

Course Code	Course Name	Credits
26ZY903	EARTHWORMS IN ORGANIC FARMING	04

Course Objectives

- To understand the role of earthworms in organic farming.
- To study the biology and ecology of earthworms.
- To develop knowledge on vermicomposting techniques.
- To understand soil fertility and nutrient cycling.
- To enhance sustainable agricultural practices.

Learning Outcomes

- Explain the importance of earthworms in agriculture.
- Identify major species used in vermiculture.
- Demonstrate vermicomposting techniques.
- Analyze the role of earthworms in soil improvement.
- Apply organic farming methods using vermiculture.

Unit 1 - Introduction to Earthworms (12 Hrs.)

Classification, morphology and ecology of earthworms; economically important species; epigeic, endogeic and anecic forms; adaptive features and ecological significance.

Unit 2 - Earthworms and Soil Fertility (12 Hrs.)

Role in nutrient cycling; soil aeration and fertility; decomposition of organic matter; humus formation; soil microbial interactions and improvement of soil texture.

Unit 3 - Vermicomposting Techniques (12 Hrs.)

Preparation of vermicbeds and vermipits; selection of raw materials; vermicompost production methods; maintenance of vermiculture units; harvesting, storage and nutrient composition of vermicompost.

Unit 4 - Applications in Organic Farming (12 Hrs.)

Use of vermicompost and vermivash in agriculture and horticulture; organic farming practices; recycling of agricultural and domestic wastes; sustainable farming and environmental protection.

Unit 5 - Commercial Vermiculture (12 Hrs.)

Commercial production of vermicompost; packaging, storage and marketing; economics of vermiculture; small-scale and large-scale units; future prospects and entrepreneurship opportunities.

Reference Books:

1. Edwards, C.A. (2016). Biology of Earthworms. Chapman and Hall.
2. Kale, R.D. (2017). Vermicomposting. Orient Longman.
3. Ismail, S.A. (2018). The Earthworm Book. Other India Press.
4. Dash, M.C. (2019). Ecology and Environmental Biology. Tata McGraw Hill.
5. Satchell, J.E. (2017). Earthworm Ecology. Springer.

Websites and eLearning Sources:

1. <https://www.biologydiscussion.com/>
2. <https://www.agrifarming.in/>
3. <https://www.easybiologyclass.com/>

