RESEARCH MYCOBIOTA IN THE TERRITORY OF HUTSULSHCHYNA NATIONAL NATURE PARK

Stella Fokshei
Hutsulshchyna National Natural Park, 78600, 84 Druzhba St., Kosiv, Ivano-Frankivs'k region, Ukraine. Email: stellaannafr@gmail.com
ORCID: https://orcid.org/0000-0001-5730-3617

The article deals with mycological studies of mycobiota in the territory of the Hutsulshchyna National Nature Park (NNP)
The Hutsulshchyna National Park was created in 2002 in Kosiv district (Ivano-Frankivsk region) with the purpose of preservation, recreation and rational use of genetic resources of flora and fauna, unique nature systems, ethno-cultural environment, which have special nature protection, curative, historic, scientific, cognitive, educational, aesthetic and recreational value. This park is situated in picturesque woodland of Pokuttya Carpathians. In total, 1103 species of macromycetes have been discovered over the 18 years of the park's operation. Including 20 species that are included in the Red Book of Ukraine. Localities of rare species are mapped and protected.
Keywords: National Natural Park «Hutsulshchyna», mycobiota, macromycetes, species, Red Data Book of Ukraine

Introduction

The National Natural park (NNP) "Hutsulshchyna" was created in 2002 in Kosiv district (Ivano-Frankivsk region) with the purpose of preservation, recreation and rational use of genetic resources of flora and fauna, unique nature systems, ethnocultural environment, which have special nature protection, curative, historic, scientific, cognitive, educational, aesthetic and recreational value. This park is situated in the picturesque woodland of Pokuttya Carpathians. It occupies an area of 32, 271 hectares. The territory of the park occupies the foothills, lowlands, and middle mountains of the Precarpathians. The vegetation of the NNP is dominated by forests, which account for 95%. Deciduous stands occupy 65% of the entire territory of the park, among which forest beech dominates and 35% belongs to conifers, with a predominance of white fir [Prorochuk at all., 2013]. In general, in the Ukrainian Carpathians on the territory of Hutsulshchyna National Park the most common soils are brown soils [Prorochuk at all., 2013]. According to Andrianov, the territory of the park belongs to a separate climatic region with the sum of active temperatures of 2400-2600 ° C and precipitation of 700-800 mm [Herenchuk, 1973]. Due to the location of the Hutsulshchyna National Park in the three bioclimatic zones of the Pokut Carpathians (foothills, lowlands, middle mountains), the mycobiota of the Park is quite numerous and diverse.

Materials and methods of research

The object of research was macromycetes on the territory of Hutsulshchyna NNP. Collection and herbarium of mycological material was carried out according to generally accepted methods. Identification of biota samples was performed using domestic and foreign determinants [Garnweidner, 1994, Kibbi, 2009, Zarkyna, 2009]. The names of the fungi are given according to the nomenclature database Index Fungorum [Index…].

Research results

As a result of 18 years of work, 1,106 species of mycobiota have been identified on the territory of the Hutsulshchyna National Park, which includes representatives of the Zygomycota, Ascomycota and Basidiomycota divisions. Zygomycota division is represented by 3 species belonging to 3 genera, 2 families, 2 orders, 2 classes. Ascomycota division includes 307 species belonging to 126 genera, 60 families, 25 orders, 7 classes. Division Basidiomycota is represented by the most numerous number of species - 796, which belong to 231 genera of 82 families, 18 orders, 6 classes. Thus, the mycobiota of the park is formed by these two divisions with a significant advantage of basidiomycetes.

Marsupials are divided into 7 classes. Leading among them are: Sordariomycetes (152 species), Dothideomycetes (76 species), Pezizomycetes (39 species), and Leotiomycetes (24 species). These 4 classes combine 95% of Ascomycota species. The largest species of diversity include the following families: Erysiphaceae (71 species) Mycosphaerellaceae (67 species), Hypocreaceae (22 species), Valsaceae (13 species), Pyronemataceae (12 species).

During 2020, 53 mycological expeditions were carried out in the spring-summer-autumn period to study mycobiota. During the research, more than a thousand samples of fungi were processed and 31 new species of the order Agaricales were registered, which supplemented the biota lists of the Hutsulshchyna National Park. The detected macromycetes belong to 24 genera of 15 families.

Fungi

Basidiomycota, Agaricomycetes, Agaricales

Agaricaceae

Lepiota ignivolvata Bousset & Joss. ex Bousset & Joss.

Starokutske natural protection research department (EPRD), mycological trial area (TA) №2, beech forest, on the ground, 22.09.2020.

Amanitaceae

Amanita ceciliae (Berk. & Broome) Bas.

Starokutske EPRD, Golitsa mountain, spruce-beech forest, on the ground, 09.07.2020.

Zhuliangomyces illinitus (Fr.) Redhead.

Starokutske EPRD, Golitsa mountain (Baranivka), spruce-beech forest, on the ground, 20.10.2020.

Clavariaceae

Clavaria fragilis Holmsk.

Kosmatsky forestry of State Company (SE) "Kutsky forestry", among the grass, July 2020.

Cortinariaceae

Cortinarius acutus (Pers.) Fr.

Starokutske EPRD, Golitsa mountain, pine forest, on the ground, 10.25.2020.

Cortinarius argentatus (Pers.) Fr.

Kosiv EPRD, Kamenysty mountain, beech forest, on the ground, 11.19.2020.

Hygrophoraceae

Hygrocybe cantharellus (Schwein.) Murrill.

Starokutske EPRD, Golitsa mountain (Baranivka), spruce-beech forest, on a spruce trunk, 24.06.2020.

Hygrophorus capreolarius (Kalchbr.) Sacc.

Kosiv EPRD, Hrehyt mountain, fir-beech forest, on the ground, 11.19.2020.

