

DEPARTMENT OF ZOOLOGY

COURSE CURRICULUM AND MARKING SCHEME

VALUE ADDED COURSE ON VERMICOMPOSTING

SESSION: 2022-23



GOVT. V.Y.T. PG AUTONOMOUS COLLEGE, DURG, 491001 (C.G.)

(Former Name – Govt. Arts & Science College, Durg)

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VALUE ADDED COURSE

on

“VERMICOMPOSTING”

By

Dept. of Zoology

Govt. VYT PG Autonomous College, Durg

1. INTRODUCTION:

Vermicomposting truly is nature's great disappearing act! Aristotle once said, "Worms are the Intestines of the Earth". Using worms to convert decomposing food waste into nutrient-rich fertilizer is simple, inexpensive, energy efficient, and a great way to teach students to become life-long recyclers. As a process for handling organic residuals, it represents an alternative approach in waste management, in as much as the material is neither land filled nor burned but is considered a resource that may be recycled. Vermicomposting in developing countries could prove to be useful in many instances. Where accumulation of food wastes, paper, cardboard, agriculture waste, manures and biosolids is problematic, composting and vermicomposting offer potential to turn waste material into a valuable soil amendment. Vermiculture enables any scale or size of operation. Vermicompost is being used in over 1,00,000 hectare cultivated area in almost all agro-climatic zones in India.

Maintaining the routine time table a value Added Online course is designed for UG and PG students of Life Science faculty of the college to get acquainted and develop skill under a framed setup along with their regular studies.

After successful completion of these courses the student would be able:

- ❖ To cultivate skills to understand vermiculture
- ❖ To learn the techniques of composting in a limited space
- ❖ To develop technical skills on harvesting and management of vermicopost
- ❖ To understand the scope of vermicomposting as entrepreneurship

The key features are:

- Short-term skill based training programmes
- Identification of “minimum skills set” sufficient to get employment
- Flexible training delivery mechanism
- Opportunity for lifelong learning

Statement of learning outcomes:

1. Working Process: Person may establish a small scale industry or a domestic business/generate employment for others.
2. Professional knowledge: Basic facts, process and principle applied
3. Professional skill: Recall and demonstrate practical skill, routine and repetitive work in narrow range of application
4. Core skill: Communication with oral and written modes with minimum required clarity

2. GENERAL INFORMATION AND COURSE STRUCTURE

1. Duration of Modular Training: 30 hrs.
3. Entry Qualification:UG and PG students of life sciences
4. Trainees per unit: 20
5. Language: Hindi/English
6. Teaching Mode: Online through LMS, Video and PDF notes etc.

Distribution of training on Hourly basis:

Sl. No.	Broad Theory and Practical components to be covered	Duration (in Hrs)	Theory	Practical	Days
1.	Waste materials: Classification, disposal techniques, their segregation & processing	2	1	1	1
2.	Bed preparation for Anaerobic & Aerobic composting and mixing of beds	4	2	2	2
3.	Earthworm collection, identification & application on beds	10	5	5	5
4.	Inspection of beds & watering	4	2	2	2
5.	Vermicompost collection, Earthworms separation, Air drying of vermicompost, sieving & storing	8	4	4	4
6.	Vermi-wash production technique, collection & processing	4	2	2	2
	Total	30	15	15	15

3. GENERAL TEACHING PLAN, ASSESSMENT & CERTIFICATE:**General Teaching Plan:**

The knowledge and skill components as stated in the section for „learning outcomes“ are to be imparted in accordance with the instructions in respect of the content and time structure. Both the theory and practical will be conducted online using synchronous and asynchronous modes based on suitable LMS

Assessment:

The competency assessment will be done by the departmental assessor ensuring an impartial assessment. The assessment process through Assessing Bodies aims to test and certify the competency of the student.

Candidates are to demonstrate that they are able to do the followings under assessment:

1. Plan and organize work processes, identify necessary materials and tools
2. Perform task with due consideration to safety rules, accident prevention regulations and environmental protection stipulations
3. Apply professional knowledge and Computer literacy while performing the task.

