

Diversity and Morphotaxonomical Studies of Basidiomycetes from Yavatmal Region of Vidarbha, Maharashtra

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Abstract

Present investigation deals with the morphotaxonomical studies and diversity of Basidiomycetes. During the study prominent Basidiomycetes like *Ganoderma*, *Trametes*, *Leucoagaricus*, *Termitomyces*, *Entolomoides*, *Leucoagaricus*, *Trametes gibbosa* has been collected and identified on the basis of morphological characteristics.

Keywords: Diversity, Morphotaxonomy, Basidiomycetes, Yavatmal

Introduction

Basidiomycetes fungi are a group of fungi that shows their incomparable abilities to grow themselves in a conditions of the environment where they constantly act as natural lignocellulose destroyers. To degrade the biomass Basidiomycetes fungi having two types of enzymatic systems, one is hydrolytic system and another one is unique oxidative ligninolytic system. Potential of basidiomycetes to degrade the compound structure of lignocelluloses is most important characteristics which make them valuable in exploring the lignocellulosic biomass for the production of ethanol. Basidiomycetes fungi also has numerous biotechnological applications.

Yavatmal region of Vidarbha is virgin for the study of basidiomycetes most of the area is covered by deciduous forest. Tippeshwar is the major forest and near to Yavatmal district of Maharashtra. Author has collected different samples from various locations.

Material methods

Authors have collected interesting samples from adjacent area of Yavatmal city. Collected samples were brought to laboratory. All the samples were investigated and studied their morphological characteristics. Once the macromorphological characteristics were noted, specimens were dried at 40 °C in a food dryer until no more moisture was left, and stored in sealed plastic bags (Fig.1) and the material were studied morphologically and microscopically with the help of relevant literature (Trudell et al 2009, Yunrui Ma Tiezhi Liu et al 2022, Vellinga, E.C.2004, Ge, et al 2015, Latha et al 2020, Trang Thi Thu et al 2023, Andrés and Tuba 2018, Song-Ming Tang et al 2023).



Fig.1. Specimen collected and preserved

Observations and Results

Morphotaxonomy

Ganoderma sp.

Ganoderma species are characterised by *Ganoderma sua* is characterized by reddish brown to oxblood red pileus surface and lead gray to greyish-white pore surface, heterogeneous context, wavy margin laccate and non-laccate, coriaceous to wood polypore basidiomycetes. *Ganoderma* is a widely distributed genus, mostly represented by tropical species and some temperate ones. (Fig.2)

Trametes sp.

The genus *Trametes* Fr. (Polyporales, Basidiomycota) is characterized by the combination of pileate basidiocarps, poroid hymenophore, trimitic hyphal system, thin-walled smooth basidiospores not reacting in presence of Melzer's reagent and production of a white-rot type of wood decay. It is a cosmopolitan genus present in virtually any type of forest ecosystem in temperate, boreal, and tropical areas. (Fig.3)

Leucoagaricus sp.

The genus *Leucoagaricus* Locq. ex-Singer, is a relatively well known mushroom-forming genus of basidiomycetous fungi, characterized by the small to medium-sized, thin or fleshy basidiomata; pileus surfaces ranges from radially fibrillose, floccose, squamulose to fibrillose-scaly or rarely granulose; entire or very short striated margins; and central, equal to bulbous stipe that have membranous, sometimes movable annuli; thin-walled and smooth basidiospores generally lack well-defined germ pores. (Fig.4)

Termitomyces sp.

Termitomyces R. Heim (1942) was established based on the type species *T. striatus* (Beeli) R. Heim (Heim 1942). *Termitomyces* species are characterized by their obligate symbiotic association with termites (Aanen et al. 2002). *Termitomyces* species are ecologically important. (Fig.5).



Fig.2. *Ganoderma* sp.



Fig.3. *Trametes* sp.



Fig.4. *Leucoagaricus* sp.



Fig.5. *Termitomyces*

Conclusions

The study suggested that investigated region is rich in fungal diversity. Environmental conditions of this area are favourable to growth and development of basidiomycetes. Studied region may become a great source of basidiomycetes fungi which having many biotechnological applications.

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