MMB - E301
ELECTIVE - I MYCOLOGY

L T Credit
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Learning objectives:

- Student will know the historical background development and classification of fungi.
- To understand different characteristic of fungal classes.
- Get the knowledge of negative and positive aspect of fungi.
- Learn techniques of identifying fungal pathogen from different samples.
- To get knowledge of economic importance of fungi.

Learning outcomes:

At the end of course student will be able to

- Became familiar of historical background and development of mycology.
- Characterize fungi according to their classes.
- Isolate and identify different fungal species causing plant and animal disease.
- Suggest and use fungi for the industrial purpose.

UNIT – I

Introduction – History and development of mycology, structure and criteria used in classification/identification of fungi, various fungal classification system; *Myxomycota* – general account only; brief account of Chytridiomycetes, Oomycetes; Zygomycotina-Evolution of conidium.

(12 Lectures)

UNIT – II

General Features of Fungal Classes: Ascomycotia – Hemiascomycetes, Plectomycetes, Pyrenomycetes, Discomycetes, Laboulbeniomycetes, Laculoascomycetes; Basidiomycotia- Teliomycetes, Hymenomycetes, Gasteromycetes; Deuteromycotia-Hyphomycetes, Coelomycetes, Blastomycetes.

(12 Lectures)

UNIT – III

Fungi in ecosystem: contribution of fungi to ecosystems, breakdown of hemicellulose, cellulose, pectins, chitin, starch and glycogen, lignin degradation; flow of nutrients-transport and translocation, secretion of colonizers on a substrate.

(12 Lectures)

UNIT – IV

Fungalplant pathogens: occurrence, classification, morphology, characteristics features and life cycle of *Sclerotiumrolfsii*,*Melamsporalini*., *Erysiphegraminis*, *Fusariumoxysporum*, *Alternariasolani*, *Phytophthorainfestans*, *Taphrinadeformans*, *Venturianiaegualis*.

(12 Lectures)

UNIT – V

Fungal metabolites of industrial importance–industrial alcoholic beverages and organic acids; Fungi as bioinoculant agents, mycotoxins- Aflatoxins, rubratoxin, ochratoxin; fungal enzymes of commercial importance-amylases and cellulases, mycoprotein (quorn).

(12 Lectures)

Suggested Reading

1. Dubey R.C. and Maheshwari, D.K. *A Textbook of Microbiology*. 3rd ed., S. Chand & Co, Ram Nagar, New Delhi, p. 1034. ISBN 81-219-2620-3
2. CKJ Paniker. Test Book of Microbiology, Orient Longman
3. D.R.Arora. Medical Mycology, CBS Publisher and Distributors
4. Alexopoulos, C.J. and Mims, C.W. (1979). Introductory Mycology, John Wiley, New York.
5. Pelczar, Jr., Michael, E. C. S. Chan and Noel Kreig. (2000). Microbiology. V Ed. Tata McGraw Hill Book Company.

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