

## Scope and Importance of Mushrooms

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Mushrooms are macrofungi it belonging mainly to the divisions Basidiomycota and Ascomycota. Mushroom are the fleshy, spore bearing fruiting bodies of a fungi. They have gained global importance due to their nutritional, medicinal, agricultural, environmental, and economic significance. Mushroom cultivation is an eco-friendly and sustainable agricultural practice that converts agro-industrial wastes into high-value protein-rich food. In addition, mushrooms contain bioactive compounds with antioxidant, anticancer, antimicrobial, and immunomodulatory properties. Mushroom can't make their own food. This article reviews the scope and importance of mushrooms in food security, medicine, agriculture, industry, environmental protection, and socio-economic development.

**Keywords:** Mushroom cultivation, functional food, medicinal mushrooms, sustainable agriculture, bioactive compounds

### Introduction

Mushrooms are fleshy, spore-bearing fruiting bodies of fungi that grow on soil, decaying organic matter, or living hosts. Mushroom is the heterotrophic organism. Mushroom are fast growing basidiomycetous fungi. They lack chlorophyll and depend on organic substrates for nutrition. Traditionally, mushrooms were collected from the wild, but scientific cultivation has transformed them into an important agro-industry. With increasing demand for healthy foods and sustainable farming systems, mushrooms have emerged as valuable functional foods.

### Nutritional Importance of Mushrooms

Mushrooms are rich in high-quality protein, essential amino acids, fiber, vitamins, and minerals while being low in fat and calories. They are good sources of B-complex vitamins, vitamin D, potassium, phosphorus, iron, and selenium. Mushrooms are known as vegetable meat Due to these properties.it contains 20-35% protein ,50-60% carbohydrates. Due to their low sodium and high potassium content, mushrooms are beneficial for cardiovascular health.

### Medicinal Importance of Mushrooms

Medical mushrooms have been used in traditional Chinese, Japanese and Indian medicine for centuries. Modern research has been proved that many mushrooms contains bioactive compounds its help prevent and treat different types of diseases. Medicinal mushrooms such as Ganoderma, Lentinula, Trametes, and Grifola contain bioactive compounds like beta-glucans, polysaccharides, terpenoids, and phenolics. These compounds exhibit anticancer, antioxidant, antimicrobial, immunomodulatory, cholesterol-lowering, and antidiabetic properties.

### Agricultural Importance

Mushroom cultivation is a very good example of sustainable agriculture. Mushroom cultivation utilizes agricultural wastes such as paddy straw, wheat straw, and sugarcane

bagasse and sawdust. It converting waste into wealth. It requires less land and water and space. It can be integrated with existing farming systems. Spent mushroom substrate is used as organic manure and soil conditioner.

### **Environmental Importance**

Mushrooms play a key role in biodegradation and nutrient recycling. They help decompose lignocellulosic materials and contribute to soil fertility. Certain mushrooms are also used in bioremediation of pollutants and heavy metals.

### **Economic and Social Importance**

Mushroom cultivation generates employment and income, especially for rural youth and women. It requires low initial investment and provides quick returns. Mushrooms also have significant export potential.

### **Conclusion**

Mushrooms are valuable organisms with immense scope in nutrition, medicine, agriculture, and environmental sustainability. Promotion of mushroom cultivation and value addition can contribute to food security, rural development, and environmental conservation.

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