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MACROFUNGI OF MUĞLA PROVINCE

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ABSTRACT

This study is based on the macrofungi specimens collected from Muğla province between 2001 and 2002. As a result this study 31 taxon were determines. 147 taxon were determined according to the previous studies done in the district. Therefore the number of total taxa have reached to 178.

Keywords: Turkish Macromycota, Taxonomy, Muğla.

MUĞLA YÖRESİNİN MAKROFUNGUSLARI

ÖZET

Bu çalışma 2001 and 2002 yılları arasında Muğla ilinden toplanan makrofungus örnekleri üzerinde yapılmıştır. Çalışmanın sonunda 31 takson belirlenmiştir. Yörede daha önce yapılan çalışmalar sonucunda 147 tür tespit edilmiştir. Böylece Muğla da bulunan makrofungus takson sayısı 178'e ulaşmıştır.

Anahtar Kelimeler : Türkiye Makromikotası, Taksonomi, Muğla.

1. INTRODUCTION

In Turkey, many studies on macromycota have been carried out, especially in the last two decades [1]. However, the macromycota of many provinces have not been determined yet. Even the studies on macromycota have not been made in some province. So far, several studies have been done for determination of the macrofungi species growing in Muğla. Many species of macrofungi have been reported by Watling & Işıloğlu 1991[2], Işıloğlu 1992; 2001[3,4], Işıloğlu & Watling 1992 [5], Işıloğlu & Öder 1995 [6], Allı & Işıloğlu 2000 [7].

Muğla province is in Nortwest Anatolia (Figure 1). The collection areas are located in a region possessing a Mediterranean Climate, according to

Emberger's formula [8]. Therefore typical Mediterrenean plants are widespread. Because of the suitable climate and type of common vegetation, the region has a rich macromycota.

The aim of this study was to determine the macromycota of Muğla and to add some new taxa to the macromycota of the province

2. MATERIAL AND METHOD

The specimens were collected during field trips in Muğla province between 2001 and 2002. The morphological and ecological characteristics of the macrofungi were recorded and photographed in their natural habitats. The macrofungi specimens were brought to the laboratory. Their spore prints were taken and spores were photographed. Dried specimens were numbered and placed in locked bags. In addition, they have been put in deep freeze for a week to protect from internal and external parasite attacks.

The specimens were identified by the use of reference books [9 10, 11,12]. All specimens have been kept at the herbarium of Muğla University.

3. RESULTS

The taxa determined in this research area, their localities, dates of collection and herbarium numbers have been given below.

Ascomycetes
Morchellaceae
1. *Verpa conica* Swartz ex Pers.
Muğla, Ula, Tokuş passage, in conifer forest, 07.04.2002, S.1232; Yaraş, in conifer forest, 02.04.2002, FY.1229.
Pezizaceae
2. *Tarzetta catinus* (Holmsk. Ex Fr.) Korf & J. K. Rogers
Muğla, Ula- Ulukent, in *Pinus* area 19.04.2002, S.1245.
Basidiomycetes
Agaricaceae
3. *Agaricus deylii* Pilat
Muğla, Ula, near the road side, 10.01.2001, FY. 1147
4. *Agaricus squamulifer* (Möller) Pilat var. *squamulifer* (Möller) Pilat
Muğla, Ula, near the field, 10.01.2001, FY. 1146.
Amanitaceae
5. *Amanita citrina* (Schff.) S. F. Gray
Muğla, Ula, Çiçekli village, in *Pinus* area16.10.2002, S. 1280.

6. *Amanita ovoidea* (Bull.: Fr.) Quél.
Muğla, Ula, Çiçekli village, in *Pinus* area, 13.10.2002, S. 1269.
7. *Amanita pantherina* (DC.: Fr.) Secr.
Muğla, Ula-Ulukent, in conifer forest, 29.10.2002, FY. 1380.

Boletaceae

8. *Boletus fragrans* Vitt.
Muğla, Ula, Çiçekli village, in mixed forest, 16.10.2002, FY. 1279.
9. *B. speciosus* Frost
Muğla, Ula, Çiçekli village, in mixed forest, 16.10.2002, S. 1296.
10. *B. versicolor* Rostk
Muğla, Ula, Çiçekli village, in mixed forest,16.10.2002, FY. 1295.

Cantharellaceae

11. *Cantharellus cibarius* Fr.
Muğla, Ula-Ulukent, in conifer forest, 29.10.2002, S. 1390.

Clathraceae

12. *Clathrus ruber* Micheli: Pers.
Muğla, Yerkesik, Kıran area, 02.10.2002, FY. 1402.

