

Macrofungi of The Kızılırmak Basin (Kırıkkale)

Kızılırmak Havzası (Kırıkkale) Makrofungusları

Research Article

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ABSTRACT

In this study; the macrofungal diversity of the Kırıkkale-Kızılırmak Basin was investigated. In the investigation area; 38 macrofungi were collected in the years 2009-2011 in autumn and spring. As a result of the field and laboratory studies, 38 species belonging to 29 genera, 16 families and 2 classes have been identified. 2 of the identified species belong to *Ascomycetes* and 36 to *Basidiomycetes*.

Key Words

Macrofungi, The Kızılırmak Basin, Kırıkkale, Turkey Mycoflora

ÖZET

Bu çalışmada, Kırıkkale-Kızılırmak Havzası makrofungus çeşitliliği araştırılmıştır. Çalışma alanında; 38 makrofungus 2009-2011 yıllarında sonbahar ve ilkbaharda toplanmıştır. Arazi ve laboratuvar çalışmaları sonucunda, 2 sınıf, 16 familya ve 29 cinse ait 38 tür tespit edilmiştir. Teşhis edilen türlerin 2'si *Ascomycetes*, 36'sı *Basidiomycetes*'e aittir.

Anahtar Kelimeler

Macrofungi, Kızılırmak Havzası, Kırıkkale, Türkiye Mikoflorası

Article History: Received June 30, 2013; Revised July 15, 2013; Accepted July 29, 2013; Available Online: September 1, 2013

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INTRODUCTION

In this study; the macrofungi flora of the Kırıkkale-Kızılırmak Basin were been investigated. The Kızılırmak River arises from the territory of Turkey and again pours from the territory of Turkey into the sea. Delice, Devrez and Gökırmak are the branches of the Kızılırmak. The Kızılırmak passes Sivas, Kayseri, Nevşehir, Kırşehir, Kırıkkale, Ankara, Aksaray, Cankırı, Corum, and Samsun provinces respectively and reaches the Black Sea from the Bafra promontory (Figure 1).

The purpose of this study was to investigate the macrofungi of the Kırıkkale-Red River Basin and to provide information on the diversity of macrofungi in Kırıkkale in Turkey. The macrofungi of Kırıkkale have not been studied previously, thereby increasing the importance of the study.

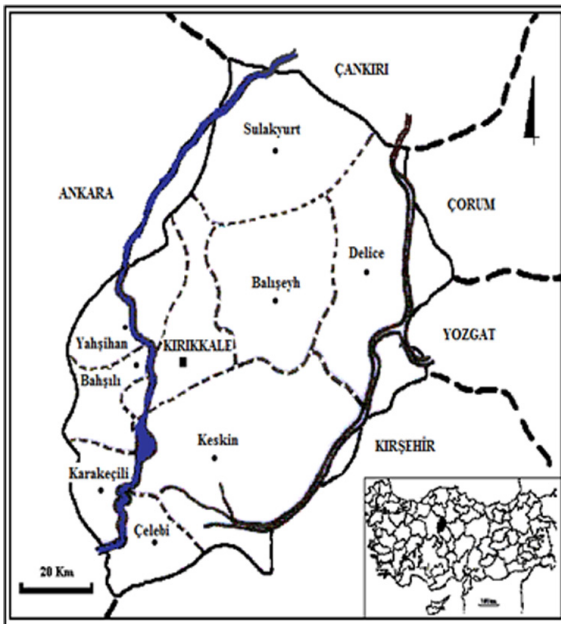


Figure 1. The map of research area.

MATERIALS AND METHOD

Macrofungi samples were collected in suitable climatic conditions that are usually in spring and autumn between 2009 and 2011. Morphologic features of fungi and field data were recorded and macrofungi were enumerated separately. Microscope and reagents (Melzer reagent, 5% KOH, cotton blue, IKI, etc.) were used for the identification of fungi.

