

# Mushroom Cultivation

## Course Objectives:

- To study about types, nutritional and medicinal value of edible mushrooms and the toxicity of Poisonous Mushrooms.
- To learn the Cultivation Technology of edible mushrooms and its regulating factors.
- To know about short-term and long-term storage of mushrooms and their products.
- To understand the Cost benefit ratio - Marketing in India and abroad.

## Course Outcomes:

On completion of the course the students shall

- Have knowledge about the importance for integrating mushroom as an alternate nutritive food. Mushrooms.
- Have knowledge and skills for Cultivation of edible mushrooms.
- Know about the edible mushrooms available in India and their processing and storage methods.
- Have an understanding about the Low-cost cultivation Technology of edible mushrooms and adoption of mushroom cultivation as a profitable entrepreneurship.

## Unit I:

**LO: The students know about the nutritional and medicinal value of edible mushrooms and the toxicity of Poisonous Mushrooms.**

Introduction, history. Nutritional and medicinal value of edible mushrooms; Poisonous mushrooms. Types of edible mushrooms available in India - *Volvariella volvacea*, *Pleurotus citrinopileatus*, *Agaricus bisporus*. Cultivation Technology: Infrastructure: substrates (locally available) Polythene bag, vessels, Inoculation hook, inoculation loop, low-cost stove, sieves, culture rack, mushroom unit (Thatched house) water sprayer, tray, small polythene bag.

**Unit II: LO: The students will know the Cultivation Technology of edible mushrooms.**

Pure culture: Medium, sterilization, preparation of spawn, multiplication. Mushroom bed preparation -paddy straw, sugarcane trash, maize straw, banana leaves. Factors affecting the mushroom bed preparation - Low-cost technology, Composting technology in mushroom production.

## Unit III:

**LO: The students know about the short-term and long-term storage of mushrooms and their products.**

Storage and nutrition: Short-term storage (Refrigeration – up to 24 hours) Long term Storage (canning, pickles, papads), drying, storage in salt solutions. Nutrition - Proteins - amino acids, mineral elements nutrition - Carbohydrates, Crude fiber content - Vitamins.

**Practical:**

1. Preparation of spawn, mycelium culture (paddy mushroom)
2. Raw materials of mushroom bed preparation
3. Treatment of raw materials for sterilization
4. Composting technology in mushroom production
5. Storage, packaging and nutrient analysis of mushroom

**Text Books:**

- ✓ *B. C. Suman and V. P. Sharma. (2007). Mushroom Cultivation in India. Daya Publishing House, New Delhi.*

**Reference Books:**

- ✓ *Marimuthu, T. Krishnamoorthy, A.S. Sivaprakasam, K. and Jayarajan. R (1991) Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.*
- ✓ *Swaminathan, M. (1990) Food and Nutrition. Bappco, The Bangalore Printing and Publishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560018.*
- ✓ *Tewari, Pankaj Kapoor, S.C., (1988). Mushroom cultivation, Mittal Publications, Delhi.*
- ✓ *Nita Bahl (1984-1988) Hand book of Mushrooms, II Edition, Vol. I & Vol. II.*
- ✓ *Anon. (2010). The Cultivation of Mushrooms - An Outline of Mushroom Culture, Read Book Design, New Delhi*