

Add -On Course offered by
Department of Botany
GGDC, Keshiary



VALUE-ADDED COURSE ON

MUSHROOM Cultivation



Contact :
Department of Botany
GGDC at keshiary



Department of Botany
Government General Degree College at Keshiary

Telipukur, Tilaboni Mahishamura, Keshiary, Paschim Medinipur, PIN : 721135

VALUE-ADDED COURSE ON MUSHROOM CULTIVATION

Scheme of Examination and Syllabus

Introduction:

Mushroom culture is the process of growing mushrooms from spores or mycelium on a suitable substrate. Mushrooms are fungi that lack chlorophyll and depend on organic matter for nutrition. They have a complex life cycle that involves alternation of generations between a haploid gametophyte and a diploid sporophyte. Mushroom culture can be done for food, medicine, or industrial purposes. Some of the steps involved in mushroom culture are:

- Obtaining a pure culture of the desired mushroom species from spores or tissue samples on agar plates or liquid media.
- Multiplying the culture on grain spawn or liquid culture syringes.
- Preparing the substrate from agricultural wastes, such as straw, sawdust, or compost.
- Inoculating the substrate with the spawn or liquid culture and maintaining the optimal temperature, humidity, and ventilation for colonization.
- Harvesting the mushrooms when they reach maturity and processing them for consumption or storage.

Mushroom culture is a sustainable and profitable way of utilizing agro-wastes and producing nutritious and medicinal food. Mushrooms have been used as food and medicine since ancient times. Mushroom contains all essential amino acids, vitamin B complex, iron, calcium, potassium, phosphorous, folic acid and other biochemical compounds. It is also a good source of dietary fibre. It is regarded as highly edible even for people suffering from cholesterol problems, heart diseases, diabetes and cancer. Mushroom cultivation has become a source of income generation since there is a large demand for healthy and quality food products. Many value-added products are also obtained from mushrooms. The cultivation procedure is characterized by small initial investment and year-round production. It is an eco-friendly agricultural practice.

Considering the commercial viability and self-employment potential of mushroom cultivation and marketing, the Department is offering the same as an add-on certificate course to the undergraduate students of the College.

Aims of the Course

1. To enable the students to identify the edible and poisonous mushrooms.
2. To provide hands-on training for the preparation of beds for mushroom cultivation and its harvesting, pests and diseases control and post-harvesting management.
3. To provide the students with awareness about the marketing trends of Mushrooms.
4. To give the students exposure to the experiences of experts in the field and to functioning mushroom farms.
5. To help the students to learn a means of self-employment and income generation.

Duration of Course: The course shall extend over a period of three months (30 hrs).

Admission Procedure:

Candidates for admission to the course should be students of **the Government General Degree College at Keshiary**, Paschim Medinipur. Interested students shall apply for admission at the time of notification in the prescribed form. Certificates will be issued to the candidates on successful completion of the course.

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SYLLABUS
MUSHROOM CULTIVATION

Course objectives

- To facilitate self-employment.
- To know the nutrient value of mushrooms.
- To study the morphology and types of Mushrooms.
- To know the spawn production technique.
- To be aware of the identification of edible and poisonous Mushrooms.
- To learn the prospects and scope of mushroom cultivation in small-scale industry.
- To understand the Diseases. Post-harvesting techniques of Mushrooms.

UNIT I

Introduction – History of mushroom cultivation; Classification and distribution of mushroom; life cycle of mushroom. Identification of poisonous mushrooms.

UNIT II

Spawn preparation - Isolation of pure culture; Nutrient media for pure culture; layout of spawn preparation room; raw material of spawn; sterilization; preparation of mother spawn and multiplication.

UNIT III

Cultivation of mushroom, layout of mushroom shed - small scale and large scale production unit. Types of raw material – preparation and sterilization; Mushroom bed preparation – maintenance of mushroom shed; harvesting method and preservation of mushrooms.

UNIT IV

Nutrient values of mushroom – protein, carbohydrate, fat, fibre, vitamins and amino acids contents; short and long term storage of mushroom; preparation of various dishes from mushroom. Medicinal value of mushroom – cultivation, extraction, isolation and identification of active principle from mushroom. Pharmacological and economic values of mushroom.

UNIT V

Cultivation of following types of mushroom – milky mushroom; oyster mushroom, button mushroom and any one medically valuable mushroom.

Practical: All the items included in theory.

SUGGESTED BOOKS

1. Paul Stamets, J.S. and Chilton, J.S. 2004. Mushroom cultivation A practical guide to growing mushrooms at home, Agarikon Press.
2. Tewari and Pankaj Kapoor S.C. 1993. Mushroom cultivation. Mittal Publication. Delhi.
3. Marimuth et al., 1991. Oyster Mushrooms. Dept. of Plant pathology, TNAU, Coimbatore.
4. Nita Bahl. 1988. Hand book of Mushrooms, 2nd Edition, Vol I & II.
5. Shu Fing Chang, Philip G. Miles and Chang, S.T. 2004. Mushrooms Cultivation, nutritional value, medicinal effect and environmental impact. 2nd ed., CRC press.

Course Outcome

- Students can start a small-scale industry of Mushroom cultivation.
- Students study the morphology and types of Mushrooms.
- They are aware of the identification of edible and poisonous Mushrooms.
- Students will be able to produce spawn on their own.
- Learned the prospects and scope of mushroom cultivation in small-scale industry.
- Studied the technique of Mushroom cultivation.
- Understood the Diseases. Post-harvesting techniques of Mushrooms.