COOCH BEHAR PANCHANAN BARMA UNIVERSITY,

COOCH BEHAR- 736101, WEST BENGAL, INDIA

Structure of Skill Enhancement Course on Cultivation of Mushroom

Year	Semester	Paper	Title
1st Year	Semester 1	SEC 1	i. Selection of Oyster Mushroom as a model of cultivation. ii. About Oyster Mushroom iii. Nutritional and Medicinal value of oyster mushroom iv. Low-cost production of oyster mushroom
1st Year	Semester 2	SEC 2	i. Disease and Insect Pests management ii. Care and Management of Oyster Mushroom iii. Production cost of oyster mushroom
2nd Year	Semester 3	SEC 3	i. Mushroom spawn production cost ii. Processing and value addition of oyster mushroom. iii. Post-harvest management of mushroom waste.

Skill Enhancement Course on Cultivation of Oyster mushroom 1st Year – Semester 1 (SEC 1)

Course objective:

- To provide students with fundamental knowledge about oyster mushrooms, their biology, nutritional composition, and medicinal properties.
- To develop practical skills in low-cost cultivation techniques using locally available resources.
- To train students in disease and pest management practices for sustainable mushroom production.

Marks distribution: CE: 15, Practical: 35.

. Selection of Oyster Mushroom as a model of cultivation.

- Advantages of cultivation of Oyster Mushroom in a climatic condition like Coochbehar.

i. About Oyster Mushroom

- Introduction to mushrooms and their importance.
- Different types of edible mushrooms with special reference to oyster mushrooms.
- History, origin, and distribution of oyster mushrooms.
- Morphology, taxonomy, and life cycle.
- Importance of oyster mushrooms in nutrition, livelihood, and sustainable farming.

ii. Nutritional and Medicinal Value of Oyster Mushroom

Nutritional composition (proteins, carbohydrates, vitamins, minerals).

- Medicinal properties (antioxidant, antimicrobial, anticancer, cholesterol-reducing).
- Role in boosting immunity and preventing lifestyle diseases.
- Comparison of oyster mushrooms with other food sources.

v. Low-cost Production of Oyster Mushroom

- Introduction to mushroom cultivation methods.
- Locally available substrates (straw, sawdust, agri-residues).
- Preparation of substrate and sterilization techniques.
- Spawning methods and spawn inoculation.
- Maintaining optimum conditions (temperature, humidity, light, ventilation).
- Harvesting techniques and yield estimation.

1st Year – Semester 2 (SEC 2) Course objective:

- To equip learners with knowledge of care, management, and economic aspects of oyster mushroom farming.
- To introduce the principles and methods of spawn production for ensuring quality cultivation.
- To impart skills in processing, preservation, and value addition for enhancing market potential.

Marks distribution: CE: 15, Practical: 35.

. Disease and Insect Pest Management

- Common fungal, bacterial, and viral diseases in oyster mushroom.
- Symptoms, causes, and control measures.
- Insect pests (flies, mites, nematodes) and their management.
- Preventive measures: hygiene, sanitation, and disinfection practices.
- Integrated Pest Management (IPM) in mushroom cultivation.

. Care and Management of Oyster Mushroom

- Environmental requirements during different growth stages.
- Watering, humidity, and temperature management.
- Use of polythene bags, trays, and shelves.
- Importance of cleanliness in mushroom houses.
- Common mistakes and their remedies.

. Production Cost of Oyster Mushroom

- Calculation of input costs: substrate, spawn, labor, infrastructure.
- Estimation of yield and income.
- Cost–benefit analysis.
- Economic importance of oyster mushroom cultivation for small farmers.

2nd Year – Semester 3 (SEC 3) Course Objectives:

- To encourage entrepreneurship, self-employment, and income generation through mushroom cultivation.
- To promote eco-friendly and sustainable agricultural practices by utilizing agro-waste for mushroom farming.

Marks distribution: CE: 15, Practical: 35.

i. **Mushroom Spawn Production Cost**

- Importance of quality spawn in mushroom cultivation.
- Laboratory requirements for spawn production.
- Media preparation and sterilization.
- Pure culture maintenance and mother spawn preparation.
- Commercial spawn production and packaging.
- Cost estimation and profitability of spawn production.

ii. **Processing and Value Addition of Oyster Mushroom**

- Importance of processing for longer shelf life. Methods: drying, pickling, canning, powder preparation.
- Storage, both long term and short term.
- Mushroom-based products: soups, biscuits, noodles, snacks.
- Transportation. Packaging, branding, and marketing strategies.
- Export potential and entrepreneurship opportunities.

iii. **Post-harvest management of mushroom waste.**

- Utilization of spent mushroom substrate.