Gomphaceae

13. *Gomphus clavatus* S. F. Gray
Muğla, Fethiye, Arpacık village, Çal mount, in *Cedrus* forest, S. 1115.

Hygrophoraceae

14. *Hygrophorus camarophyllus* (Alb. &Schw.: Fr.) Dumée
Muğla, Ula-Ulukent, in conifer forest, 29.10.2002, FY. 1388.
15. *Hygrocybe subglobispora* (P. D. Orton) Mos.
Muğla, Ula-Ulukent, 24,10,2002, S. 1365.

Lepiotaceae

16. *Lepiota clypeolaria* (Bull.: Fr.) Kummer
Muğla, Ula, Çiçekli Village, in open area of the pine forest, 25.11.2001, FY. 1203.
17. *Leucoagaricus pudicus* Bull.
Muğla, Ula, in pasture, 10.11.2001, S. 1192.

Paxillaceae

18. *Tapinella panuoides* (Fr.: Fr.) Gilb.
Muğla, Fethiye-İnlice, on barks of *Cupressus* , 29.01.2001, S. 1169.

Polyporaceae

19. *Gloeophyllum abietinum* Fr.: r.
Muğla, Dalaman, bank of the Dalaman River, 29.01.2001, FY. 1161

Ramariaceae

20. *Ramaria fumigata* (Peck) Corner
Muğla, Ula, in mixed forest, 13.11.2001, S. 1193.
21. *Ramaria obtusissima* (Peck) Corner

Muğla, Ula, Çiçekli Village, in conifer area, 13.10.2002, FY. 1274.

Russulaceae

22. *Lactarius acerrimus* Britz.

Muğla, Ula, in *Pinus* area,18.10.2002, S. 1300.

Sclerodermataceae

23.*Scleroderma meridionale* Demoulin & Malençon

Muğla, Yerkesik, Kıran area, in pasture, 02.10.2002, FY. 1401.

24. *Scleroderma verrucosum* Bull. ex Pers.

Muğla, Yerkesik, Kıran area, in pasture, 02.10.2002, FY. 1395.

Sparassidiaceae

25. *Sparassis crispa* Wulf.: Fr.

Muğla, Ula, on pine stumps, 15.10.2002, S. 1394.

Thelephoraceae

26. *Hydnellum careruleum* (Hornem.) P. Karst.

Muğla, Yılanlı mount, near the shrub, 06.10.2002, S. 1262.

27. *Hydnellum ferrugineum* (Fr.: Fr.) Karst.

Muğla, Yılanlı mount, Çamoluk village in mixed forest, 19.11.2001, FY. 1206.

28. *Thelephora caryophyllea* (Schaeff.) Fr.

Muğla, Ula-Ulukent, on branches of the tree, 19.04.2002, S. 1246.

Tricholomataceae

29.*Collybia dryophila* (Bull.: Fr.) Kummer

Muğla, Ula, Elmalı village, Gacarlar area, in pine forest, 07.01.2001, FY. 1137.

30. *Melanoleuca cognata* (Fr.) K. & M.

Muğla, Ula, in grass, 10.12.2001, S. 1223.

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

Muğla, Ula, Çiçekli village, in mixed forest, 25.11.2001, FY. 1202.

The taxa determined with the previous studies have been listed below [2-7].

Ascomycetes

Helvellaceae

1. *Gyromitra esculenta* (Pers.) Fr.
2. *Helvella crispa* Fr.
3. *H. lacunosa* Afz.: Fr.
4. *H. leucopus* Pers.
5. *Paxina acetabulum* (L.) Kuntze
6. *P. leucomelas* (Pers.) Kuntze

Morchellaceae

7. *Morchella conica* Pers.
8. *M. elata* Fr.
9. *M. esculenta* Pers. ex St. Amans

Basidiomycetes

Agaricaceae

10. *Agaricus campestris* L.: Fr.
11. *A. cupreobrunneus (Schaeff. & Ster) Möller*
12. *A. variegans* Möller
13. *A. xanthodermus* Gen.

Amanitaceae

14. *Amanita caesarea* (Scop.: Fr.) Quél.
15. *A. phalloides* (Vaill.: Fr.) Secr.
16. *A. porphyria* (Fr.) Secr.
17. *A. vaginata* (Bull.: Fr.) Quél.
18. *Torrendia pulchella* Bres.

