



## Macromycetes of Yavuzeli and Şehitkâmil (Gaziantep/Turkey) districts

Abdullah KAYA <sup>\*1</sup>, Ömer Faruk KAYA <sup>1</sup>, Yasin UZUN <sup>1</sup>, İbrahim Halil KARACAN <sup>2</sup>

<sup>1</sup>Karamanoğlu Mehmetbey University, Science Faculty, Department of Biology, 70100 Karaman, Turkey

<sup>2</sup>Ömer Özmimar Religious Anatolian High School, 27220, Gaziantep, Turkey

### Abstract

The study was conducted on the macrofungi specimens collected from Yavuzeli and Şehitkâmil districts (Gaziantep-Turkey) between 2009-2014. As a result, 73 taxa belonging to 36 families and 57 genera in *Ascomycota* and *Basidiomycota* were identified. All of the taxa are new records for the districts while *Cyclaneusma minus* (Butin) DiCosmo, Peredo & Minter (*Rhytismataceae* Chevall.) is new record for Turkey.

**Key words:** Biodiversity, macrofungi, Yavuzeli, Şehitkâmil, Turkey

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## Yavuzeli ve Şehitkâmil (Gaziantep) yörelerinin makromantarları

### Özet

Çalışma 2009-2014 yılları arasında Yavuzeli ve Şehitkâmil (Gaziantep) yörelerinden toplanan makromantar örnekleri üzerinde gerçekleştirilmiştir. Çalışma sonucunda, *Ascomycota* ve *Basidiomycota* bölümlerine ait 36 familya ve 57 cins içinde yer alan 73 takson belirlenmiştir. Taksonların tamamı bölge için yeni kayıt olup, *Cyclaneusma minus* (Butin) DiCosmo, Peredo & Minter (*Rhytismataceae* Chevall.) ise Türkiye için yeni kayıttır.

**Anahtar kelimeler:** Biyoçeşitlilik, makrofunguslar, Yavuzeli, Şehitkâmil, Türkiye

### 1. Introduction

Yavuzeli and Şehitkâmil are the two districts of Gaziantep province within southeastern Anatolian region of Turkey and in C6 square according to Davis' grid square system. The districts are situated between 36°59' - 37°23' north latitude and 37°00' - 37°52' east longitudes and encompasses a surface area of 1694 km<sup>2</sup> (Figure 1).



Figure 1. Map of the research area

\* Corresponding author / Haberleşmeden sorumlu yazar: Tel.: +903382262170; Fax.: +903382262080; E-mail: kayaabd@hotmail.com

The area has a Mediterranean climate (Akman, 1999) and falls mainly in Irano-Turanian phytogeographical sector within the holoarctic floral kingdom. The precipitation regime is as winter, spring, autumn and summer. Main tree populations affecting the distribution of macrofungi in the region are *Quercus* L. shrubs and planted *Pinus brutia* Ten populations as well as *Populus* L. and *Salix* L. members along streamsides.

Though some studies were performed by Kaya (2009a; 2009b; 2009c) and Kaya et al. (2012) at neighboring regions and some records were given by Kaya et al. (2008), Kaya (2009d) and Gücin et al. (2010) from adjacent provinces, no records have been given from the districts 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 Yavuzeli and Şehitkamil districts (Gaziantep) during periodical field inventories between 2009-2014. During field studies, macroscopic and ecologic characteristics and the local ethnomycological knowledge of the specimens were recorded and they were photographed in their natural habitats. After the samples were carried to the fungarium, they were dried in an air conditioned room and put in polyethylene bags as fungarium materials. Microscopic investigations were carried out in the fungarium under light microscope. Using the obtained macroscopic and microscopic data, the specimens were identified with the help of relevant literature (Breitenbach and Kränzlin, 1984-2000; Jordan, 1995; 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, 73 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* Whittaker

#### *Ascobolaceae* Boud. ex Sacc.

1. *Ascobolus stercorarius* (Bull.) J. Schröt.

Yavuzeli, Çimenli village, on cow dung, 37°17'N–37°34'E, 537 m, 09.03.2014, K. 8572.

#### *Helotiaceae* Rehm

2. *Hymenoscyphus fructigenus* (Bull.) Gray

Yavuzeli, Çimenli village, on decaying acorn, 37°17'N–37°34'E, 593 m, 09.03.2014, K. 8559.

