

FUNDAMENTALS OF VERMICULTURE

Paper Code : VMC 01

Max Marks: 35

Min. Marks: 12

Learning outcomes:

After completion of this course students will be able to-

1. The student will be able to know the biology of the earth worm and will be able to identify various species.
2. He will be having a knowledge of various types of vermi beds available in India
3. The candidate will be able to produce vermicompost at its own and may earn his livelihood
4. He will be able to do the marketing of the vermicompost and worms
5. By using the vermicompost he will be able to do organic farming.

UNIT - I

Earthworms – Taxonomic position and diversity; types – morphological and ecological grouping – Epigeic species, Endogeic species and Anecic; Ecological roles and economic importance of earthworms – need for earthworm culture.

UNIT - II

Vermiculture – definition, scope and importance; common species for culture; Environmental requirements; culture methods – worm – breeding techniques; indoor and out door cultures - monoculture and polyculture – relative merits and demerits; Windows Method-Process – advantages.

UNIT- III

Applications of vermiculture – Vermiculture Bio-technology, vermi-composting, use of vermicastings in organic farming/horticulture, earthworms for management of

municipal/selected biomedical solid wastes; as feed/bait for capture/culture fisheries; forest regeneration.

UNIT- IV

Marketing the products of vermiculture – quality control, market research, marketing techniques – creating the demand by awareness and demonstration, advertisements, packaging and transport, direct marketing.

UNIT -V

Future perspectives – Predator / pathogen control in wormeries; Potentials and constraints for vermiculture in India.

PRACTICAL/INTERNAL ASSESSMENT

Max. Marks: 15

Study of Systematic position, habit, habitat and external features of *Eisenia fetida* & Study of Life Cycle. Preparation of Vermiculture, Maintenance & study of climatic condition. Harvesting and packing, transport & storage of vermin-compost and separation of life stages.

Credit: 2

Examination: 2 hrs

Practical Examination: 2 hrs

Duration of the course 3 months

Credit : 12

Reference: -

1. G. Tripathi, 2003, Vermiresource Technology, Discovery Publishing House New Delhi
2. Sultan Ahmed Ismail, 2005. The Earthworm Book, Second Revised Edition. Other India Press, Goa, India.
3. Bhatnagar & Patla, 2007 Earthworm vermiculture and vermin-composting
4. Appelhof, M. (1980). Celloquinum of Soil Zoology, EPA, USA: 157-160
5. Darwin, C. (1881). The formation of vegetable mould through the action of worms, with observation of their habits (Murray, London): 326
6. Gaddie, R.E. (1980). News week. 67-68
7. Hapse, P.G. Murkute, S.B. and Zende, N.A. (1993). Effect of vermicompost on sugarcane yield and sugar recovery. 10th annual state level sugarcane development workshop on low cost technology for cane and sugar production organized by V.S.F. Manjari (BK) on 9-10 July, 1993
8. Jadhav, A.D. (1996). Effect of FYM and vermicompost on the yield of rice (*Oryza sativa* Linn.) and physico-

- chemical properties of lateritic soil of Konkan. M.Sc. (Agri.) Thesis, K.V.K. Dapoli
9. Jadhav V.S. (1995). Studies on the physico-chemical changes during humification of organic residues as influenced by earthworms. M.Sc. (Agri.) Thesis submitted to Konkon Krishi Vidyapeeth, Dapoli
 10. Kadam, R.G. (2000) Effect of vermicompost with and without inorganic fertilizers on yield, quality and mineral nutrition of cowpea-cowpea cropping sequence. M.Sc. (Agri.) Thesis submitted to Dr. Balasaheb Swant Konkon Krishi Vidyapeeth, Dapoli
 11. Mba. C.C. (1978) *Z. Pflanzenernache Bodenk.* 141: 453-478
 12. Vasanthi, D. and Kumaraswamy, K. (1999). Efficacy of vermicompost to improve soil fertility and rice yield. *J. Indian Soc. Soil Sci.* 47(2): 268-272