

CERTIFICATE COURSE IN MUSHROOM CULTIVATION



CERTIFICATE COURSE
MUSHROOM CULTIVATION

Course Co-ordinator: Prof. Arti Prasad

ADMISSION PROCEDURE

Eligibility: 10th with minimum of 50% marks

Seats: Minimum 10; Maximum 30

Fee: 4000/-

Reservation: As per University rule

Mode of instruction: English and Hindi both

Duration of the Course: 6 months

Session: July and January of each year

Course material: Compendium of lectures, Video lecture, hands-on-training by experts, Certificate after course completion and exam

Course assessment: Assessment of students will be carried out on the basis of internal evaluations which include attendance, assignments, viva, test papers and practical skill during training and University exam.

IMPORTANCE OF THE COURSE

The fundamental idea behind the course is to embark on the importance of self-employment and to develop confidence and personal skills so that candidates can uptake small business by setting up a mushroom farm.

Mushrooms are found in nature in many places on dry leaves, logs, straw etc. There are about 30000 varieties of mushrooms in nature. Among them about 2000 are edible. Scientists have identified methods of cultivation for 10 varieties. Because of its nutritional aspects and export potential, mushroom cultivation is becoming popular.

Moreover, in the present scenario where seasonal unemployment is hampering the growth of population mushroom cultivation provides opportunity for a year long business with very less capital investment.

Mushroom cultivation has been recognized under Modular Employable Skills (MES), Ministry of Skill Development and Entrepreneurship, Government of India.

OBJECTIVES OF THE COURSE

The course would play a significant role in generating self employment opportunities and help to reduce vulnerability to poverty and strengthen livelihoods. The course would provide a reliable source of income as it requires very less capital investment and does not require access to large agriculture land. It is an eco-friendly agricultural practice helping in the efficient utilization of agricultural and industrial waste.

COURSE OUTCOMES

At the end of the course, the candidates will be able to

1. Learn details about important types of Mushroom and their cultivation
2. Learn low cost production and marketing of mushrooms.
3. Take up Mushroom Cultivation and run it profitably
4. Maintain Mushroom farm in a hygienic and scientific way
5. Work out the economics of Mushroom Cultivation
6. Provide means of self employment and income generation
7. Take up value added products of Mushroom i.e. preparation of Mushroom Pickle, Powder, Papad and different items of Food

Skills to be provided

1. To prepare the pure culture stains.
2. To prepare the mother spawn.
3. Skill in handling equipment
4. Skills on maintaining different types of mushroom crops.
5. Skills in mushroom processing.
6. Skill in setting up a mushroom cultivation lab

EMPLOYMENT OPPORTUNITIES

The candidates will become self-reliable and employable and also being equipped with additional skills to meet the challenges in future.

Opportunities of Self Employment

There are many ways to self employment after the course which include

1. Establish and effectively manage a small independent business enterprise by setting up a holistic mushroom farm or in partnership by liaising with different stake holders
2. Mushroom spawn producer
3. Mushroom grower (crop producer)
4. Mushroom marketer
5. Mushroom processor

Opportunities of Waged Employment

1. Lab assistant in mushroom labs.
2. Mushroom marketer in a industry
3. Mushroom lab equipment operator in a lab.
4. Mushroom spawn producer in a lab.
5. Mushroom processor in a farm.

SYLLABUS

Theory I: Mushroom Cultivation Techniques

CODE: CC MC -CT01

UNIT I

Introduction to mushrooms and mushroom cultivation. History and Scope of mushroom cultivation. Mushroom biology including Taxonomical rank, life cycle Vegetative characters; Edible and Poisonous mushrooms

UNIT II

Planting material: Spawn culturing: techniques, media preparation, sterilization, equipments used, Laminar flow chamber, autoclave etc.

Preparation of spawn, Pure culture, Mother spawn, Spawn production

UNIT III

Cultivation technique of Common edible mushrooms :Button mushroom (*Agaricus bisporus*), Milky mushroom (*Calocybe indica*), Oyster mushroom (*Pleurotus sajorcaju*) and paddy straw mushroom (*Volvariella volvcea*).

UNIT IV

Problems in mushroom cultivation - diseases, pests and nematodes, weed moulds and their management strategies.

UNIT V

Importance of mushrooms: Nutritional value of mushrooms and the mushroom recipes, Medicinal mushrooms and their use in industries

Therapeutic aspects- antitumor effect

Theory II: Harvest and post harvest technology and Mushroom farm management

CODE: CC MC -CT02

UNIT I

Harvesting and Post harvesting technology: harvesting techniques, storing methods, Preservation of mushrooms - freezing, dry freezing, drying, canning, quality assurance and entrepreneurship. Value added products of mushrooms.

UNIT II

Acquaintance with infrastructure, Structure and construction mushroom farm, equipments and machineries required in the mushroom cultivation process

UNIT III

Maintenance of Mushroom lab: Housing requirements: Growing room, maintenance of optical environmental conditions, Sterilization, Sanitation & food safety in mushroom farm construction of proper housing, economic consideration and cost.

UNIT IV

Marketing: Marketing definition and concept, Marketing planning / strategy, Product implementation, Marketing segmentation major variables, Marketing research (SWOT), Marketing mix, Product life cycle.

UNIT V

Centres of mushroom cultivation in India, cultivation of lesser known mushrooms, Integration of solar energy in mushroom cultivation system, poisonous mushrooms, Mushroom cultivation for differentially able people

PRACTICALS
CODE: CC MC -CP01

1. Demonstration of Button and Oyster cultivation
2. Collection of tissue, Tissue isolation,
3. Identification of edible and poisonous wild Mushrooms
4. Preparation of pure cultures, Sub culturing,
5. Disease identification in pure cultures.
6. Preparation of mother spawn; Incubation of mother spawn.
7. Disease identification of mother spawn.
8. Storing the cultures and mother spawn
9. Substrate preparation
10. fruiting bags production,
11. Mushroom cultivation and harvesting techniques
12. Processing.
13. Lab maintenance
14. Equipment handling.
15. Field trip to commercial mushroom farms and scientific institutions.

SUGGESTED READING

1. Handbook on Mushrooms by Nita Bahl Published by Oxford & IBH publishing Company.
2. Mushroom Cultivation by J.N. Kapoor published by ICAR, New Delhi.
3. A handbook of cultivated mushrooms by Dr. Ashok Ghanekar.
4. Handbook of Horticulture IARI, New Delhi.
5. Marimuthu, T. et al. (1991). Oster Mushroom. Department of Plant Pathology. Tamil Nadu Agricultural University, Coimbatore.
6. Nita Bhal. (2000). Handbook on Mushrooms. 2nd ed. Vol. I and II. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
7. Pandey R.K, S. K Ghosh, 1996. A Hand Book on Mushroom Cultivation. Emkey Publications.
8. Pathak, V. N. and Yadav, N. (1998). Mushroom Production and Processing Technology. Agrobios, Jodhpur.
9. Tewari Pankaj Kapoor, S. C. (1988). Mushroom Cultivation. Mittal Publication, New Delhi.
10. Tripathi, D.P. (2005) Mushroom Cultivation, Oxford & IBH Publishing Co. PVT.LTD, New Delhi.
11. V.N. Pathak, Nagendra Yadav and Maneesha Gaur, Mushroom Production and Processing Technology/ VedamsEbooks Pvt Ltd., New Delhi (2000)