Hygrophorus penarius Fr.

Starokutske EPRD, Golitsa mountain, spruce-beech forest, on the ground, 02.06.2020.

Hygrophorus poetarum R. Heim.

Starokutske EPRD, Golytsia mountain (Baranivka), beech forest with spruce admixture, on the ground, 20.10.2020.

Hygrophorus agathosmus (Fr.) Fr.

Starokutske EPRD, Golitsa mountain, pine-beech forest, on the ground, 25.10.2020.

Hymenochaetaceae

Onnia tomentosa (Fr.) P. Karst.

Starokutske EPRD, Golitsa mountain, spruce-beech forest, on the ground, 09.07.2020.

Hymenogastraceae

Hebeloma sacchariolens Quél.

SE "Kut Forestry", TA № 6, hornbeam-beech forest, on the ground, 25.09.2020.

Hebeloma sordescens Westerh.

Starokutske EPRD, Mikhalkova mountain, spruce-beech forest, on the ground, 04.11.2020.

Galerina pumila (Pers.) Singer.

Starokutske EPRD, Golitsa mountain, spruce-beech forest, among moss, 22.10.2020.

Lyophyllaceae

Tephrocybe rancida (Fr.) Donk.

Kosiv EPRD, Kamenysty mountain, fir-beech forest, on the ground, 11.19.2020.
Mycenaceae
Hydropus subalpinus (Höhn.) Singer.
Starokutske EPRD, Golitsa mountain (Baranivka), spruce-beech forest, on fallen beech branches, 28.05.2020.
Mycena zephirus (Fr.) P. Kumm.
Starokutske EPRD, Golitsa mountain (Baranivka), spruce-beech forest, in the fall, 20.10.2020
Pleurotaceae
Hohenbuehelia serotina (Pers.) Singer.
Starokutske EPRD, Golitsa mountain (Baranivka), spruce-beech forest, on a beech log, 20.10.2020.
Pluteaceae
Pluteus phlebophorus (Ditmar) P. Kumm.
Starokutske EPRD, Golitsya mountain, beech forest, on rotten beech wood, 22.09.2020.
Psathyrellaceae
Psathyrella pennata (Fr.) A. Pearson & Dennis.
Starokutske EPRD, Golitsa mountain (Baranivka), spruce-beech forest, on the site of the fire, June 2, 2020.
Coprinopsis acuminata (Romagn.) Redhead, Vilgalys & Moncalvo.
Kosiv EPRD, TA №9, fir-beech forest, on the ground, 27.10.2020.
Strophariaceae
Pholiota tape (Pers.) Singer.
Starokutske EPRD, Golitsa mountain, spruce-beech forest, in the fall, 25.10.2020.
Tricholomataceae
Tricholoma fulvum (Fr.) Bigeard & H. Guill.
Starokutske EPRD, Golitsa mountain, birch forest, on the lawn, on the ground, 25.10.2020.
Tricholoma sejunctum (Sowerby) Quél.
Kosiv EPRD, Kamenysty mountain, fir-beech forest, on the ground, 19.11.2020.
Incertae sedis
Clitocybe angustissima (Lasch) P. Kumm.
Starokutske EPRD, Golytsia mountain (Baranivka), beech forest with spruce admixture, on the ground, 20.10.2020.
Clitocybe robusta Peck.
Starokutske EPRD, Golitsa mountain, spruce-beech forest, on the ground, November 16, 2020.
Clitocybula abundans (Peck) Singer.
Starokutske EPRD, Mikhalkova mountain, spruce-beech forest, on a fallen beech branch, 04.11.2020.
Infundibulicybe trulliformis (Fr.) Gminder.
Kosiv EPRD, Mikhalkova mountain, spruce-beech forest, in the fall, 04.11.2020.
Lepista glaucocana (Bres.) Singer.
Kosiv EPRD, TA № 9, fir-beech forest, on coniferous litter, 27.10.2020.
Melanoleuca cognata (Fr.) Konrad & Maubl.
Starokutske PNDV, Golitsa mountain, spruce-beech forest, on the ground, 25.10.2020.

As we can see, the largest number of species was found in the families Incertae sedis - 6 and Hygrophoraceae - 5. Among the new macromycetes for Hutsulshchyna NNP 10 are rare, namely: *Amanita ceciliae, Coprinopsis acuminata, Hebeloma sordescens, Hohenbuellibebelia serotina, Melanoleuca cognata, Pluteus phlebophorus, Tephrocybe rancida, Tricholoma sejunctum, Zhuliangomyces illinitus.*

Thus, 1106 species of mycobiota were found on the territory of Hutsulshchyna National Park, uniting representatives of Zygomycota, Ascomycota, and Basidiomycota divisions. In 2020, 32 new species of the order Agaricales were identified in the park, 10 of which are rare.

References

Kibbi Dzh. (2009). Atlas hribov : Opredelitel vidov. SPb. : Amfora. 1-269.
Prorochuk V. V., Stefurak Yu. P., Brusak V. P., Derzhypilskyi L. M. (2013) Natsionalnyi pryrodnyi park «Hutsulshchyna». Lviv: NVF «Karty ta atlasy» 1-408.
Herenchuk K.I. (1973). Pryroda Ivano-Frankivskoi oblasti. Lviv : Vydavnyche obiednannia «Vyshcha shkola» pp. 51-62.
Zarkyna Y.S. (2009). Hriby znakomye i neznakomye : Spravochnyk-opredelytel hrybov Kryma. Simferopol : Byznes-Ynform. 1-416.
Garnweidner E. (1994). Mushrooms and Toadstools of Britain and Europe. London : Harper Collins Publishers. 1-255.
Index fungorum. Online: http //www.indexfungorum.org/names.asp [Accessed 13 May 2021].