Astraeceae

19. *Astraeus hygrometricus* (Pers.) Morgan

Auriculariaceae

20. *Auricularia auricula-judae* (Bull.: St. Am.) Berk

Bolbitiaceae

21. *Bolbitus vitellinus* (Pers.) Fr.
22. *Agrocybe cylindracea* (DC.: Fr.) Maire

Boletaceae

23. *Boletus fechtneri* Vel.
24. *B. satanas* Lenz
25. *Gyroporus castaneus* (Bull.: Fr.) Quél.
26. *Suillus bellinii* (Inz.) Marchand
27. *S. bovinus* (L.: Fr.) O. Kuntze
28. *S. collinitus* (L.: Fr.) O. Kuntze
29. *S. placidus* (Bon.) Singer

Coprinaceae

30. *Coprinus comatus* (Müler : Fr.) S. F. Gray
31. *C. disseminatus* (Pers.: Fr.) S. F. Gray
32. *C. ovatus* (Schaeffer: Fr.) Fr.
33. *C. picaceus* (Bull.) Fr.
34. *Lacrymaria lacrymabunda* (Bull.: Fr.) Pat.
35. *Panaeolus rickenii* Hora
36. *P. semiovatus* (Sow.) Wünsche
37. *Psathyrella candolleana* (Fr.) Mre.
38. *P. gracilis* (Fr.) Quél.

Corticiaceae

39. *Stereum hirsutum* (Wild : Fr.) S. F. Gray
40. *S. insignitum* Quél
41. *S. rugosum* (Pers.: Fr.) Fr.

Cortinariacea
42. *Hebeloma crustuliniforme* (Bull.: Fr.) Quél.
43. *H. sinapizans* (Paulet: Fr.) Gillet
44. *Inocybe fastigiata* (Schaeff.: Fr.) Quél.
45. *I. geophylla* (Sow.: Fr.) S. F. Gray
46. *I. geophhylla* (Sow.: Fr.) Kummer var. *lilacina* Gillet

Crepidotaceae
47. *Crepidotus calolepis* (Fr.) Kartsan
48. *C. luteolus* (Lamb.) Sacc.
49. *C. mollis* (Schaeff.: Fr.) Kummer
50. *C. subtilis* P. D. Orton
51. *C. variabilis* (Pers.: Fr.) Kummer

Entolomataceae
52. *Entoloma sinuatum* (Bull.. fr.) Kummer

Ganodermataceae
53. *Ganoderma adspersum* (Schulzer) Donk
54. *G. applanatum* (Per.: Wallr.) Pat
55. *G. lucidum* (Cut.: Fr.) Karst

Geastraceae
56. *Geastrum pectinatum* Pers.

Gomphidiaceae
57. *Chroogomphus rutilus* (Fr.) O.K. Miller

Hygrophoraceae
58. *Hygrophorus chrysodon* (Batsch) Fr.
59. *H. eburneus* (Bull.: Fr.) Fr.
60. *H. hypothejus* (Fr.: Fr.) Fr.
61. *H. persistens* (Britz.) Britz.

Hymenochaetaceae
62. *Inonotus hispidus* (Fr.) Karst.
63. *I. radiatus* (Fr.) Karst.
64. *Phellinus igniarius* (L.: Fr.) Quél.
65. *P. nigricans* (Fr.) Karst.
66. *P. pini* (Brot.: Fr.) Amer
67. *P. robustus* (Kast.) Bourd Galzin
68. *P. tuberuilosus* (Boumg.)Niemella

Lepiotaceae
69. *Lepiota sublaevigata* Bon & Boiffard
70. *Leucoagaricus leucothites* (Vitt.) S. Wasser
71. *Macrolepita excoriata* (Schaeff.: Fr.) Kummer
72. *M. mastoidea* (Fr.) Singer
73. *M. procera* (Scop.: Fr.) Sing.

Lycoperdaceae
74. *Bovista plumbea* Pers.
75. *Lycoperdon molle* Pers.
76. *L. perlatum* Pers.
Nidulariaceae
77. *Cyathus olla* Batsch : Pers.
Paxillaceae
78. *Omphalotus olearius* (DC.: Fr.) Sing
Phallaceae
79. *Phallus impudicus* L. ex Pers.
Pleurotaceae
80. *Lentinus tigrinus* (Bull.) Fr.
81. *Panellus serotinus* (Hoffm.. Fr) Kühner
82. *Pleurotus ostreatus* (Jacq : Fr.) Kummer
Plutaceae
83. *Pluteus aurantiorugosus* (Trog.) Sacc.
84. *Volvariella gloiocephala* (DC.: Fr.) Boekhout & Enderle
Polyporaceae
85. *Abortiporus biennis* (Bull.: Fr.) Singer
86. *Fomes fomentarius* (L.: Fr.) Fr.
87. *Funalia trogii* (Berk) Bond. & Sing
88. *Gloeophyllum sepiarium* (Wulf.: Fr.) Karst
89. *G. trabeum* (Pers.: Fr.) Mur.
90. *Heterobasidion annosum* (Fr.) Bref.
91. *Laetiporus sulphureus* (Fr.) Murr.
92. *Polyporus brumalis* Pers.: Fr.
93. *P. squamosus* (Huds.: Fr.) Fr.
94. *Spongipellis delectans* (Peck) Murrill
95. *Trametes versicolor* (L.: Fr.) Pilat
Ramariaceae
96. *Ramaria flava* (Schaeff.: Fr.) Quél.
Rhizopoganaceae
97. *Rhizopogon luteolus* Fr.
98. *R. roseolus* (Corda) Hollos
Russulaceae
99. *Russula chloroides* (Kromb.)Bres.
100. *R. cyanoxantha* Schaeff.: Fr.
101. *R. delica* Fr.
102. *R. densifolia* Gillet
103. *R. fellea* Fr.
104. *R. foetens* Pers.
105. *R. krombholzii* Schaeff.

