CHECKLIST OF ASCOMYCETOUS FUNGI OF BANGLADESH

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ABSTRACT

Thirty species of Ascomycetous fungi under 21 genera belonging to 12 Families in Bangladesh from 1952 till date are enlisted. The alphabetical checklist of the genera is provided herewith. Further updates will be added in the subsequent versions of the publication.

KEYWORDS: Checklist, Fungi, Ascomycetes, Bangladesh.

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Introduction

Ascomycota is a phylum of fungi (kingdom Fungi) which can live in practically every environment, from freshwater habitats to deserts and forests.[2] It is currently has over 64000 species which makes it the largest phylum of fungi (Wikipedia 2024) Members are commonly known as the sac fungi, due to the phylum having an ascus which is a sac like structure. Within this structure there are eight ascospores which are the sexual organ for ascomycetes. The ascospores get released by the ascus under humid conditions into the air where they can land on objects and spread the fungi. The ascus defines the group and distinguishes it from other fungi (Alexopoulos 1996)

Materials and Methods

The present paper deals with substratum range of 30 species inder 19 genera brlonging to 11 families of Ascomycetes reported so far from different habitats of Bangladesh. They were found as pathogens or saprophytes on stem, leaf, woody debris and leaf litter environment. Sexual fruiting structures of these fungi were studied directly from the samples or isolated from the samples. The research was conducted in Rice Research Institute (BRRI), Joydebpur, Gazipur, Dhaka, Bangladesh Agricultural Research Institute (BARI), Joydebpur, Gazipur, Dhaka Bangladesh Agricultural University, (BAU), Mymensingh, Dhaka University, Dhaka and Jahangirnagar University (JU), Savar, Dhaka. The checklist of Ascomyceteous fungi recorded from Bangladesh is compiled on the basis of published literatures of the Country. The fungi were isolated from the respective hosts following 'Tissue planting method' (CAB 1968). Seed borne fungi were isolated following 'Blotter method' or 'Paper towel method' (Anonymous 2014). Soil borne fungi were isolated following 'serial dilution method'. Distribution of 30 species of fungi reported so far from various sites of Bangladesh is provided. Classification of fungi were based on, Alexopoulos 1991 and Wikipedia 2024. The checklist includes detail of the substrata on which they encountered as far as possible. This data will be useful in the compilation of fungal biodiversity of Bangladesh.

Results and Discussion

From 1952 till date, 30 species under 21 genera belonging to 12 families have been recorded from Bangladesh (Ahmed 1952, Talukder 1974, Siddiqui *et al.* 2007 and Bakr *et a*l. 2007, Liza et al., Nishiet *at al* and zafrun *et al* are. provided in Table 1.

Table 1. Ascomycetes

Name of fungi	Host/Habitat	Status	References
Family Aspergillaceae			
E*upenicillium* sp. 1	Isolated from healthy leaves of *Aquilaria malaccensis* Lam.	Rare	Zafrin *et al* 2024
*Eupenicillium s*p. 2	Isolated from healthy leaves of *Aquilaria malaccensis* Lam.	Rare	Zafrin *et al* 2024
.*Eurotium rubrum* Bremer	*Gerbera aurantiaca* L		Shamsi and Yasmin 2014
Family Chaetomiaceae			
Eupenicillium sp			
Chaetomium globosum Kunze.	Air, paper, textile materials,soil and jute	Occurrence frequent	Siddique *et al*. 2007
C. magnum Brainier.	Soil	Occurrence throughout Bangladesh	Siddique *et al*. 2007
*Dicym*a state of *Ascotricha chartarum* Berk.	Leaves, textile and paper materials	Occurrence infrequent.	Siddique *et al*. 2007
Family Erysiphaceae			
Erysiphe graminis DC f. sp. hordei Esm. Marchal.	Infected aerial parts of the plants such as cereal (barley, oat, rye, wheat), grasses grapevines, peas, apples and cucurbits.	Obligate parasite	Siddique *et al*. 2007
Family Tuberaceae			
Tuber aestivum Vittad	Habitat: On bark wood of the plant; in an association with the Dahlia plant (Dahlia sp.); Habit:	Spongy, Scattered	Islam and Aminuzzaman 2016.

