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Nota di contenuto	Part 1. Basic aspects of fungi -- Chapter 1. The mystical world of mushrooms -- Chapter 2. The developmental history of Ustilago maydis: a saprophytic yeast, a mycelial fungus, a mushroom-like and a smut -- Chapter 3. Biochemical and molecular aspects of dimorphism in fungi -- Chapter 4. Biodiversity, taxonomy, conservation , ecology and utilization of Soil fungi: Indian scenario -- Chapter 5. Diversity and bioprospecting of yeasts from extreme environments -- Chapter 6. Marine fungal ecology in the molecular era -- Chapter 7. Oscillatory orchestration of the growth of Saccharomyces cerevisiae -- Chapter 8. Neurospora genetic backgrounds differ in meiotic silencing by unpaired DNA (MSUD) strength: Implications for Dp-mediated suppression of repeat-induced point mutation -- Part 2. Environmental sustainability -- Chapter 9. Fungal bioremediation: a step towards cleaner environment -- Chapter 10. Exploring fungal lignocellulose degradation: Secretomic and proteomic approaches -- Chapter 11. Fungi, the crucial contributors for nanotechnology: a green chemistry perspective -- Part 3. Interactions with plants, animals and humans --

Chapter 12. Recent developments in ectomycorrhizal fungal research -- Chapter 13. Rumen microbiome and plant secondary metabolites: Inhibition of methanogenesis and improving nutrient utilization -- Chapter 14. Class B-trichothecene profiles of Fusarium species as causal agents of head blight. - Chapter 15. Aflatoxin and ochratoxin detection and remediation for safe Health Food -- Chapter 16. The explosion of Brazilian endophytic fungal diversity: taxonomy and biotechnological potentials -- Chapter 17. Arbuscular Mycorrhizal Fungi in alleviation of cold stress in plants -- Chapter 18. Challenges in invasive fungal diseases -- Chapter 19. Diversity of endophytic fungi and their role in artificial agarwood production in Aquilaria -- Part 4. Bioprospects -- Chapter 20. Bioprospecting of fungal entomo- and myco-pathogens -- Chapter 21. Fungal enzymes: Sourcesand biotechnological applications -- Chapter 22. Fungi in hypogean environments: From bioprospection perspective -- Chapter 23. Secondary metabolites of mushrooms: A potential source for anticancer therapeutics with translational opportunities -- Chapter 24. Modulation of fungal metabolome by biotic stress -- Chapter 25. Marine fungi: A potential source of future cosmeceuticals. .

Sommario/riassunto

The book provides an introduction to the basics of fungi, discussing various types ranging from edible mushrooms to Neurospora – a model system for genetics and epigenetics. After addressing the classification and biodiversity of fungi, and fungi in different ecological niches, it describes the latest applications of fungi, their role in sustainable environments and in alleviating stress in plants, as well as their role in causing plant and animal diseases. Further chapters explore the advances in fungal interactions research and their implications for various systems, and discuss plant-pathogen interactions. The book also features a section on bioprospecting, and is an extremely interesting and informative read for anybody involved in the field of mycology, microbiology and biotechnology teaching and research. .