#### *Helvellaceae* Fr.

3. *Helvella costifera* Nannf.

Şehitkâmil, Dülükbaba forest, on soil, 37°02'K–37°18'E, 924 m, 30.03.2013, K. 7835.

4. *Helvella lacunosa* Afzel.

Yavuzeli, Sarıbuğdaylı village, streamside, on sandy soil, 37°17'N–37°30'E, 559 m, 16.03.2014, K. 8668.

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

Yavuzeli, Büyükkarakuyu village, pine forest, 37°15'N–37°32'E, 785 m, 20.04.2012, K.7421; Şehitkâmil, Dülükbaba picnic area, pine forest, 37°02'N–37°18'E, 924 m, 30.03.2013, K. 7836.

#### *Morchellaceae* Rchb.

6. *Morchella deliciosa* Fr.

Şehitkâmil, Dülükbaba picnic area, pine forest, 37°02'N–37°18'E, 924 m, 30.03.2013, K. 7838; Öğümsöğüt village, pine forest, 37°06'N–37°16'E, 924 m, 06.04.2013, K. 7867.

#### *Pezizaceae* Dumort.

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

Şehitkâmil, Dülükbaba picnic area, pine forest, 37°02'N–37°18'E, 924 m, 30.03.2013, K. 7838; Öğümsöğüt village, pine forest, 37°06'N–37°16'E, 924 m, 06.04.2013, K. 7867.

#### *Pyronemataceae* Corda

8. *Geopora arenicola* (Lév.) Kers

Yavuzeli, Büyükkarakuyu village, on sandy soil, 37°13'N–37°31'E, 825 m, 20.04.2012, K.7418.

#### *Rhytismataceae* Chevall.

9. *Cyclaneusma minus* (Butin) DiCosmo, Peredo & Minter

Syn.: *Naemacyclus minor* Butin.

Yavuzeli, Çimenli village, on decaying pine needles, 37°17'N–37°34'E, 593 m, 09.03.2014, K. 8574.

Ascocarp 1-1.5 × 0,5 mm in diameter, convex to cushionlike, longitudinally embedded in the tissue of pine needles (Figure

2a). Hymenium roughish, ochre to light brown-ochre. Spores 75–85 × 2–3 µm, hyaline, smooth, filiform, slightly curved, with 1-2 septa in the central part and finely granular contents (Figure 2b).. Asci 120 × 14,5 µm, eight-spored. Paraphyses filiform, some forked toward the tips (Breitenbach ve Kränzlin, 1984).

#### *Valsaceae* Tul. & C. Tul.

10. *Valsa sordida* Nitschke

Yavuzeli, Çimenli village, on *Populus* sp., 37°17'N–37°34'E, 536 m, 09.03.2014, K. 8550.

### *Basidiomycota* R.T. Moore

#### *Agaricaceae* Chevall.

11. *Agaricus campestris* L.

Yavuzeli, Akbayır village, among grass, 37°23'N–37°33'E, 648 m, 02.12.2011, K. 7326.

12. *Agaricus xanthodermus* Genev.

Şehitkâmil, Dülükbaba picnic area, among grass, 37°06'N–37°19'E, 24.11.2013, K. 6536.

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

Şehitkâmil, Dülükbaba picnic area, meadow, 37°06'N–37°19'E, 24.11.2013, K. 6536.

14. *Cyathus olla* (Batsch) Pers.

Yavuzeli, Büyükkarakuyu village, on decaying herbs, 37°14'N–37°32'E, 836 m, 20.04.2012, K. 7774.

15. *Lycoperdon molle* Pers.

Yavuzeli, Küçükkarakuyu village, among grass, 37°20'N–37°34'E, 894 m, 02.12.2011, K. 7348.

#### *Macrolepiota excoriata* (Schaeff.) Wasser

Yavuzeli, Akbayır village, among grass, 37°23'N–37°33'E, 647 m, 02.12.2011, K. 7327.

1. *Macrolepiota mastoidea* (Fr.) Singer

Yavuzeli, Küçükkarakuyu village, in grass, 37°21'N–37°34'E, 938 m, 02.12.2011, K. 7336.

#### *Auriculariaceae* Fr.

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

Yavuzeli, Çimenli village, on decaying *Quercus* sp. twigs, 37°17'N–37°34'E, 606 m, 09.03.2014, K. 8561.