Examination:

Both the theory and practical examination will be conducted online using synchronous and asynchronous modes based on suitable LMS

Pass regulation:

Minimum passing marks for Practical is 60%

Minimum pass marks for Theory is 40%

Certificate:

Successful candidate will be awarded training certificates issued by the College

4. SYLLABUS CONTENT Detailed Syllabus:

Theory	Practical
Introduction to vermiculture. definition, meaning, history, economic important, their value in maintenance of soil structure. Role of earthworms in bio transformation of the residues generated by human activity and production of organic fertilizers.	Waste materials: Classification, disposal techniques, their segregation & processing
Biology of Eisenia fetida. a) Taxonomy Anatomy, physiology and reproduction of Lumbricidae. b) Vital cycle of Eisenia fetida: alimentation, fecundity, annual reproducer potential and limit factors (gases, diet, humidity, temperature, PH, light, and climatic factors).	Key to identify different types of earthworms. Collection of native earthworms & their identification Study of Life stages & development of Eisenia fetida.
Vermiculture and harvest	Study of Vermiculture, Vermiwash & Vermicompost equipments, devices.
Vermicomposting, harvest and processing.	Bed preparation for Anaerobic & Aerobic

Nutritional Composition of Vermicompost for plants, comparison with other Fertilizers.	composting and mixing of beds. Maintenance of vermicompost & climatic conditions. Harvesting, drying, packaging, transport and storage of Vermicompost.
Vermiwash collection, composition & use. Enemies of Earthworms.	Vermiwash collection and processing technique. Separation of life stages. Study of verms diseases & enemies.

5. ASSESSMENT STANDARD

5.1 GUIDELINES FOR INSTRUCTORS AND ASSESSORS

Due care to be taken for proper & inclusive delivery among the batch. Some of the following method of delivery may be adopted:

- A) LECTURE
- B) PDF/ VIDEO LESSON
- C) DEMONSTRATION VIDEO
- D) GROUP DISCUSSION

5.2 ASSESSMENT GUIDELINE:

The nature of special needs should be taken into account while undertaking the assessment. Due consideration shall be given while assessing for teamwork, behavioural attitude, sensitive to environment and regularity in training. The sensitivity towards self-learning attitude shall be considered while assessing competency.

1. Assessment will be evidence based comprising the following:
2. Answer sheet for assessment
3. Viva-voce
4. Attendance and punctuality
5. Project work

Evidence of internal assessment should be preserved for an appropriate period of time for audit and verification by examination body.



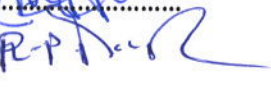



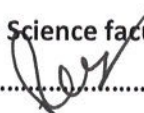
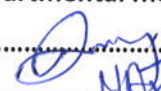


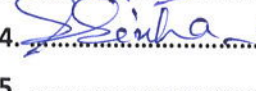
Examination/ Evaluation will be done by online mode. The following marking pattern to be adopted while assessing:

S.No.	Parameters	Assessable outcomes	Marks
1.	Skill	Remember, Recognize and Comply safe working practices	20
2.	Understanding and	Understand the working procedure and basic skills for repetitive work	20

	Expressions		
3.	Neatness and Promptness of work	Apply, demonstrate knowledge of concept and principles of basic arithmetic calculation and apply knowledge of specific area to perform practical operations.	30
4.	Support required for Project work	Analyse, Explain and Evaluate time management, entrepreneurship and manage/organize related task in day to day work for personal & societal growth	30
Total			100

The syllabus for Value added course on Vermicomposting s hereby approved for the Session 2022-23

Name and Signatures

<p>Chairperson /H.O.D </p> <p>University Nominee </p> <p>Subject Expert </p> <p>Subject Expert </p> <p>Representative from Industry/entrepreneur </p> <p>Student representative </p> <p>Other Prof. from Science faculty </p>	<p>Departmental members</p> <p>1. </p> <p>2. </p> <p>3. </p> <p>4. </p> <p>5.</p> <p>6.</p> <p>7.</p> <p>8.</p>
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