

PERIYAR INSTITUTE OF DISTANCE EDUCATION (PRIDE)

PERIYAR UNIVERSITY

DIPLOMA IN MUSHROOM CULTURE

Regulations

1. CONDITION FOR REGULATIONS

A candidate who have passed the Higher Secondary Examination (Academic Stream) conducted by the government of Tamilnadu or an examination as equivalent to 10, +2 course including CBSE, which have been recognized by the Periyar University or any other University accepted by the syndicate as equivalent there to subject to such conditions as may be prescribed therefore shall be permitted to appear and qualify for Professional Diploma in mushroom Culture examination of this University after a course of study of ONE academic year.

2. DURATION OF THE COURSE

The course of the professional Diploma in Mushroom Culture shall consist of one academic year.

3. ELIGIBILITY FOR THE DIPLOMA

A candidate shall be eligible for the professional Diploma in Mushroom Culture is he/she has satisfactorily undergone the prescribed course of study for a period of not less than one year and passed examinations in all papers.

4. COURSE OF STUDY

The course of study shall comprise instruction in books prescribed from time to time

1. Paper 1: An Introduction To Mushrooms
 2. Paper 2: Techniques In Mushroom Production
 3. Paper 3: Diseases and Problems of Mushroom Cultivation
 4. Paper 4: Entrepreneurship Development In Mushroom Cultivation
- Practical -1 : Development Of Mushroom Substrate And Spawn -Lab
Practical -1I: Cultivation Of Mushroom - Lab

5. EXAMINATIONS

The examinations shall be three hours duration to each paper at the end of the year. The candidate failing in any subject(s) will be permitted to appear for each failed subject(s) in the subsequent examination.

6. SCHEME OF EXAMINATIONS

The scheme of the Examinations shall be follows:

S.NO	PAPER CODE	TITLE OF THE PAPER	EXAM DURATION	MAX.MARKS
1.	PAPER 1	An Introduction To Mushrooms	3	100
2.	PAPER 2	Techniques In Mushroom Production	3	100
3.	PAPER 3	Diseases and Problems of Mushroom Cultivation	3	100
4.	PAPER 4	Entrepreneurship Development In Mushroom Cultivation	3	100
	Practical -I	Development Of Mushroom Substrate And Spawn –Lab		100
	Practical -II	Cultivation Of Mushroom - Lab	3	100
TOTAL MARKS				600

5. PASSING MINIMUM

A candidate shall be declared to have passed examinations in theory of study only is he/she scores not less than 40 marks out of 100 in the University examinations.

6. CLASSIFICATION OF SUCCESS FUL CANDIDATES

Candidate who secures not less than 60% of the aggregate marks in the whole examination shall be declared to have passed the examination in **FIRST CLASS**. All other successful candidates shall be declared to have passed in **SECOND CLASS**. Candidates who obtain 75% in **FIRST CLASS WITH DISTINCTION** provided they pass all the examinations prescribed for the course in the first appearance.

7. QUESTION PAPER PATTERN:

TIME: 3 hours

Max.marks: 100

PART A: 5 X 5=25

Answers all questions

Two questions from each unit with Internal Choice

PART: 5 X 15=75

Answer all questions

Two questions from each unit with Internal Choice

Diploma in Mushroom Culture
Paper 1: An Introduction to Mushrooms

Unit I

Mushroom – Introduction-Taxonomical rank -History and Scope of mushroom cultivation - Edible and Poisonous Mushrooms-Vegetative characters.

Unit II

Structure and key for identification of edible mushrooms- Button mushroom (*Agaricus bisporus*), Milky mushroom (*Calocybe indica*), Oyster mushroom (*Pleurotus sajorcaju*) and paddy straw mushroom (*Volvariella volvcea*).

Unit III

Structure and key for identification of poisonous mushrooms– Truffles (*Tuber elanosporum*), *Ammanita* sp , *Galerina marginata*, and *Chlorophyllum molybdites*.

Unit IV

Principles of mushroom cultivation- Sterilization and disinfections of substrates. - Pasteurization of different substrates –spore printing, pure culture, spawn production and their maintenance.

Unit V

Nutritional and medicinal values of mushrooms-value added products of mushrooms soup, cutlet, vegetable curry, samosa, omelette, pickle etc.

Reference

1. Nita Bhal. (2000). Handbook on Mushrooms. 2nd ed. Vol. I and II. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. V.N. Pathak, Nagendra Yadav and Maneesha Gaur, Mushroom Production and Processing Technology/ Vedams Ebooks Pvt Ltd., New Delhi (2000)

Paper 2: TECHNIQUES IN MUSHROOM PRODUCTION

Unit I

Structure and construction of mushroom house- layout of Traditional and Greenhouse method- maintenance of sanitation in mushroom plants.

