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COMPOSITION OF PHYTOPATHOGENIC FUNGUS OF UZBEKISTAN

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ABSTRACT
According to the works of Kirk P.M., Cannon P.F., Minter D.W., Staples J. A., and others. Ainsworth & Bisby's lexicon, 10th ed. (2008) and Mclaughlin D.J., Spatafora J.W., this article contains data on the contemporary taxonomy of the mycobiota of phytopathogenic fungus detected in Uzbekistan (2014). This article is based on past generations of phytopathologists and mycologists in Uzbekistan and neighboring areas, as well as colleagues and their study (Flora of mushrooms of Uzbekistan, 1983-1991).

Uzbekistan's mycobiota now number 1124 species spread among 149 genera, 114 families, and 41 orders.

KEYWORDS: *oomycetes, chytridiomycetes, marsupial fungi, basidiomycetes, anamorphic fungi, taxonomy, mycobiota, fungus, species, genus, family, order, class, oomycetes, chytridiomycetes, marsupial fungi, basidiomycetes, anamorphic fungi*

INTRODUCTION

The value of classic works in biology as a broad science cannot be overstated. Biology, like other general sciences, encompasses a wide body of knowledge that is split into various parts, meaning independent sciences, which include both classical and current divisions, such as botany, zoology, microbiology, and others.

The fundamental goal of taxonomy is to find connections between different groups and organize them into different categories. Although this complex is distinguished by tremendous variety, all creatures have their phylogenetic histories and are connected to some extent.

We believe phylogeny to be a generic term in systematics, but one of the most essential aspects is the availability of current approaches (genetic, etc.). However, it is impossible to dismiss previously developed methodologies.

It should be noted that, in the opinion of A.A. Yachevsky [13], studying the fungi flora of individual regions, districts, or territories is the primary task of mycologists, i.e. floristic research in the field of mycology is the first step, necessary for all subsequent researchers, allowing them to pose various problems and outline ways to solve them.

Mycologists and phytopathologists are naturally interested in phytopathogenic micromycetes, which are pathogens of plant diseases that harm agriculture and the ornamental industry.

In this context, the goal of this work is to disseminate information on mycobiota, or phytopathogenic micromycetes, in Uzbekistan, which is located in the northwest corner of Central Asia.

This article is based on earlier generations of phytopathologists and mycologists in Uzbekistan and neighboring countries, as well as colleagues and their research [11]. Kamilov et al. released data on the makeup of phytopathogenic fungi, excluding coelomycetes, in their study Taxonomy of the mycobiota of phytopathogenic fungi of Uzbekistan [15]. An examination of the composition of anamorphic fungus in Uzbekistan is included in this article.

LITERATURE REVIEW

When it comes to the formation of phytopathogenic mycobiota, it's important to remember that its composition is the result of complex interactions between fungi, plants, and the environment, and it's important to remember that it's not a random collection of species, but a completely natural one,

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formed under the influence of the area's general physical-geographical and historical conditions, as well as bioecological characteristics.

N.G. Zaprometov, P.N. Golovin, T.S. Panfilova, N.I. Gaponenko, S.S. Ramazanova, B.A. Khasanov and many more researchers contributed to the growth of phytopathological and mycological research in Uzbekistan and neighboring areas [7].

GOAL OF THE WORK

The goal of this paper was to provide information on the modern taxonomy of Uzbekistan's mycobiota, based on phytopathological composition, according to modern fungi taxonomy, not excluding Saccardo's classical taxonomy, according to the works of Kirk PM, Cannon PF, Minter DW, Staples JA, and others / Ainsworth & Bisby's dictionary, 10th ed [16].

RESULTS

The results of data on the composition of imperfect mushrooms found in Uzbekistan are presented in this article (Table 1). Table 1 lists the Anamorphic micromycete fungi that may be found in this area.

Uzbekistan's mycobiota now consists of 1124 species divided into 149 genera, 114 families, and 41 orders. Furthermore, the Anamorphic fungus category comprises 521 species from 88 genera, three families, and three orders of hyphal fungi. Light-colored (Moniliaceae) and dark-colored (Dematiaceae) hyphal fungus are the two primary families. Conidial sporulation is missing in certain Deuteromycetes; these species develop sclerotia or persist as sterile mycelium (Agonomycetales).

Coelomycetes are fungi that belong to the melanconial and pycnidial families. Melancon fungi are up of 19 species from seven genera. There were 308 species of pycnidial fungus found, divided into 20 genera (Table 1).

DISCUSSION OF THE AVAILABLE RESULTS

At present, representatives of fungi are noted in the composition of micromycete fungi, and according to modern taxonomy, fungal-like organisms. In a previously published work on the structure of the mycobiota of fungi in Uzbekistan [15], the question of the composition of perfect fungi was discussed.