#### *Bolbitiaceae* Singer

3. *Conocybe apala* (Fr.) Arnolds

Yavuzeli, Aşağıkekliktepe village, on manured soil, 37°18'N–37°36'E, 531 m, 09.04.2011, K. 7307.

4. *Conocybe deliquescens* Hauskn. & Krisai  
Yavuzeli, Aşağıkekliktepe village, in grass, 37°18'N–37°36'E, 531 m, 09.04.2011, K. 7310.

**Cortinariaceae** R. Heim ex Pouzar

5. *Galerina graminea* (Velen.) Kühner  
Yavuzeli, Halilbaşı village, meadow, 37°17'N–37°34'E, 551 m, 13.04.2013, K. 7787.

**Cyphellaceae** Lotsy

6. *Chondrostereum purpureum* (Pers.) Pouzar  
Şehitkâmil, Dülükbaba picnic area, on decaying *Salix* sp. stump, 37°07'N–37°19'E, 1025 m, 10.11.2013, K. 8273.

**Dacrymycetaceae** J. Schröt.

7. *Dacrymyces capitatus* Schwein.  
Yavuzeli, Çimenli village, on decaying *Quercus* sp. twigs, 37°18'N–37°36'E, 542 m 09.03.2014, K. 8558.

**Diplocystidiaceae** Kreisel

8. *Astraeus hygrometricus* (Pers.) Morgan  
Yavuzeli, Çimenli village, among leaf litter under *Quercus* sp., 37°17'N–37°34'E, 611 m, 02.12.2012, K. 7802.

**Ganodermataceae** Donk

9. *Ganoderma adpersum* (Schulzer) Donk  
Yavuzeli, Halilbaşı village, on *Salix* sp. stump, 37°16'N–37°31'E, 564m, 16.03.2014, K. 8660.

10. *Ganoderma applanatum* (Pers.) Pat.  
Yavuzeli, Halilbaşı village, on decaying *Populus* sp. stump, 37°16'N–37°30'E, 618 m, 13.04.2013, K. 7898.

**Gomphidiaceae** Maire ex Jülich

11. *Chroogomphus rutilus* (Schaeff.) O.K. Mill.  
Şehitkâmil, Dülükbaba picnic area, among grass, in pine forest, 37°06'N–37°20'E, 1000 m, 30.11.2012, K. 7626.

**Hygrophoraceae** Lotsy

12. *Ampulloclitocybe clavipes* (Pers.) Redhead,  
Lutzoni, Moncalvo & Vilgalys  
Yavuzeli, Küçükkarakuyu village, among leaf litter under *Quercus* sp., 37°20'N–37°32'E, 962 m, 02.12.2011, K. 7341.

**Hymenochaetaceae** Imazeki & Toki

13. *Phellinus igniarius* (L.) Quél.  
Yavuzeli, Sarıbuğdaylı village, on *Salix* sp. stump, 37°16'N–37°31'E, 567 m, 20.04.2012, K. 7416.

**Incertae cedis**

14. *Panaeolus papilionaceus* (Bull.) Quél.  
Yavuzeli, Aşağıkekliktepe village, on manured soil, 37°18'N–37°37'E, 574 m 09.04.2011, K. 7308.

**Inocybaceae** Jülich

15. *Inocybe bongardii* (Weinm.) Quél.  
Yavuzeli, Çimenli village, among needle litter in pine forest, 37°17'N–37°34'E, 564 m, 02.12.2012, K. 7783; 09.03.2014, K. 8575.

**Marasmiaceae** Roze ex Kühner

16. *Macrocyttidia cucumis* (Pers.) Joss.  
Yavuzeli, Çimenli village, among grass in pine forest, 37°17'N–37°34'E, 549 m, 02.12.2012, K. 7792.

17. *Marasmius epodius* Bres.  
Yavuzeli, Çimenli village, çayır, toprak üzeri, 37°17'N–37°34'E, 551 m, 02.12.2012, K. 7779.

18. *Marasmius wynneae* Berk. & Broome  
Yavuzeli, Küçükkarakuyu village, on leaf litter under *Quercus* sp., 37°17'N–37°34'E, 551 m, 02.12.2011, K. 7798.

**Meruliaceae** P. Karst.

19. *Abortiporus biennis* (Bull.) Singer  
Yavuzeli, Halilbaşı village, on decaying *Populus* sp. trunk, 37°16'N–37°31'E, 553 m 01.12.2012, K. 7773.