The specimens were identified according to these references: Breitenbach and Kränzlin (1984, 1986, 1991, 1995, 2000), Eriksson et al. (1973-1978, 1981-1984), Marchand (1971-1986), Moser (1983), Capelli (1984), Bresinsky and Besl (1990), Ellis and Ellis (1990), Pacioni (1993), Lincoff (1996), Vesrterhold (2000), Riva (2003a, 2003b), Neville and Poumarat (2004), Bernicchia (2005), Kränzlin (2005), Phillips (2006), Medardi (2006), Robich (2007), Solak et. al, (2007), Parra (2008), Sesli and Denchev (2008) [1-26]. Taxa, family, and author citations were listed according to Cannon and Kirk (2007) and Kirk et al. (2008) [27-28]. Family and species names are listed in alphabetical order in the text. All specimens are deposited in the Kırıkkale University.

Abbreviations

PG: Collection number of Perihan Guler, İK: Collection number of İlknur Kunduz

RESULTS

All species are listed in alphabetic order of family names.

ASCOMYCOTA

PEZIZALES

HELVELLACEAE

1. *Helvella atra* J. König

Çelebi-Sulübük, the soil above, 852 m, 25.04.2010, İK 1168

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

Sulakyurt, pine-oak forest, the soil above, 1128 m, 24.04.2010, İK 1123; Çelebi- Sulübük, the soil above, 852 m, 25.04.2010, İK 1171.

BASIDIOMYCOTA

AGARICALES

AGARICACEAE

3. *Agaricus campestris* L. var. *campestris*

Sulakyurt, pine-oak forest, the soil above, 1128 m, 05.12.2009, İK 1053, Sulakyurt, the soil above, 1128 m, 07.06.2011, PG 1.

4. *Bovista nigrescens* Pers.

Sulakyurt, pine-oak forest, the soil above, 1128 m, 05.12.2009, İK 1051; Sulakyurt, pine-oak forest, the soil above, 1128 m, 07.06.2011, PG 6

5. Bovista plumbea Pers.

Sulakyurt, pine-oak forest, the soil above, 1128 m, 19.06.2010, *İK* 1242; Sulakyurt, pine-oak forest, the soil above, 1128 m, 07.06.2011, *PG* 7.

6. Coprinopsis atramentaria (Bull.) Redhead, Vilgalys & Moncalvo

Yahşihan- near of Irmak, the soil above, 691 m, 11.04.2010, *İK* 1110, Yahşihan- near of Irmak, the soil above, 691 m, 08.06.2011, *PG* 13.

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

Sulakyurt, the soil above, 1128 m, 20.06.2010 *İK* 1243, Sulakyurt, the soil above, 1128 m, 07.06.2011, *PG* 10.

8. Coprinellus impatiens (Fr.) J.E. Lange

Bahşılı-Celal Bayar Park, above of leaf debris, 682 m, 04.12.2009, *İK* 1020.

9. Lepiota erminea (Fr.) P. Kumm.

Sulakyurt, pine-oak forest, the soil above, 1128 m, 20.06.2010, *İK* 1245.

10. Leucoagaricus leucothites (Vittad.) Wasser
Sulakyurt, the soil above, 1128 m, 20.06.2010, *İK* 1252.**11. Lycoperdon lividum** Pers.

Sulakyurt, the soil above, 1128 m, 05.12.2009, *İK* 1056.

12. Lycoperdon mammiforme Pers.

Sulakyurt, the soil above, 1128 m, 19.06.2010, *İK* 1232; Sulakyurt, the soil above, 1128 m, 10.06.2011, *PG* 11.

13. Lycoperdon umbrinum Pers.

Sulakyurt, the soil above, 1128 m, 17.11.2009, *İK* 1018; Sulakyurt, the soil above, 1128 m, 10.06.2011, *PG* 14.

AMANITACEAE**14. Amanita vaginata** (Bull.) Lam.

Sulakyurt, pine-oak forest, the soil above, 1128 m, 24.04.2010, *İK* 1137; Sulakyurt, pine-oak forest, the soil above, 1128 m, 19.06.2010, *İK* 1217; Sulakyurt, pine-oak forest, the soil above, 1128 m, 06.06.2010, *İK* 1217; Sulakyurt, pine-oak forest, the soil above, 1128 m, 07.06.2011, *PG* 3.