According to the classical system, Saccardo, oomycetes, and chytridiomycetes are classified as lower fungi. According to modern views, oomycetes are fungi-like organisms.

The oomycetes include 132 species belonging to 6 genera, 2 families, and 9 orders. Sapropelic fungi are widespread in water bodies as saprotrophs on plant debris and animal substrates. Their harmfulness is known in fish breeding. This group also includes species of the Pythiaceae families - typical soil saprotrophs and causative agents of root rot of cultivated plants, Albuginaceae and Peronosporaceae - parasites of higher plants. Due to their species richness and practical importance, mushrooms from the genera Pityum and Phytophthora are of great interest.

The representatives of the former chytridiomycetes include the phylum species Chytridiomycota, as well as Monoblepharidimycota and Blastocladiomycota. Of which Chytridiomycota includes 8 species from 4 genera, 4 families, and 3 orders, Monoblepharidimycota - 2 species from 2 genera, 2 families, and 1 order, Blastocladiomycota - 2 species from 2 genera, 1 famiyfamily 1 order. In total - 12 species, 8 genera, 7 families, and 5 orders. Most chytridiomycetes live in water and soil, among them, there are parasites of algae, higher aquatic plants, and invertebrates, as well as saprotrophs on plant and animal remains.

Representatives of true fungi were identified from zygomycetes, marsupials, basidiomycetes, and the Anamorphic fungi group, the teleomorphs of which belong to Ascomycota and Basidiomycota.

Zygomycetes include 35 species from 11 genera belonging to 4 families and 1 order. Most zygomycetes are terrestrial and are saprotrophs in the soil, on plant and animal debris. Typical representatives are mucor fungi, which inhabit soils, as well as rotting seeds and food products.

Marsupial mushrooms include 293 species belonging to 76 genera from 47 families, 18 orders. Based on the presence or absence of fruiting bodies and the methods of their formation, the taxonomy of ascomycetes was compiled. In the development cycle, they have two stages: perfect teleomorph and conidial - anamorphic. The marsupial fungi include economically significant families: Taphrinales, Erysiphales fungi, the causative agent of pome crops scab (Venturiaceae), Alternaria (anamorph - Pleosporales), and many other plant diseases causing diseases. Many species of ascomycetes in the anamorphic stage parasitize on various plants, causing dangerous diseases. Most of the ascomycetes, especially in the teleomorph stage, live as saprotrophs in the soil, on plant debris. Some representatives are of significant economic importance as producers of antibiotics, growth substances (gibberellins), etc. Basidiomycetes include 354 species from 21 genera, 13 families, 6 orders. The main groups of basidiomycetes include causative agents of well-known and very dangerous plant diseases: rust (Pucciniales) and smut (Ustilaginales, Urocystidales, Tilletiales).

Imperfect mushrooms, according to the Saccardo system, include hyphal and coelomycete fungi, which are given in this work. Includes 521 species from 88 genera, 3 families, 3 orders of hypnotic fungi in the group of Deuteromycetes or

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Anamorphic fungi. The main families are light-colored (Moniliaceae) and dark-colored (Dematiaceae) hyphal fungi. In some Deuteromycetes, conidial sporulation is absent, such species form sclerotia, or exist in the form of sterile mycelium (Agonomycetales).

Coelomycetes include species that are part of melanconial and pycnidial fungi. Melancon fungi include representatives of 19 species from 7 genera. Of pycnidial fungi, 308 species from 20 genera have been identified.

Among deuDeuteromycetesoth saprotrophs that live in water, soil, on plant and animal remains, and parasites that develop on higher plants, less often on animals, are known. Deuteromycetes are the cause of numerous crop diseases resulting in large crop losses.

CONCLUSIONS

The mycobiota of Uzbekistan now contains 1124 species from 149 genera, 114 families, and 41 orders belonging to the phyla Oomycota, Chytridiomycota, Monoblepharidimycota, Blastocladiomycota, Zygomycota, Ascomycota, Basidiomycota, and Anamutercomycota (De Furthermore, there are 521 species in the deuDeuteromycetes Anamorphic fungus category, which are divided into 88 genera, three families, and three orders. Light-colored (Moniliaceae) and dark-colored (Dematiaceae) hyphal fungus are the two primary families. Conidial sporulation is missing in certain deuDeuteromyceteshese species that develop sclerotia or persist as sterile mycelium (Agonomycetales).

Coelomycetes are fungi that belong to the melanconial and pycnidial families. Melancon funfungie ise up of 19 species from seven genera. 308 species of pycnidial fungus have been discovered, divided into 20 genera.