20. *Bjerkandera adusta* (Willd.) P. Karst.  
Yavuzeli, Halilbaşı village, on decaying *Populus* sp. trunk, 37°17'N–37°36'E, 552 m 20.04.2011, K. 7417.

**Mycenaceae** Roze

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

Yavuzeli, Küçükkarakuyu village, among leaf litter under *Quercus* sp., 37°20'N–37°32'E, 884 m, 02.12.2012, K. 7339.

22. *Mycena seynii* Quél.

Şehitkâmil, Dülükbaba picnic area, on decaying pine cone, 37°07'N–37°19'E, 16.11.2012, 1033 m, K. 7508.

**Niaceae** Jülich

23. *Cyphelopsis anomala* (Pers.) Donk  
Yavuzeli, Halilbaşı village, on decaying *Populus* sp. twigs, 37°16'N–37°31'E, 585 m, 15.02.2014, K.

24. *Flagelloscypha minutissima* (Burt) Donk  
Yavuzeli, Halilbaşı village, on dead twigs, 37°16'N–37°31'E, 573 m, 09.03.2014, K. 8584.

**Omphalotaceae** Bresinsky

25. *Gymnopus dryophilus* (Bull.) Murrill  
Yavuzeli, Küçükkarakuyu village, among leaf litter under *Quercus* sp., 37°21'N–37°32'E, 953 m 02.12.2011, K.7335.

26. *Gymnopus ocior* (Pers.) Antonín & Noordel.  
Yavuzeli, Küçükkarakuyu village, among leaf litter under *Quercus* sp., 37°21'N–37°32'E, 953 m 02.12.2011, K. 7337.

27. *Gymnopus quercophilus* (Pouzar) Antonín & Noordel.

Yavuzeli, Çimenli village, on decaying *Quercus* sp. leaves, 37°16'N–37°34'E, 598 m, 09.03.2014, K. 8562.

28. *Omphalotus olivascens* H.E. Bigelow, O.K. Mill. & Thiers

Yavuzeli, Halilbaşı village, on decaying *Populus* sp. trunk, 37°16'N–37°31'E, 566 m, 27.10.2013, K.8149.

**Physalacriaceae** Corner

29. *Armillaria mellea* (Vahl) P. Kumm.  
Yavuzeli, Çimenli village, around *Populus* sp. stump, 37°17'N–37°34'E, 5431 m, 09.03.2014, K. 8569.

**Pleurotaceae** Kühner

30. *Pleurotus ostreatus* (Jacq.) P. Kumm.  
Yavuzeli, Sarıbuğdaylı village, on *Salix* sp. stump, 37°18'N–37°31'E, 830 m 13.04.2013, K. 7905.

**Pluteaceae** Kotl. & Pouzar

31. *Pluteus romellii* (Britzelm.) Sacc.  
Yavuzeli, Halilbaşı village, on wet ground under *Populus* sp., 37°16'N–37°31'E, 567 m 19.05.2013, K. 8053.

32. *Volvopluteus gloiocephalus* (DC.) Vizzini, Contu & Justo

Yavuzeli, Çimenli village, among grass, 37°17'N–37°34'E, 577 m, 02.12.2012, K. 7801.

**Polyporaceae** Fr. ex Corda

33. *Fomes fomentarius* (L.) Fr.  
Yavuzeli, Sarıbuğdaylı village, on *Salix* sp. trunk, 37°18'N–37°30'E, 616 m 16.03.2014, K. 8669.

34. *Lentinus tigrinus* (Bull.) Fr.  
Yavuzeli, Sarıbuğdaylı village, around *Salix* sp. stump, 37°18'N–37°30'E, 614 m 13.04.2013, K. 7903.

35. *Trametes hirsuta* (Wulfen) Lloyd  
Şehitkâmil, Dülükbaba picnic area, on stump, 37°07'N–37°19'E, 1087 m, 30.03.2013, K. 7838.

36. *Trametes trogii* Berk.  
Yavuzeli, Halilbaşı village, on decaying *Populus* sp. trunk, 37°18'N–37°36'E, 542m, 27.10.2013, K. 8148.

**Psathyrellaceae** Vilgalys, Moncalvo & Redhead

37. *Coprinellus disseminatus* (Pers.) J.E. Lange  
Yavuzeli, Halilbaşı village, among leaf litter under *Populus* sp., 37°16'N–37°31'E, 577 m 16.03.2013, K. 7807.

