

## **DEPARTMENT OF BOTANY**

### **Add on course: MUSHROOM CULTIVATION- THE WAY TO AN ENTREPRENEUR**

**Programme Code - BOMC001**

**Total – 30 hours**

#### **Course - Syllabus**

#### **Objective of the certificate course**

1. Provide the knowledge to identify edible and poisonous mushrooms
2. Provide hands on training for the preparation of bed for mushroom cultivation and spawn production
3. Give the students exposure to the experiences of experts and functioning mushroom farms
4. Help the students to learn a means of self employment and income generation

#### **Expected learning outcome**

1. Students will be able to identify edible types of mushroom
2. Gain the knowledge of cultivation of different types of edible mushrooms and spawn production
3. Learn a means of self-employment and income generation

#### **Module: I Mushroom morphology (2 Hours):**

Different parts of a typical mushroom & variations in mushroom morphology. Key to differentiate Edible from Poisonous mushrooms.

#### **Module: II Biology of Mushrooms (2 Hours):**

Button, Straw & Oyster- General morphology, distinguishing characteristics, spore germination and life cycle.

#### **Module: III Nutrient Profile of Mushroom (1 Hour):**

Protein, amino acids, calorific values, carbohydrates, fats, vitamins & minerals.

#### **Module: IV Health benefits of Mushroom (1 Hour):**

Antiviral value, antibacterial effect, antifungal effect, anti-tumour effect, haematological value cardiovascular & renal effect, in therapeutic diets, for aged persons & diabetes mellitus.

**Module: V Common edible mushrooms (2 Hours):**

Button mushroom (*Agaricus bisporus*), Milky mushroom (*Calocybe indica*), Oyster mushroom (*Pleurotus sajorcaju*) and paddy straw mushroom (*Volvariella volvcea*).

**Module: VI Principles of mushroom cultivation (7 Hours):**

Structure and construction of mushroom house. Sterilization of substrates. Spawn production - culture media preparation- production of pure culture, mother spawn, and multiplication of spawn. Composting technology, mushroom bed preparation. Spawning, spawn running, harvesting. Cultivation of oyster and paddy straw mushroom. Problems in cultivation - diseases, pests and nematodes, weed moulds and their management strategies.

**Module: VII Post harvest technology (3 Hours):**

Preservation of mushrooms - freezing, dry freezing, drying, canning, quality assurance and entrepreneurship. Value added products of mushrooms.

**Module: VIII Training/ Workshop/ Field visit (12 Hours)**

Sterilization and sanitation of mushroom houses, instruments and substrates. Preparation of mother culture, media preparation, inoculation, incubation and spawn production. Cultivation of oyster mushrooms using paddy straw/agricultural wastes. Different methods- efficient and economic methods for mass production and household production. Costing- production cost, breeding cost, supply chain system. Scope of new entrepreneur. Overview of Indian market and foreign market

**References**

1. Marimuthu, T. et al. (1991). Oster Mushroom. Department of Plant Pathology. Tamil Nadu Agricultural University, Coimbatore.
2. Nita Bhal. (2000). Handbook on Mushrooms. 2nd ed. Vol. I and II. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
3. Pandey R.K, S. K Ghosh, 1996. A Hand Book on Mushroom Cultivation. Emkey Publications.
4. Pathak, V. N. and Yadav, N. (1998). Mushroom Production and Processing Technology. Agrobios, Jodhpur.
5. Tewari Pankaj Kapoor, S. C. (1988). Mushroom Cultivation. Mittal Publication, New Delhi.
6. Tripathi, D.P. (2005) Mushroom Cultivation, Oxford & IBH Publishing Co. PVT.LTD, New Delhi.
7. V.N. Pathak, Nagendra Yadav and Maneesha Gaur, Mushroom Production and Processing Technology/ Vedams Ebooks Pvt Ltd., New Delhi (2000)

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