BOLBITIACEAE**15. Agrocybe cylindracea** (DC.) Maire

Merkez-Irmak Town, log on, 794 m, 10.04.2010, *İK* 1068, Merkez-Irmak Town, the soil above 794 m, 10.04.2010, *İK* 1090; Merkez-Irmak Town, log on, 794 m, 10.04.2010, *İK* 1082, Merkez-Irmak Town, under willow tree, 794 m, 10.04.2010, *İK* 1079, Sulakyurt, pine-oak forest, the soil above, 1128 m, 11.04.2010, *İK* 1097; Sulakyurt, pine-oak forest, the soil above, 1128 m, 07.06.2011, *PG* 2.

BOLETACEAE**16. Boletus rhodopurpureus** Smotl.

Sulakyurt, pine-oak forest, the soil above, 1128 m, 19.06.2010, *İK* 1226; Sulakyurt, pine-oak forest, the soil above, 1128 m, 07.06.2011, *PG* 5.

DIPLOCYTIDIACEAE**17. Astraeus hygrometricus** (Pers.) Morgan

Sulakyurt, pine-oak forest, the soil above, 1128 m, 19.06.2010, *İK* 1236, Sulakyurt, the soil above, 1128 m, 07.06.2011, *PG* 4.

HYMENOGASTRACEAE**18. Coltricia perennis** (L.) Murrill

Sulakyurt, the soil above, 1128 m, 19.06.2010, *İK* 1235, Sulakyurt, the soil above, 1128 m, 10.06.2011, *PG* 9.

19. Phellinus igniarius (L.) Quél.

Sulakyurt, above plum tree, 1128 m, 20.06.2010, *İK* 1254; Sulakyurt, above plum tree, 1128 m, 10.06.2011, *PG* 19.

MARASMIACEAE**20. Crinipellis scabella** (Alb. & Schwein.) Murrill

Sulakyurt, pine-oak forest, the soil above, 1128 m, 18.11.2009, *İK* 1036.

21. Gymnopus dryophilus (Bull.) Murrill

Sulakyurt, pine-oak forest, the soil above, 1128 m, 19.06.2010, *İK* 1239; Sulakyurt, pine-oak forest, the soil above, 1128 m, 07.06.2011, *PG* 8.

MERULIACEAE**22. Bjerkandera adusta** (Willd.) P. Karst.

Bahşılı- Celal Bayar Park, the log on, 682 m, 05.06.2010, *İK* 1201, Bahşılı- Celal Bayar Park, the log on, 682 m, 08.06.2011, *PG* 16.

PHYSALACRIACEAE**23. *Armillaria mellea*** (Vahl) P. Kumm.

Bahşılı-Celal Bayar Park, the log on, 682 m, 04.12.2009, *İK* 1063; Bahşılı-Celal Bayar Park, the log on, 682 m, 08.06.2011, *PG* 15.

24. *Flammulina velutipes* (Curtis) Singer var. **velutipes**

Bahşılı-Celal Bayar Park, the log on, 682 m, 04.12.2009, *İK* 1065.

POLYPORACEAE**25. *Lentinus tigrinus*** (Bull.) Fr.

Yahşihan- near of Irmak, the log on, 691 m, 11.04.2010, *İK* 1107; Çelebi-Sulubük, the log on, 852 m, 25.04.2010, *İK* 1208, Merkez-Irmak Town, the soil above, 794 m, 06.06.2010, *İK* 1209.

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

Bahşılı- Celal Bayar Park, the log on, 682 m, 02.05.2010, *İK* 1187, Bahşılı- Celal Bayar Park, the log on, 682 m, 08.06.2011, *PG* 17.

27. *Trametes versicolor* (L.) Lloyd

Yahşihan near of Irmak, the log on, 691 m, 11.04.2010, *İK* 1112; Sulakyurt pine-oak forest, the log on, 1128 m, 24.04.2010, *İK* 1113; Sulakyurt pine-oak forest, the log on, 1128 m, 10.06.2010, *PG* 23.