Family Laceospaeria			
Lasioshaeria gigantea (Batsch *ex.* Fr.) Rost.	Garden, woodlands a wide vanity of other habitats, Grows early summer to late autumn	Young sporophores are edible	Siddique *et al*. 2007
Mutinus caninus Fr.	Humus-rich soil under the bamboo groves and damp forest floors where the fungus grows as saprophytes.	This species is not edible, relatively rare. In Bangladesh, it was noticed during the early monsoon.	Siddique *et al*. 2007
Phyllactinia corylea (Pers.) Karst. Em. Salm.	Causes powdery mildew mildew disease of the mulberry leaf	Obligate parasite	Siddique *et al*. 2007
Phyllactenia dalbergae Piroz	Causes powdery mildew mildew disease of Dulbergia sisso	Obligate parasite	Shamsi et al. 2008
Family Botryospaeroaceae			
Botryospaeria ribis Grossenb and Duggar	Standing trees, cut logs and Timber.	The fungus causes die-back and canker on Avodado, Pine, causes canker on *Heritiera fomes* in the Sundarbans in Bangladesh.	Siddique *et al*. 2007
Sphaeropsis sp.	Isolated from healthy leaves of *Aquilaria malaccensis* Lam.	Rare	Zafrin et al. 2024

Family Saccaharomycetaceae			
Debaryomycetes sp.	On BRRI hybrid rice seed	Rare	Liza et al. 2024
Debaryomyces Phaffii Caproitti	Pond water	No significant information available.	Siddique *et al*. 2007
Khuyveromyces marxinnus Vanderwalt	Fruits	No significant information available	Siddique *et al*. 2007
Saccaromyces bayanus Saccardo	Pond water, bottled juice and flowers.	No significant information available	Siddique *et al*. 2007
S. cerevisiae Meyen	Surface of Sugarcane stem and flowers.	Baker's yeast.	Siddique *et al*. 2007
S. chevalieri Gulliermond	Lake water.	No significant information available	Siddique *et al*. 2007
S*. montanus* Phaff. Miller and Shifrine	Pond water, milk products and ripe fruits.	No significant information available	Siddique *et al*. 2007
Family Diaphothaceae			
Diaporthe perseae (Zerova) R.R. Gomes, Glienke & Cronus	Isolated from healthy leaves of *Aquilaria malaccensis* Lam.	Rare	Zafrin *et al.* 2024
Diaporthe hongkongensis **R**.R. Gomes, Glienke & Cronus	Isolated from healthy leaves of *Aquilaria malaccensis* Lam.	Rare	Zafrin *et al.* 2024
Family Pyrenomytaceae			
Aleuria aurantia (Pers.) Fuckel,	The mushroom was found on the natural	Infrequent	Rashid *et al.* 2017

	humus of the forest. Forest type was Deciduous		
Family Sordariaceae			
Glomerella singulata Mordue	On Glysin max L.	Occurrence frequent	Khan *et al*. 1980
Nurospora crassa	Bread	Red bread mould	Siddique *et al*. 2007
Family Hypoxylaceae			
*Cochliobolus miy*abeanus (S.Ito & Kurib.) Drechsler ex Dastur	Rice	Rara	Bakr *et al.* 2007
Daldinia concentrica **(**Ces.) Bolton & De Not	Mehagony (Swietenia macrophylla)	Scattered	Das and Aminuzzaman 2017.
Daldinia eschscholtzii,	On BRRI rice seed	Rare	Nishi *et at.* 2024
Family Xylariaceae			
Daldinia concentrica	On *Acacia auriculiformis*		Tonni *et al* 2020
Xylaria hypoxylon Grev.	Decaying wood, grows rarely on the forest floor during the wet season. Gregariuoe on old stumps.	None available.	Siddique *et al*. 2007
Xylaria polymorpha	Old stumps	Dead man's fingers	Marzana et al. 2018

Siddiqui et al. (2007) have reported 275 fungal species under125 genera from Bangladesh. Shamsi (2017a and 2017b) presented check list of forty species of lower fungi and 208 species of anamorphic fungi under 51 genera of the family Dematiaceae from Bangladesh. Eighty-three species of anamorphic fungi under 20 genera belonging to Moniliaceae, Tuberculareaceae and Stilbelaceae found in Bangladesh from 1952 till date are also enlisted. One variety of Fusarium

moniliformae, three varieties of *F. oxysporum* and one variety of *F. udum* were also included. Shamsi {2024) reported sixly two species of anamorphic fungi under 17 genera belonging to Sphaeropsidaceae and Melanchoniaaece in Bangladesh. Thirty spaces of Ascomycetes under 21 genera and 12 families are enlisted in this account from 1952 till date. This data will be useful in the compilation of fungal biodiversity of Bangladesh

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