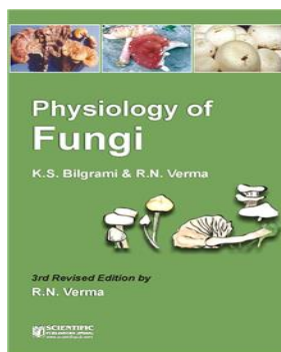


## Physiology of Fungi, 3rd Ed.



**K.S. Bilgrami & R.N. Verma**

ISBN	: 9788172336899	Book Format	: Book
Language	: English	Binding	: Hard Bound
Imprint	: Scientific Publishers	Edition	: 3
Pages	: 644	© Year	: 2011
Weight	: 950 Gms	Trim Size	: 5.75 x 8.75

**Print Book : ₹1,850.00 ₹1,665.00 10%Off**

### Blurb

The importance of Fungi in food, feed, beverages, drugs and pharmaceuticals etc. is well known. However, recent spurt in their use in agriculture and industry has been chiefly on account of rapid and significant advancements in the field of Biotechnology. Obviously, intensive extensive studies on this diverse group of organisms are receiving vigorous attention the world-over and enormous literature is accumulating on the subject with fungal physiology occupying the centre-stage. The Physiology of Fungi by Bilgrami and Verma is an attempt to compile and compose the important findings and information relating to fungal physiology and biochemistry in a meaningful and useful format. It is a university-level book written for graduate post-graduate students, teachers and research-workers in the fields of Botany, Mycology, Plant Pathology, Microbiology, Biochemistry Plant Physiology, Agriculture, Biotechnology, Pharmaceutical Industries etc. In view of its wide applicability, the first 2 editions of the book were supported and subsidized by the National Book Trust, Govt. of India, and both the editions met their objectives well. The current (3rd) edition of the book has been revised and enlarged to comprehend the large volume of recent advancements made in the field and has been equipped with new Chapters, Figures, topics of applied significance, emphasis on economically and industrially important fungi like edible medicinal mushrooms, ECM fungi etc. and a rich Bibliography to promote and aid further readings. As usual, this edition is also written in a simple and comprehensible language with adequate illustrations, data and references, which together make an ideal and interesting reading of a complex subject.

### Table of Contents

1. Introduction - Mode of Nutrition in Fungi; Process of Nutrition in Fungi; Growth and Development; Role of Fungi in Global Cycles; Taxonomic position of fungi.
2. Cellular Characteristics of Fungi - Fungal Thallus; Fungal Cell; Nucleus; Cytoplasm; Cell Organelles and Cell Inclusions; Organelles; Cell inclusions; Plasmalemma; Cell wall and Septa
3. Culture Media - Culture Media; Nomenclature; Classification; Preparation of Culture Media; Ingredients of Culture Media; Adjustment of pH; Dispensation of the Medium; Sterilization of Media; Sterilization by Physical Methods; 1. Sterilization by Heat; 2. Sterilization by Radiation; 3. Sterilization by Filtration; Sterilization by Chemical Methods; 1. Disinfectants; 2. Gaseous sterilization; Composition of some common laboratory Media
4. Enzymes - Characteristics of Enzymes; Mechanism of Enzyme-Action; Nomenclature and Classification of Enzymes; A. Nature of Enzyme; B. Site of Action; C. Type of Reactions; Enzyme Kinetics; Factors Affecting Enzyme Activity; 1. Temperature; 2. Hydrogen Ion Concentration; 3. Enzyme/Substrate/Product Ratio; 4. Chemical Agents.
5. Absorption and Transport - 1. Carrier - Mediated Diffusion; 2. Active Absorption; Absorption and Transport of Electrolytes; Absorption of Cations; Absorption of Anions; Absorption of Organic Molecules; Amino Acids; Sugars; Uptake of other C and N Sources; Disaccharides; Lipids; Hydrocarbons; Ammonium; Urea; Other N-sources.
6. Carbon Sources and their Utilization - Chemical Nature of Carbon Sources; 1. Carbohydrates; Monosaccharides; Isomerism; 1. Spatial Isomerism; 2. Optical Isomerism; Cyclic Forms of Sugars; Glycosides; Disaccharides; Polysaccharides; Starch; Glycogen; Cellulose; Hemicelluloses; Pectins; Chitin; Other Polysaccharides; Lignins; Sugar Derivatives; Sugar Alcohols; Sugar Acids; Amino Sugars; Deoxy Sugar; Monocarboxylic Acids; Dicarboxylic Acids; Lipids; Amino Acids; Utilization of Carbon Sources; Monosaccharides; Sugar Alcohols; Sugar Acids; Glycosides; Oligosaccharides; Polysaccharides; Pectins; Organic Acids; Lipids; Amino Acids; Xenobiotics.
7. Carbon Metabolism-I - Metabolism of Complex Carbohydrates and Derivates; Polysaccharides; 1. Degradation of Cellulose; 2. Degradation of Hemicelluloses and Pentosans; 3. Degradation of Chitin; 4. Degradation of Starch; 5. Degradation of Pectic Substances; 6. Degradation of Some other Polysaccharides and their Derivatives; 7. Degradation of Lignin; Synthesis of Polysaccharides; Oligosaccharides; Degradation and synthesis of Oligosaccharides; Disaccharides; Some other Glycosides; Other Glycosides; Sugar Derivatives; Metabolism of C1 Compounds.
8. Carbon Metabolism-II - Metabolism of Aliphatic Hydrocarbons; Organic Acid Metabolism; Oxalic Acids; Citric Acid; Lactic Acid; Fumaric Acid; Aconitic, Itaconic and Itatartaric Acids; Glyoxylic Acid; Other Acids; Lipid Metabolism; -oxidation; Lipid Synthesis; □Bread-down of Lipids; Non-Mitochondrial Biosynthesis of Fatty Acids; Biosynthesis of Phospholipids; Metabolism of -ketoadipate Pathway; Xenobiotics □Steroids; Metabolism of Aromatic Compounds; and Bioremediation
9. Respiration-I - Glycolysis; Endogenous Respiration; Phosphorylative Carbon Catabolism; Glycolysis; Hexose Diphosphate Pathway: E.M. Pathway; Hexose Monophosphate Pathway; Occurrence and Role of Pathways in Fungi
10. Respiration - II - Oxidative Decarboxylation of Pyruvic Acid; Tricarboxylic Acid Cycle; Steps of the TCA Cycle; Occurrence of TCA Cycle in Fungi; Role of TCA Cycle in Fungi