PSATHYRELLACEAE**28. *Coprinellus micaceus*** (Bull.) Vilgalys, Hoppie & Jacq. Johnson

Sulakyurt, pine-oak forest, the soil above, 1128 m, 11.04.2010, *İK* 1096, Merkez-Irmak Town, above of leaf debris, 794 m, 06.06.2010, *İK* 1210, Sulakyurt, pine-oak forest, the soil above, 1128 m, 07.06.2011, *PG* 12.

29. *Psathyrella candolleana* (Fr.) Maire

Merkez- Karacaali, the soil above, 1040 m, 16.11.2009, *İK* 1003, Sulakyurt pine-oak forest, the soil above, 1128 m, 10.04.2010, *İK* 1103; Sulakyurt pine-oak forest, the soil above, 1128 m, 10.06.2011, *PG* 20.

30. *Psathyrella tephrophylla* (Romagn.) M.M. Moser

Sulakyurt pine-oak forest, the soil above, 1128 m, 20.06.2010, *İK* 1246; Sulakyurt pine-oak forest, the soil above, 1128 m, 10.06.2011, *PG* 21.

RUSSULACEAE**31. *Russula emetica*** (Schaeff.) Pers.

Sulakyurt, pine-oak forest, the soil above, 1128 m, 19.06.2010, *İK* 1231.

32. *Russula foetens* Pers.

Sulakyurt, pine-oak forest, the soil above, 1128 m, 19.06.2010, *İK* 1229.

33. *Russula melliolens* Quél.

Sulakyurt, pine-oak forest, the soil above, 1128 m, 19.06.2010, *İK* 1219.

STEREACEAE**34. *Stereum hirsutum*** (Willd.) Pers.

Sulakyurt, pine-oak forest, the log on, 1128 m, 17.11.2009, *İK* 1019, Merkez-Irmak Town, the log on, 794 m, 10.04.2010, *İK* 1099, Sulakyurt, pine-oak forest, the soil above, 1128 m, 10.06.2011, *PG* 22.

STROPHORIACEAE**35. *Hebeloma sordescens*** Vesterh.

Çelebi-Sulubük, the soil above, 852 m, 25.04.2010, *İK* 1114.

SUILLACEAE**36. *Suillus granulatus*** (L.) Roussel

Sulakyurt, pine-oak forest, the soil above, 1128 m, 18.11.2009, *İK* 1022.

TRICHOLAMATAACEAE**37. *Delicatula integrella*** (Pers.) Fayod

Merkez-Irmak Town, the soil above, 794 m, 04.12.2009, *İK* 1030, Merkez-Irmak Town, the soil above, 794 m, 10.04.2010, *İK* 1052.

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

Sulakyurt, pine-oak forest, the soil above, 1128 m, 24.04.2010, *İK* 1141, Çelebi- Sulubük, the soil above, 852 m, 25.04.2010, *İK* 1140, Çelebi- Sulubük, the soil above, 852 m, 08.06.2011, *PG* 18.

DISCUSSION

As a result, 16 families and 38 species belonging to 29 genera were found. Two were from specimens collected from the research field (5%) Ascomycota branch, thirty six of them (95%) belonged to the Basidiomycota branch. The identified species, edible (61%), the undefeated (21%), completely unknown edibility feature (18%) properties. In the

research area, mixed black pine-oak, oak forests and fields and wild pear and hawthorn trees, are frequently encountered in areas of steppe. Overall, the identified preferences of 38 species were for soil above ground, above the ruins of trees, above cut logs and over trees.

ACKNOWLEDGEMENTS

This financial support by The Scientific and Technological Research Council of Turkey (TÜBİTAK) via grant numbered TÜBİTAK 210T083 and Kırıkkale University Scientific Research Projects (SRP) Coordination Unit via grant numbered BAP-2009-32 is acknowledged gratefully.

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