B.Sc. III Year **Semester – VI**

BBO –S601
SEC-4 Mushroom Culture Technology

MM : 100
Time : 3 hrs
L Credit
4 4
Total Hours: 60

Sessional : 30
ESE : 70
Pass Marks : 40

Learning objective:

- To understand the techniques used mushroom culture technology.
- To acquire the information about the mushroom cultivation and management technology.
- To acquire an overall knowledge on nutritional and medicinal value of edible mushrooms.
- To become familiar with mushrooms storage and nutrition value.
- To learned technique and acquire the information on types of foods prepared from mushrooms.

Learning outcomes:

- The student will be able to familiar with history, nutritional and medicinal value of edible mushrooms, and poisonous mushrooms.
- The student will be able to understand about the infrastructure and necessary tools and items required for cultivation.
  - The student will be able to understand the various methods used for pure culture, sterilization, preparation of spawn, multiplication, and mushroom bed preparation.
  - The student will be learned and understand the various methods of used in whole mounts, peel mounts, squash preparations, clearing, maceration and sectioning; tissue preparation.
  - The student will be learned various techniques used for short-term storage and long term storage of mushrooms.
  - The students can understand about the cost benefit ratio, marketing and export value of mushrooms.
  - The student will be able take the decisions for carrier point of views in research, industries and academia entrepreneurships etc.

Unit 1: Introduction: **(10 Lectures)**

History; nutritional and medicinal value of edible mushrooms; Poisonous mushrooms; types of edible mushrooms available in India –*Volvariella volvacea, Pleurotus citrinopileatus, Agaricus bisporus*.

Unit 2: Cultivation of Mushroom : **(24 Lectures)**

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; 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 and cultivation of *Volvariella volvacea, Pleurotus citrinopileatus, Agaricus bisporus*.

Unit 3: Storage and nutrition: **(16 Lectures)**

Short-term storage (refrigeration – up to 24 hours) long term storage (canning, pickels, papads), drying, storage in salt solutions; nutrition – proteins - amino acids, mineral elements nutrition - carbohydrates, crude fiber content - vitamins.

Unit 4: Food preparation: **(10 Lectures)**

Types of foods prepared from mushroom; research centers -national level and regional level; cost benefit ratio - marketing in India and abroad, export value.

Suggested readings:

1. A text book of Mushroom cultivation: Theory and practice by Aggarwal, A; Sharma Y.P. and Jangra, E. (2022) New Rays Publishing House, New Delhi.
2. Mushroom Cultivation: An Illustrated Guide to Growing Your Own Mushrooms at Home. by Tavis Lynch, Publisher Quarry Books.