

DEPARTMENT OF MICROBIOLOGY			Certificate Course				
Course Type	Course Code	Course Code Course Title	Credits	Total Contact Hours	CIA	Ext	Total
Certificate Course	CRC01	Mushroom Technology	2	30	25	75	100

Course Objectives:

1. To teach to the students knowledge and skills, which allow them to establish a mushroom cultivation enterprise
2. To study different cultivation methods of mushroom
3. To understand the biology and nutritional value of mushroom
4. To learn the application of mushroom technology in commercial and therapeutic field
5. To know about pathogenesis of different bacterial, fungal diseases of mushroom and post harvest technology
6. Learn a means of self-employment and income generation

Unit-I: Introduction to Mushroom Cultivation

Mushroom – Introduction-Taxonomical rank -History and Scope of mushroom cultivation -Mushroom edible types – Its natural growth aspects and climatic requirement –Selection of Mushroom cultivation sites – Role of composting in mushroom cultivation – Preparation of different types of compost – Key to differentiate edible from poisonous mushrooms.

Unit-II: Biology of Mushrooms

Button mushroom (*Agaricusbisporus*), Milky mushroom (*Calocybeindica*), Oyster mushroom (*Pleurotussajorcaju*) and paddy straw mushroom (*Volvariellavolvcea*) - General morphology, distinguishing characteristics, spore germination and life cycle – Nutritional and calorific values of mushroom. Health benefits of mushroom. Therapeutic aspects- antitumor effect.

Unit-III: Cultivation system and Farm design

Fundamentals of cultivation system – Small unit and larger commercial unit – Principles of mushroom shed layout – location of building plot, design of farm, bulk chamber, composting platform, equipments and facilities, pasteurization room and growing rooms.

Unit-IV: Spawn and Spawning

Facilities required for spawn preparation, preparation of spawn and substrates, preparation of pure culture and maintenance, storage of spawn. Importance of casing mixture, quality parameters of casing soil, different types of casing mixtures, commonly used materials.

Unit-V: Diseases and Harvest technology

Insect pests, nematodes, mites, viruses, fungal competitors and other important diseases. Methods of harvesting of mushroom – packaging, storing and grading of Mushrooms – Post harvest technology – freezing , dry freezing, drying , canning, quality assurance. Value added products of mushrooms. Preparation of mushroom recipes. Guidelines to become entrepreneur.

Training/ Workshop/ Field visit

Mushroom farm – Set up, Sterilization and Sanitation of mushroom house – shed, instruments etc. Preparation of mushroom beds – Composts, Paddy straw, sugarcane trash, maize straw, banana thrash and vegetable wastes, Preparation of spawn under controlled conditions (Preparation of mother spawn in saline bottle and polypropylene bag and their multiplication), Cultivation of oyster mushroom, Harvesting and Packing of mushroom – Marketing, Diseases of mushrooms (photographs), Preparation of mushroom recipes – Mushroom biryani, mushroom murchurian, mushroom omelette, mushroom soup, mushroom fried rice, mushroom 65. Visit to relevant Labs / Field Visits.

Books for Study

1. Marimuthu, T. Krishnamoorthy, A.S. Sivaprakasam, K. and Jayarajan. R (1991). Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.

Books for Reference

1. Aneja, K.R. (1993). Experiments in Microbiology, Plant pathology, Tissue culture and mushroom cultivation, WishwaPrakashan, New Age International (P) Ltd., New Delhi.
2. Chang, S. and Miles, P.G. (2004). Mushrooms: Cultivation, Nutritional Value, Medicinal Effect, and Environmental Impact, CRC Press online.
3. Mushroom Cultivation, Tripathi, D.P. (2005) Oxford & IBH Publishing Co. Pvt. Ltd, New Delhi.
4. Pathak, V.N. Nagendra Yadav and Maneesha Gaur, (2000) Mushroom Production and Processing Technology/ VedamsEbooks Pvt Ltd., New Delhi.

Web Resources

1. <https://www.mushroomcouncil.com/...mushrooms/six-steps-to-mushroom-farming>
2. <https://www.krishisewa.com/articles/.../46-technology-for-mushroom-cultivation>.
3. <https://www.indiamart.com> › Vocational Education and Training
4. <https://www.MushroomProductionTechnology-youtube.com>
5. <https://www..mushroomcultivation-youtube.com>

Pedagogy

Chalk and talk, PPT, Group discussion, Seminar, Screening of educational videos and quiz

Course designers

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