38. *Coprinellus micaceus* (Bull.) Vilgalys, Hopple & Jacq. Johnson  
Yavuzeli, Halilbaşı village, on dead *Populus* sp. trunk, 37°16'N–37°31'E, 568 m 16.03.2013, K. 7804; 575 m 13.04.2013, K. 7900.

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

Yavuzeli, Sarıbuğdaylı village, around *Populus* sp. trunk, 37°18'N–37°31'E, 633 m, 27.10.2013, K. 8158.

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

Yavuzeli, Halilbaşlı village, on cow dung, 37°16'N–37°31'E, 568 m, 16.03.2014, K. 8664.

41. *Parasola auricoma* (Pat.) Redhead, Vilgalys & Hopple

Yavuzeli, Aşağıkekliktepe village, among grass, 37°18'N–37°36'E, 542 m, 09.04.2011, K. 7309.

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

Yavuzeli, Çimenli village, among leaf litter under *Quercus* sp., 37°17'N–37°34'E, 551 m, 09.03.2014, K. 8557.

43. *Psathyrella candolleana* (Fr.) Maire

Yavuzeli, Halilbaşlı village, around *Populus* sp. stump, 37°16'N–37°31'E, 570 m, 13.04.2013, K. 7901.

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

44. *Rhizopogon luteolus* Fr.

Yavuzeli, Halilbaşlı village, under pine, 37°16'N–37°31'E, 565 m, 19.05.2013, K. 8052; Çimenli village, in pine forest, 37°16'N–37°34'E, 628 m, 16.03.2014, K. 8654.

**Schizophyllaceae** Quél.

45. *Schizophyllum commune* Fr.

Yavuzeli, Büyükkarakuyu village, on *Pinus brutia* Ten stump, 37°14'N–37°31'E, 772 m, 20.04.2012, K. 7322.

**Stereaceae** Pilát

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

Yavuzeli, Halilbaşlı village, on *Quercus* sp. trunk, 37°16'N–37°31'E, 562 m, 19.05.2013, K. 7899.

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

47. *Agrocybe cylindracea* (DC.) Maire

Yavuzeli, Halilbaşlı village, around *Populus* sp. stump, 37°17'N–37°32'E, 543 m, 16.03.2014, K. 7803; Sarıbuğdaylı village, 585 m, 13.03.2013, K. 7904.

48. *Agrocybe praecox* (Pers.) Fayod

Yavuzeli, Halilbaşlı village, on soil under *Populus* sp., 37°16'N–37°31'E, 575 m, 27.10.2013, K.8151.

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

Yavuzeli, Çimenli village, on dung, 37°17'N–37°34'E, 551 m, 16.02.2014, K. 8488.

50. *Stropharia coronilla* (Bull. ex DC.) Quél.

Yavuzeli, Çimenli village, among grass, 37°17'N–37°34'E, 594 m, 02.12.2012, K. 7777.

**Suillaceae** Besl & Bresinsky

51. *Suillus luteus* (L.) Roussel

Yavuzeli, Büyükkarakuyu village, in pine forest, 37°14'N–37°31'E, 765 m, 02.12.2012, K. 7775.

**Tricholomataceae** R. Heim ex Pouzar

52. *Arrhenia rickenii* (Hora) Watling

Yavuzeli, Çimenli village, among moss, 37°17'N–37°34'E, 594 m, 02.12.2012, K. 7800.

53. *Arrhenia spathulata* (Fr.) Redhead

Yavuzeli, Akbayır village, among moss, 37°23'N–37°33'E, 548 m, 02.12.2011, K. 7323.

54. *Lepista nuda* (Bull.) Cooke

Yavuzeli, Küçükkarakuyu village, among leaf litter under *Quercus* sp., 37°20'N–37°32'D, 864 m, 20.04.2012, K. 7340; Şehitkâmil, Dülükbaba picnic area, among needle litter in pine forest, 37°07'N–37°19'E, 1053 m, 30.03.2013, K. 7837.

55. *Myxomphalia maura* (Fr.) Hora

Yavuzeli, Akbayır village, among grass, 37°23'N–37°33'E, 623 m, 27.12.2009, K. 6987.