11. Respiration - III - Terminal Oxidation; Electron Transport and Respiratory Chain; Respiratory Enzymes; Oxidative Phosphorylation; Mechanism of Phosphorylation

12. Utilization and Metabolism of Nitrogen Sources — Chemical Nature of Nitrogen Sources; Utilization of Nitrogen Sources; Ammonium Salts; Nitrogen Metabolism; Metabolism of Nitrate/Nitrite; Metabolism of Amino Acids; Utilization and Metabolism of Proteins; Utilization and Metabolism of Nucleic Acid; Breakdown of Nucleic Acids and their Derivates; Biosynthesis of Nucleic Acids

13. Utilization and Metabolism of Inorganic Substances - Non-Metallic Elements; Hydrogen; Oxygen; Phosphorus; Sulphur; Metabolism of Sulphur; Assimilatory Sulphate Reduction; Metabolic Minerals; Potassium; Magnesium; Microelements; Iron; Zinc; Copper; Manganese; Molybdenum; Calcium; Cobalt, Boron, Scandium, Vanadium and Gallium

14. Vitamins and Growth Factor in Fungal Nutrition - Vitamin Requirements of Fungi; Thiamine (Vitamin B1); Riboflavin; Pyridoxine; Nicotinic Acid (Niacin); Pantothenic Acid; Biotin; Folic Acid; Inositol; Vitamin B12 Group; Choline; Some other Vitamins; Other Growth Factors

15. Growth - Types of Growth in Fungi; (a) Yeast Type Growth; (b) Plasmodial Growth; (c) Apical Growth; Growth of Filamentous Fungi; Site of Cellular Extension; Mechanism of Hyphal Tip Growth; Growth of Non-Filamentous Fungi; Growth of Dimorphic Fungi; Kinetics of Growth; Growth Rhythms; Factors Influencing Growth.

16. Physiology of Reproduction - Asexual Reproduction; Sexual Reproduction; Heterothallism in Fungi; Sex Hormones in Fungi; Sexual Morphogenesis; 1. Filamentous Ascomycetes; 2. Yeast; 3. Basidiomycetes; Factors; Temperature; Light; Carbon Dioxide; Hydrogen-ion-concentration; Nutrients; Carbon Source; Nitrogen Source; Carbon-Nitrogen Ratio; Mineral Elements; Vitamins

17. Spore Germination - Dormancy; Constitutive Dormancy; Exogenous Dormancy; Physiology of Germination; Metabolic Changes in Germination Spore; Enzyme Complement; Biosynthetic Processes during Germination

18. Fungal Metabolites - Acetate Pathway; Aflatoxins; Shikimic Acid Pathway; Aliphatic Compounds; Oxygen Heterocycles; Aromatic Metabolites; Terpenes; Tropolones; Quinones and Derivative; Nitrogenous Metabolites; Nitrogen Heterocyclic Compounds; Medicinal Metabolites; Miscellaneous Compounds

References

Organism Index

Subject Index

This is computer generated document and does not require signature

Scientific Publishers

Date :- Tue Mar 09 2021