

Cercosporoid hyphomycetous fungi in Bulgaria

(Summary of PhD thesis)

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The subject of this study are parasitic fungi from the group of **cercosporoid hyphomycetes**. Prevailing number of the included taxa are **anamorphic holomorphs**, in which lifecycles only asexual reproduction and structures, ensuring their survival during unsuitable environmental conditions are known. A small number of taxa, possessing proven sexual stage (teleomorf), belong to the ascomycetous genus *Mycosphaerella* Johanson.

The aim of this work is **studying of the species, distribution and host-plants of the cercosporoid hyphomycetous fungi in Bulgaria**.

Several tasks were selected for the realization of this aim:

1. Revision of the Bulgarian herbarium specimens of this group and collecting of new ones.
2. Taxonomic study of the established cercosporoid hyphomycetous fungi.
3. Analysis of the distribution, hosts and parasitic specialization of the cercosporoid hyphomycetous fungi.

In this PhD thesis **110** species and **3** varieties of cercosporoid hyphomycetous fungi from **12** genera are presented taxonomically: *Cercospora* (19 taxa), *Cercosporella* (3), *Mycovelosiella* (3), *Passalora* (9), *Phacellium* (2), *Phaeoramularia* (1), *Pseudocercospora* (2), *Pseudocercosporella* (3), *Ramularia* (68), *Spermosporina* (1), *Stenella* (1), *Theadgonia* (1). All taxa are documented with 368 herbarium specimens of hyphomycetous fungi, housed at the Mycological Collection (SOMF) of the Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences. Their hosts are 175 species, predominantly herbaceous plant-hosts, belonging to 41 families.

In accordance to the previously set aims and tasks the following results could be summarized:

1. A study on the species, distribution and host-plants of the cercosporoid hyphomycetous fungi in Bulgaria was conducted.

2. In the process of this study 368 herbarium specimens of cercosporoid hyphomycetous fungi have been examined. Their hosts are in total 175 species of plants.

3. Taxonomic work of cercosporoid hyphomycetes is done. A total of 113 taxa (110 species and 3 varieties), belonging to 12 genera are established.

4. The distribution, hosts and parasitic specialization of the taxa have been analyzed.

5. **Seven**, new to Bulgaria genera of cercosporoid hyphomycetes are established: *Mycovelosiella*, *Phacellium*, *Pseudocercospora*, *Pseudocercosporella*, *Spermosporina*, *Stenella*, *Theadgonia*.

6. **Twenty species and one variety** of cercosporoid hyphomycetous fungi, new to Bulgaria, are found as parasitic on **22** host-plants.

7. **Twelve**, new to science, host-plants of **8** taxa of cercosporoid hyphomycetous fungi are established.

8. **Sixteen**, new to Bulgaria, host-plants of **12** already known taxa in our country, are established.

9. As a result of the revision of the herbarium specimens, kept in the Mycological collection of the IBER, BAS, the correct names of **46** taxa cercosporoid hyphomycetous fungi were introduced.

10. **Seven** host-plant correct names were introduced also.

11. Depending of the specialization to its host-plants, the cercosporoid hyphomycetous fungi were separated into three groups:

11.1. Specialized on species level (**16** species)

11.2. Specialized on generic level (**54** taxa)

11.3. Specialized on family level (**43** taxa).

12. A majority of the studied cercosporoid hyphomycetous fungi cause economic important diseases of cultivated, ornamental, wild and medicinal plants, incl. plants used for food.