56. *Pseudoclitocybe cyathiformis* (Bull.) Singer

Yavuzeli, Çimenli village, among grass in pine forest, 37°17'N–37°34'E, 551 m, 02.12.2012, K. 7797.

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

Şehitkâmil, Dülükbaba picnic area, in pine forest, 37°07'N–37°20'E, 1095 m, 21.03.2014, K. 8689.

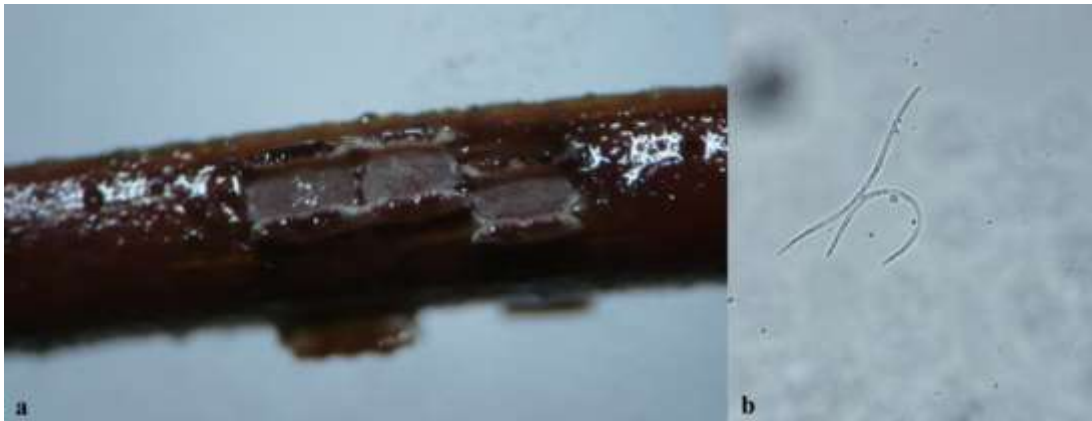


Figure 2. *Cyclaneusma minus*: a. ascocarps, b. spores

#### 4. Conclusions

In Yavuzeli and Şehitkâmil districts 73 taxa of macrofungi, belonging to 36 families and 57 genera were determined. In research area *Leotiomycetes* is represented by 2 taxa (*Helotiaceae* 1, *Rhizomataceae* 1), *Peizizomycetes* is represented by 8 taxa (*Ascobolaceae* 1, *Helvellaceae* 3, *Morchellaceae* 1, *Pezizaceae* 1, *Pyronemataceae* 1, *Valsaceae* 1), *Agaricomycetes* is represented by 63 taxa (*Agaricaceae* 8, *Auriculariaceae* 1, *Bolbitiaceae* 2, *Cyphellaceae* 1, *Diplocystidiaceae* 1, *Ganodermataceae* 2, *Gomphidiaceae* 1, *Hygrophoraceae* 1, *Hymenochaetaceae* 1, *Inocybaceae* 2, *Marasmiaceae* 3, *Meruliaceae* 2, *Mycenaceae* 2, *Niaceae* 2, *Omphalotaceae* 4, *Physalacriaceae* 1, *Pleurotaceae* 1, *Pluteaceae* 2, *Polyporaceae* 4, *Psathyrellaceae* 8, *Rhizopogonaceae* 1, *Schizophyllaceae* 1, *Stereaceae* 1, *Strophariaceae* 5, *Suillaceae* 1, *Tricholomataceae* 5) and *Dacrymycetes* is represented by 1 taxon (*Dacrymycetaceae* 1). All of the taxa are new for the districts and *Cyclaneusma minus* is new, at genus level, for the mycobiota of Turkey.

Twenty five (34.25%) of the 73 taxa are edible while 42 (58%) are inedible. Among 25 edible taxa, three of them (*Agaricus campestris*, *Pleurotus ostreatus* and *Volvopluteus gloiocephalus*) are collected and consumed in the region. Tough six (8.22%) poisonous mushrooms exist in the districts, 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 Yavuzeli and Şehitkamil districts.

	Total taxa	Number of identical taxa	Similarity percentage (%)
Kaya et al. (2012)	53	41	77,35
Solak et al.(2014)	47	9	19,14
Solak et al. (2011)	52	13	25,00
Kaya et al. (2004)	56	25	44,64
Kaya (2009a)	105	24	22,85
Kaya (2005)	77	29	37,66

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