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Proteins with Biotechnology Potential -- Microbased Biorefinery for Gold Nanoparticle Production -- Mushrooms as Potential Sources of Entrepreneurships -- Lignocellulosic Biomass and Conversion into Biofuels -- Trichoderma as Potential Biofungicidal and Plant Growth Promoter -- Myco-Metabolites and Their Applications -- Natural Products of Endophytic Fungi and Their Applications -- Fungi as Sources of Biobased Fiber Materials -- Fungal Consortium for Organic Municipal Solid Waste Composting -- Fungal Applications in Biomass to Biorefineries -- Bioengineering Tools for the Production of Pharmaceuticals -- Fungal Metabolites as Sources of Medicines and Dietary Supplements -- Fungi as a Biocontrol Agent -- Bio-Prospects of Fungal Endophytes -- Value-Added Products of Mushrooms -- Index.

Sommario/riassunto

Fungi are an important link in the food webs of all ecosystems. They have immense potential and comprise a myriad of useful bioactive compounds. Fungi feature in a wide range of diverse processes and applications in modern agriculture, the food science industry, and the pharmaceutical industry. In the food and drink arena, the role of fungi is historically important in the form of mushrooms and in fermented foods as yeasts for baking and brewing. These roles are supplemented by the use of fungal food processing enzymes and additives, and more recently in the development of protein-based foodstuffs from fungi. Additionally, they are used in the formulation of biofertilizers and biopesticides used as biostimulants and bioprotectants of crops. The practical use of newer techniques such as genetic recombination and robotics have revolutionized the modem agricultural biotechnology industry, and have created an enormous range of possible further applications of fungal products. Myco-materials created from mycelia (the root-like parts of fungi) are gaining attention as a sustainable alternative for a wide range of materials. They are being used as insulation, sustainable packaging, foam inserts, and even "eco-leather." In fact, mycelium bricks are pound-for-pound stronger than concrete. In addition, medicinal uses of fungal species have been historically recorded as important agents in the pharmaceutical sciences. The potential for myco-materials seems limitless. The field of mycology and its application has become an increasingly important component in the education of industrial biotechnology. This book on applied mycology provides information helpful for developing entrepreneurial opportunities with fungi. This volume explains both the basic science and the applications of mycology and bio-resource technology with special emphasis on entrepreneurial applications. It offers a complete, one-stop resource for those interested in microbiology, food and agricultural science, medical mycology, and for those in industrial biotechnology.