

CERTIFICATE COURSE IN MUSHROOM CULTURE

(Non-Semester)

(With effect from the academic year 2013-14)

Eligibility for the Course

Candidates for admission to Certificate course in Mushroom Culture could possess a Higher Secondary school Education in Science subjects with Biology

Duration of the Course

One year Certificate course in Mushroom Culture course non-semester for One Year duration

Examination

All the theory papers are of 3 hours duration each for a maximum of 100 marks with a passing minimum of 35 marks. Practical examinations are also for 3 hours duration for a maximum of 100 marks and a passing minimum of 35 marks.

Question Paper Pattern

Maximum marks: 100

Time: 3 hours

Part A (5 x 3 = 15)

Five short answer questions (One question from each unit)

Part B (5 x 8 = 40)

Paragraph questions (Total questions 8, out of which answers are to be given for any five questions;

Part C (3 x 15 = 45)

Total questions 5, out of which answers are to be given for any Three questions;

S.No	Theory & Practicals	Maximum Marks	Minimum Marks
1.	Mushroom Classification & Economic Importance	100	35
2.	Mushroom Cultivation Techniques	100	35

PAPER I: MUSHROOM CLASSIFICATION & ECONOMIC IMPORTANCE

Unit: I Mushroom morphology:

Different parts of a typical mushroom & variations in mushroom morphology. Key to differentiate Edible from Poisonous mushrooms.

Unit: II Mushroom Classification:

Based on occurrence- Epigenous & Hypogenous, Natural Habitats-Humicolous, Lignicolous & Coprophilous, Color of spores- white, yellow, pink, purple brown & black, Morphology- fruiting layers exposed to air, fruiting layers not exposed to air, plants with predominantly pitted cap, cap saddled shape & saucer shape, Structure and texture of fruit bodies-gilled fungal & pore fungal, Fruit bodies and spores- Ainsworth et al (1973) classification. Recent Classification- 8th edition of Ainsworth & Bisby's 'Dictionary of Fungi'.

Unit: III Biology of Mushrooms:

Button, Straw & Oyster- General morphology, distinguishing characteristics, spore germination and life cycle.

Unit: IV Nutrient Profile of Mushroom:

Protein, amino acids, calorific values, carbohydrates, fats, vitamins & minerals.

Unit: V Health benefits of Mushroom:

Antiviral value, antibacterial effect, antifungal effect, anti-tumour effect, haematological value cardiovascular & renal effect, in therapeutic diets, adolescence, for aged persons & diabetes mellitus.

PAPER II: CULTIVATION TECHNIQUES

Unit: I Cultivation System & Farm design:

Fundamentals of cultivation system- small village unit & larger commercial unit.

Principles of mushroom farm layout- location of building plot, design of farm, bulk chamber, composting platform, equipments & facilities , pasteurization room & growing rooms.

Unit: II Compost & Composting:

Principles of composting, machinery required for compost making, materials for compost preparation.

Methods of Composting- Long method of composting (LMC) & Short method of composting (SMC).

Unit: III Spawn & Spawning:

Facilities required for spawn preparation, Preparation of spawn substrate, preparation of pure culture, media used in raising pure culture, culture maintenance, storage of spawn.

Unit: IV Casing materials & Case running:

Importance of casing mixture, Quality parameters of casing soil, different types of casing mixtures, commonly used materials.

Unit: V Cultivation of Button , Oyster and Straw Mushrooms:

Collection of raw materials, compost & composting, spawn & spawning, casing & case run, cropping & crop management, picking & packing. Visit to relevant Labs/Field Visits

Text Book:

1.Mushroom Cultivation, Tripathi, D.P.(2005) Oxford & IBH Publishing Co. PVT.LTD, New Delhi.

Reference Books:

1.Mushroom Production and Processing Technology, Pathak Yadav Gour (2010) Published by Agrobios (India).

2. A hand book of edible mushroom, S.Kannaiyan& K.Ramasamy (1980). Today & Tomorrows printers & publishers, New Delhi

3.Handbook on Mushrooms, Nita Bahl, oxford & IBH Publishing Co.