



**Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore**  
**Shri Vaishnav Institute of Agriculture**  
**Vocational Agriculture Course**

Course Code	Course Name	TEACHING & EVALUATION SCHEME								
		Theory			Practical			Credits		
		END SEM University Exam	Mid term exam	Teachers Assessment	END SEM University Exam	Teachers Assessment	L	P	Total	
<b>VOAG202</b>	<b>Vermicompost Technology</b>	<b>00</b>	<b>00</b>	<b>00</b>	<b>60</b>	<b>40</b>	<b>0</b>	<b>4</b>	<b>4</b>	

**Aims & Objective:**

Students will be able to compost in a limited space and describe the decomposing process.  
 The interested students will get the knowledge of composting,  
 Students will get the employment,  
 They can generate employments,  
 They will also turn towards organic farming,  
 Will help to maintain the environment pollution free and  
 Will get the knowledge of biodiversity of local earthworms.  
 The detail of the course is as follows<sup>9</sup>

**Focus:**

To convert unwanted, organic matter, particularly food scraps and paper into fertile soil.

**Unit-I: General Vermiculture/ Vermicompost**

Introduction to vermiculture. definition, meaning, history, economic important, their value in maintenance of soil structure, role as four r's of recycling reduce, reuse, recycle, restore. His role in bio transformation of the residues generated by human activity and production of organic fertilizers. How does nature work. The matter and humus cycle (product, qualities). Ground population, transformation process in organic matter. Choosing the right worm. Useful species of earthworms. Local species of earthworms. Exotic species of earthworms. Complementary activities of autoevaluation.

**Unit-II: Earthworm Biology and Rearing**

Key to identify the species of earthworms. Biology of Eisenia fetida. Taxonomy Anatomy, physiology and reproduction of Lumbricidae. Vital cycle of Eisenia fetida: alimentation, fecundity, annual reproducer potential and limit factors (gases, diet, humidity, temperature, PH, light, and climatic factors). Complementary activities of auto evaluation. Biology of Eudrilus eugeniae. Taxonomy Anatomy, physiology and reproduction of Eudrilidae. Vital cycle of Eudrilus eugeniae: alimentation, fecundity, annual reproducer potential and limit factors (gases, diet, humidity, temperature, PH, light, and climatic factors). Complementary activities of auto evaluation.

**Unit-III: Vermicompost Technology (Methods and Products)**

Small Scale Earthworm farming for home gardens  
 Earthworm compost for home gardens  
 Conventional commercial composting  
 Earthworm Composting larger scale  
 Earthworm Farming (Vermiculture), Extraction (harvest), vermicomposting harvest and processing. Nutritional Composition of Vermicompost for plants, comparison with other



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fertilizers, Vermiwash collection, composition & use, Enemies of Earthworms, Sickness and worm's enemies. Frequent problems. How to prevent and fix them.

**Unit-IV: Applied vermiculture.**

The working group experience with *E. fetida* populations compartment with farm industrial residues (frigorific, cow places, feed-lot, aviaries exploitations, and solid urban residues). Lineaments to vermicomposting elaboration projects.

**Unit-V: vermiculture harvesting and economics.**

Harvesting of vermiculture. Toxins released by the worms (harmful effects) Complementary activities of auto evaluation. Packaging, storing and marketing of vermiculture, vermiwash and earthworms. Evaluate cost of production and profit of vermiculture unit.

**Practical's:**

Key to identify different types of earthworms

Field trip- Collection of native earthworms & their identification

Study of Systematic position, habits, habitat & External characters of *Eisenia fetida*

Study of Life stages & development of *Eisenia fetida*

Study of Life stages & development of *Eudrilus eugeniae*

Comparison of morphology & life stages of *Eisenia fetida* & *Eudrilus eugeniae*

Study of Vermiculture, Vermiwash & Vermicompost equipments, devices, Preparation vermibeds, maintenance of vermicompost & climatic conditions.

Harvesting, packaging, transport and storage of Vermicompost and separation of life stages

Study of verms diseases & enemies

Study the effects of vermicompost & vermiwash on any two short duration crop plants

Study the effects of sewage water on development of worms

**Reference books:**

Bhatt J.V. & S.R. Khambata (1959) "Role of Earthworms in Agriculture" Indian Council of Agricultural Research, New Delhi

Dash, M.C., B.K.Senapati, P.C. Mishra (1980) " Vermes and Vermicomposting" Proceedings of the National Seminar on Organic Waste Utilization and Vermicomposting Dec. 5-8, 1984, (Part B), School of Life Sciences, Sambalpur University, Jyoti Vihar, Orissa.

Edwards, C.A. and J.R. Lofty (1977) "Biology of Earthworms" Chapman and Hall Ltd., London.

Lee, K.E. (1985) "Earthworms: Their ecology and Relationship with Soils and Land Use" Academic Press, Sydney.

Kevin, A and K.E.Lee (1989) " Earthworm for Gardeners and Fisherman" (CSIRO, Australia, Division of Soils)

Rahudakar V.B. (2004). Gandul khatashivay Naisargeek Paryay, Atul Book Agency, Pune.

Satchel, J.E. (1983) "Earthworm Ecology" Chapman Hall, London.

Wallwork, J.A. (1983) "Earthworm Biology" Edward Arnold (Publishers) Ltd. London.

(Prof. Vinod Dhar)

Coordinator

Shri Vaishnav Institute of Agriculture,