastraceae, Lycoperdaceae, Marasmiaceae, Mycenaceae, Polyporaceae) were found to be represented by 5 species, two families (Hygrophoraceae, Tricholomataceae) with 4 species, six families (Inocybaceae, Omphalotaceae, Psathyrellaceae, Pyronemataceae, Strophariaceae, Suillaceae) with 3 species and nine families (Amanitaceae, Auriculariaceae, Bolbitiaceae, Boletaceae, Geastraceae, Hydangiaceae, Physalacriaceae, Pluteaceae, Schizophyllaceae) with 2 species. Remaining 24 families are represented with only one species.

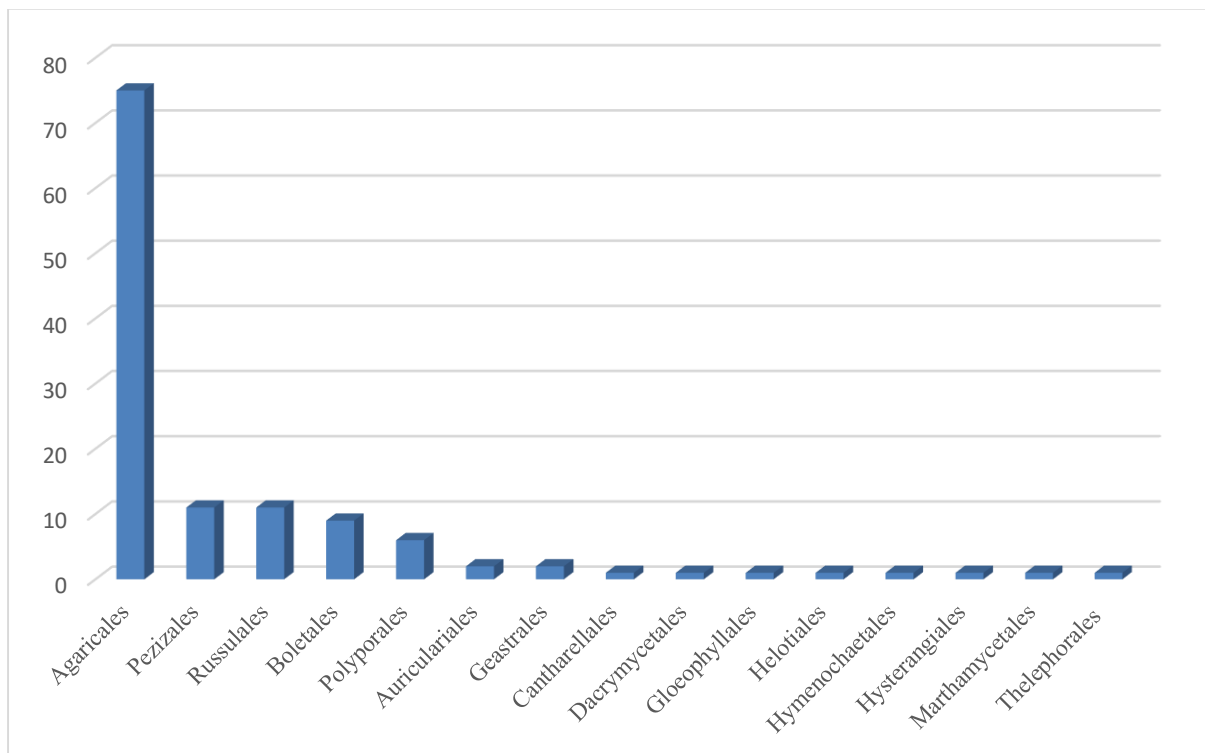


Figure 3. Order-wise distribution of the determined species.

Sixty-four of the determined 86 genera are represented by only one species in the region while remaining 22 are represented by two or more species. Thirteen (*Amanita*, *Arrhenia*, *Bovista*, *Conocybe*, *Coprinopsis*, *Exidia*, *Ganoderma*, *Gymnopus*, *Hygrocybe*, *Laccaria*, *Lentinus*, *Pluteus*, *Schizophyllum*) of these 22 genera included 2 species, six of them (*Agaricus*, *Hebeloma*, *Lycoperdon*, *Mycena*, *Suillus*, *Tricholoma*) included 3 species, and two (*Helvella*, *Marasmius*) of them included 4 species. *Russula* was found to be the most crowded species in the research area.

Thirty-five percent (43 species) of the determined species are edible, and 8 of them (*Amanita vaginata*, *Pleurotus ostreatus*, *Coprinus comatus*, *Suillus collinitus*, *Lactarius deliciosus*, *Morchella elata*, *Russula adusta*, *R. delica*) are collected and consumed by local people. *Lactarius deliciosus* and *Russula delica* are also sold in public bazaars. Sixty-four of the total species are inedible, and 16 of them are more or less poisonous.

All of the determined taxa (124 species) are new to the research area, and 68 (54.84%) of them are presented for the first time from Ankara province.

The determined species were also compared by the species list of the studies, previously carried out within the boundaries of Ankara province. These studies, the taxa number determined by these studies, similar species number and similarity percentages are provided in Table 1.

Table 1. Comparison of the determined species with those reported previously from Ankara.

The study	Similar taxa	Total taxa	Similarity (%)
Güler & Mutlu (2003)	8	17	47,1
Akata et al. (2009)	28	110	30,0
Öztürk et al. (2017)	19	68	27,9
Akata et al. (2019)	27	90	25,5

AUTHOR CONTRIBUTION STATEMENT

In this study; the study idea and design, data collection, analysis and interpretation of the results, and drafting of the article were made together by the authors.

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