Unit II

Isolation and culture of spores- culture media preparation- production of mother spawn- multiplication of spawn –spawn production- composting technology, bed, polythene bag preparation, spawning - casing - cropping

Unit III

Cultivation of oyster and paddy straw mushroom - preparation of pure culture & spawn cultivation methods, harvest.

Unit IV

Cultivation of button mushroom -morphology raising a pure culture & spawn preparation. Preparation of compost & cultivation of *Agaricus bisporus*, *Pleurotus flabellatus*, harvest.

Unit V

Post-harvest management – Harvest - preservation of mushrooms, storage, methods quality assurance of mushroom.

References

1. Marimuthu, T. *et al.* (1991). Oster Mushroom. Department of Plant Pathology. Tamil Nadu Agricultural University, Coimbatore.
2. Nita Bhal. (2000). Handbook on Mushrooms. 2nd ed. Vol. I and II. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi

Paper 3: DISEASES AND PROBLEMS OF MUSHROOM CULTIVATION

Unit I

Factors influence contamination, diseases in mushrooms in mushroom cultivation- Environmental, fungal, bacterial, viral, insect pests, Nematode diseases, and competitor moulds.

Unit II

Diseases of mushrooms-Bacterial, Brown blotch disease, yellowing of oyster mushrooms, Bacterial soft rot- fungal-fungal brown blotch, Wet bubble, Dry bubble, Cobweb, Green blotch

Unit III

Pests and Nematodes disease of edible mushrooms- *Aphelenchoides composticola*, *Ditylenchus myceliophagus*, *Rhabditis* *Dactylium* diseases, Phorid fly, Sciarid fly, *Mycophila*.

Unit IV

Principles of Insect pest Control: Definition and types of insect pests. Principles and methods of pest management-chemical control. Integrated pest management.

Unit V

Insect pests attacking mushroom and mushroom bed – Environmental changes affecting mushroom production

References

1. Tewari Pankaj Kapoor, S. C. (1988). Mushroom Cultivation. Mittal Publication, New Delhi.
2. Tripathi, D. P. (2005). Mushroom Cultivation. Oxford & IBH Publishing Co. Pvt.ltd., New Delhi.

Paper 4: ENTREPRENEURSHIP DEVELOPMENT IN MUSHROOM CULTIVATION

Unit I

Brief idea on nature of small business management and industrial technical skills-rules for setting up of business/ production unit-Maintenance of account and labour capital etc.

Unit II

Storage and shelf life of mushroom after harvest – Mushroom receipes – Mushroom in industrial perspectives

Unit III

Market survey-man management-Preparation of schemes and writing to financial institutions/bank for obtaining loans.

Unit IV

Common Indian mushrooms. Production level, economic return, Foreign exchange from Mushroom cultivating countries and international trade-knowledge of sales tax etc.

Unit V

Production of various mushroom based foods for marketing-pickles, jams, chips, etc.

References

1. Ignacimuthu, S. 1997. Applied plant biotechnology, Oxford & IBH Publishing co. Pvt. Ltd., New Delhi
2. Nita Bhal. (2000). Handbook on Mushrooms. 2nd ed. Vol. I and II. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

PRACTICAL – I: Development of Mushroom substrate and Spawn

1. Pure culture Techniques
2. Sterilization and sanitation of mushroom house, instruments etc.
3. Identification of edible and poisonous mushrooms.
4. Microscopical observation of Mushrooms.
5. Preparation of Mother culture
6. Spawn- media preparation, inoculation, and incubation.

References

1. Alice, D., Muthusamy and Yesuraja, M. (1999). Mushroom Culture. Agricultural College, Research Institute Publications, Madurai.
2. Marimuthu, T. *et al.* (1991). Oster Mushroom. Department of Plant Pathology. Tamil Nadu Agricultural University, Coimbatore.
3. Nita Bhal. (2000). Handbook on Mushrooms. 2nd ed. Vol. I and II. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

PRACTICAL – II: Cultivation of Mushroom

1. Construction of mushroom cultivation sheds.
2. Cultivation of mushroom : Tropical and temperate types using compost/ paddy straw/agricultural wastes etc.
3. Determination of nutritional value : proteins, sugars, lipids, vitamins and minerals
4. Identification of antimicrobial compounds and flavanoids etc.

References

1. Pathak, V. N. and Yadav, N. (1998). Mushroom Production and Processing Technology. Agrobios, Jodhpur.
2. Tewari Pankaj Kapoor, S. C. (1988). Mushroom Cultivation. Mittal Publication, New Delhi.
3. Tripathi, D. P. (2005). Mushroom Cultivation. Oxford & IBH Publishing Co. Pvt.ltd., New Delhi.