106. *R. nigricans* (Bull.) Fr.
107. *R. obscura* Rommel
108. *R. ochroleuca* (Pers.) Fr.
109. *R. xerampelina* Schaeffer: Fr.
110. *Lactarius deliciosus* (L. ex Fr.) S. F. Gray
111. *L. deterrimus* Gröger
112. *L. quieticolor* Romagn.
113. *L. sanguifluus* (Paul.: Fr.) Fr.
114. *L. semisanguifluus* Heim & Leclair

Sclerodermataceae

115. *Pisolithus tinctorius* (Pers.) Cooke

Schizophyllaceae

116. *Schizophyllum commune* Fr.

Strophariaceae

117. *A. cylindricae* (D.C.: Fr.) Maire
118. *Hypholoma fasciculare* (Huds.: Fr.)Kumm.
119. *Pholiota carbonaria* (Fr.) Sing.
120. *Psilocybe merdaria* (Fr.) Ricken
121. *P. pratensis* P.D. Orton
122. *Stropharia aeruginosa* (Curtis ex Fr.) Quélet
123. *S. coronilla* (Bull.: Fr.) Quél.

Thelephoraceae

124. *Bankera violescens* (A. & S.: Fr.) Pouz.
125. *Sarcodon scabrosus* (Fr.) Karst.

Tremellaceae

126. *Tremella mesenterica* Retz.: Hook

Tricholomataceae

127. *Armillaria mellea* (Vahl.: Fr.) Kummer
128. *A. tabescens* (Scop.: Fr.) Singer
129. *Clitocybe clavipes* (Pers.: Fr.) Kummer
130. *C. geotropa* (Bull. ex Merat) Quél.
131. *C. odora* (Bull.: Fr.) Kumm.
132. *Cystoderma amianthinum* (Scop.) Fayod
133. *Hohenbuhelia petaloides* (Bull.: Fr.) Schulz
134. *H. rickenii* (Kühner) P.D.Orton
135. *Laccaria laccata* (Scop.. Fr.) Bk. et Br.
136. *Lepista nuda* (Bull. ex Fr.) Cooke
137. *L. saeva (Fr.)* P.D. Orton
138. *Marasmius androsaceus* (L: Fr.) Fr.
139. *Melanoleuca meloleuca* (Pers.: Fr.) Mre.
140. *Mycena epipterygia* (Scop.: Fr.) S. F. Gray
141. *M. pura* (Pers.: Fr.) Kumm.

142. *M. strobilicola* Fav. & Kühn.
143. *Tricholoma batschii* Gulden
144. *T. caligatum* (Viv.) Ricken
145. *T. terreum* (Shff.: Fr.) Kumm.
146. *T. ustale* (Schff.: Fr.) Kumm.

Tulostomataceae

147. *Tulostoma brumale* Pers.

4. DISCUSSION

At the end of in this study 31 taxa belonging to 18 families were determined from Muğla. With the addition of finding of previous studies, the number increased to 178. Among these 178 taxa 167 belong to *Basidiomycetes* and 11 to *Ascomycetes*.

The macromycota of Muğla appears to be similar to that of neighbouring regions [5, 6, 13]. This may be because of the similarity of the habitats. Similarities can be observed between the macromycota of Antalya and Muğla.The most common species in the both area are *Russula delica, Lactarius deliciosus, Morchella esculenta, M. conica, Tricholoma terreum, Lycoperdon perlatum, Pleurotus ostreatus, Rhizopogon roseolus, Armillaria mellea* [13].

The species of *Morchella* have been exported as fresh to Europen countries. Also *Tricholoma caligatum* have been exported to Japan. The species of *Lactarius* have been known, sold in open markets, consumed as a food by the local people.

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