

Course Code	Course Name	L	T	P	C
VAP	Mushroom Cultivation and Vermicomposting				1

a. Preamble

This course enables the students to

- Understand the basic concepts, principles, potentials and limitations of mushroom cultivation and vermiculture techniques.
- Apply the active compounds of mushroom for developing a solution for health care problems.
- Develop mushroom cultivation and vermiculture skills for entrepreneurial activity.
- Appreciate the skills / devices / practices associated with the compact procedures of biodegradation of unwanted solid residues

b. Course Outcomes

After successful completion of the course,

CO.No.	Course Outcome	Knowledge Level
CO1	The students will be able to apply the active compounds of mushroom in food and pharmaceutical industry.	K3 (Apply)
CO2	The students will be able to implement the cultivation techniques for mushroom production.	K3 (Apply)
CO3	The students will be able to apply post-harvest technology to preserve the quality of the product.	K3 (Apply)
CO4	The students will be able to evaluate the significance of earthworms in increasing the soil fertility.	K4 (Analyze)
CO5	The students will be able to execute the techniques of vermicomposting for large scale production and marketing.	K3 (Apply)

c. Course Syllabus

Total: 30 Hours

UNIT I INTRODUCTION TO MUSHROOM CULTIVATION 06

Introduction to mushroom cultivation- design and layout, spawn preparation, cultivation techniques; Present status of mushroom industry in India; Cultivable edible mushrooms; Food value of edible mushrooms.

UNIT II CULTIVATION OF MUSHROOM 12

Hands-on training – Sterilization of straw for bed preparation; Preparation of mushroom cultivation bed; Cultivation of oyster mushroom and white button mushroom; Maintenance of culture bed; Harvesting techniques.

UNIT III VERMICOMPOSTING TECHNOLOGY 04

Need for earthworm culture; Scope and importance of vermiculture; Small scale and commercial methods: process & advantages; Vermicomposting equipment - devices, design and maintenance of vermi bed.

UNIT IV PRODUCTION OF VERMICOMPOST 08

Hands-on training – Pretreatment of waste for vermicompost bed; Preparation of vermicompost setup; Different methods of Vermicompositing (Heap method, Pot method, and Tray method); Collection and preservation of vermicompost and vermiwash; Application of vermicompost and vermiwash for plant growth study.

TEXT BOOKS:

1. Robin Gogoi Yella Rathaiah T R Borah, Mushroom Cultivation Technology, Scientific Publishers, 2006.
2. S.C. Tiwari & Pankaj Kapoor, Mushroom Cultivation, 2018.
3. Clemens NPCB Board of Consultants & Engineers, The Complete Technology Book on Vermiculture and Vermicomposting, 2004
4. Keshav Singh, Textbook of Vermicompost: Vermiwash and Biopesticides, 2014

REFERENCES:

1. Sultan Ahmed Ismail, 2005. The Earthworm Book, Second Revised Edition. Other India Press, Goa, India.
2. Vermiculture Technology; Earthworms, Organic Wastes and Environmental Management, 2011, Edited by Clive A Edwards, Norman Q Arancon & Rhonda Sherman, CRC Press
3. www.organicgrowingwithworms.com.au
4. New York Times, Scientists Hope to Cultivate and Immune System for Crops