Table 1.
The structure of the composition of the available Anamorphic mushrooms in Uzbekistan

Phylum	Class	Order	Family	Number of births	Genus	Number of species
Anamorphic fungi (Deuteromycotina)	Deuteromycetes	Hyphomecetales	Moniliaceae	52	*Halobyssus* Zucal	1
					Monilia Board.	4
					Oospora Wall.	3
					Geotrichum Link	1
					Cephalosporium Corda	11
					Acremonium G.Arnaud ex Cif.	2
					Trichoderma Pers.	4
					Aspergillus P.Micheli ex Link	33
					Penicillium Link	70
					Acrostalagmus Corda	1
					Gliocladium Corda	8
					Scopulariopsis Bainier	3
					BotBarnier.Micheli ex Pers.	3
					Sporotrichum Link	7
					Spicaria Harting	5
					Verticillium Nees	14
					Selenium Link	3
					Gonatobotrys Corda	1
					*MMycogen*Link	1
					Arthrobotrys Corda	13
					Trichotecium Link	2
					Cephalodiplosporium Kamyschko	1
					Dactylium Nees	1
					*GGolovin*Mekht.	5
					Dactylaria Sacc.	3

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					Dactylariopsis Mekhi.	1
					Dactylella Grove	1
					Candelabrella Rifai & R.C.Cooke	1
					*Kafiaddina*Mekhit	1
					Nematophagus Mekhi.	2
					Monacrosporium Oudem.	1
					Helicon Morgan	1
					Bacillispora Sv.Nilson	1
					*Lunulospora*Ingoldd	1
					Centrospora Neerg.	1
					*Anguillospora*Ingoldd	6
					Tetracladium De Wild.	2
					Tetrachaetum Ingold	1
					Triscelophorus Ingold	1
					Campylospora Ranzoni	1
					Dendrospora Ingold	1
					Terrarium Henn.	1
					*AAutosport*Ingold	1
					*HHibiscus*Sacc.	1
					Trichophyton Malmsten	1
					*OOvular*Sacc.	16
					Pseudovularia Speg.	1
					Mastigosporium Riess	2
					Ramularia Unger	68
					Didymaria Corda	5
					Tricladium Ingold	2
					Botryosporium Corda	1
			Dematiaceae	33	*Aureobasidium* Viala & G.Boyer	1
					Hormiscium Kunze	4
					popular.	1
					Coniosporium Link	7
					Torula Pers.	8
					Chalara (Corda) Rabenh.	2
					Nigrospora Zimm.	3
					Stachybotrys Corda	2
					*Humicola*Trainn	2
					Botryotrichum Sacc. & Marchal	1
					Hormodendrum Board.	1
					Gonytrichum Nees & T.Nees	1
					Dicoccum Corda	1
					Polythrincium Kunze	1
					Cladosporium Link	23
					Fusicladium Board.	9
					Scolicotrichum Kunze	2
					Clasterosporium Schwein.	1
					Murogenella Goos & E.F.Morris	1
					Curvularia Boedijn	1
					Heterosporium Klotzsch ex Cooke	6
					Napicladium Thum	2
					Helmintosporium Link	3

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					Bipolaris Shoemaker	9
					Brachysporium Sacc.	1
					Cercospora Fresen.	19
					Ragnhildiana Solheim	1
					Alternaria Nees	15
					Acrospeira Berk. & Broome	1
					Fuego Pers.	1
					Coniothecium Corda	9
					Sporidesmium Link	5
					Stemphylium Wall.	13
		Tuberculariales	Tuberculariaceae	1	*Fusarium* Link	36
	Agonomycetes	Agonomycetales		1	*Rhizoctonia* DC.	3
				1	*Sclerotium* Fuckel	3
	Coelomycetes	Melanconiales	Melanconiaceae	7	*Colletotrichum* Corda	1
					Cylindrosporium Sac.	7
					Gloeosporium Desm. et Mont.	4
					Marsonina P.Magn.	3
					Melanconium Link	1
					Microstroma Niessl.	1
					Steganosporium Corda	2
		Sphaeropsidales	Sphaeropsidaceae	20	*Ascocheta* Libert.	13
					Aposphaeria Berk	1
					Asteroma DC	10
					Camarosporium Shulz.	22
					Coniothurium Corda	33
					Cytospora Fries.	19
					Dendrophoma Sacc.	1
					Westendorf	6
					Henderson Berkley	15
					Microphone Berl. et Vigil.	2
					Melasma Lev.	5
					Piggott Bern	1
					Phone Fr.	45
					Phomopsis Sacc.	1
					Phyllosticta Phors et Desm.	41
					Pleospora Walloroth	2
					Rhabdpspora Mont.	13
					Septoria Fr.	66
					Sphaeropsis Lev.	4
					Staganospora Sacc.	8

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