

FACULTY OF SCIENCE
DEPARTMENT OF ZOOLOGY
SZOOVAC02 - VERMITECHNOLOGY

LEARNING OBJECTIVES (LO)

1. Students can construct their own compost farm
2. Students residing in cities can produce vermicompost in small scale for garden/household plants.
3. Students will learn the skill of vermicomposting and get jobs in educational institutes as vermicompost/vermiculture technician.
4. The candidate can learn to generate income by supplying verms, vermiwash, & vermi compost.

COURSE OUTCOMES (CO)

1. Students/ farmers by using vermicompost in their field can increase the crop yield.
2. By developing and propagating vermicompost technology students will directly or indirectly help to prevent environmental pollution, by using vermicompost in the field and thereby increasing crop yield he will help to solve food problems.
3. It will lead towards organic farming and healthy food.
4. In today's world, recycling of garbage has become necessary in order to sustain our health and environment which can be achieved through vermicomposting.

Unit I: Biology and types of earthworms

Earthworm Species -Endemic and Exotic. Classification of Earthworms-epigeic, anecic and endogeic. Biology of earthworms-*Lampitoma* and *Eudrilus eugenia*.

Unit II: Vermicomposting materials and methods

Vermicomposting materials, Vermicomposting methods-pit method, roof shed method, tank method, ground heaps, field pits. Small scale and large scale Factors affecting vermicomposting - pH, moisture, temperature. Physical, chemical and biological changes caused by earthworms.

Unit III: Vermiculture

Definition and concept of vermiculture. Monoculture and Polyculture, vermiculture unit-materials required and maintenance. Problems in vermiculture and remedial solutions.

Unit IV: Vermicompost

Harvesting of vermicompost - quality, properties and advantages over chemical fertilizers. Packaging and marketing-cost benefit analysis. Vermiwash and its applications.

Unit V: Economic importance of Earthworms

In sustainable agriculture, soil fertility and texture, soil aeration, water impercolation, decomposition and moisture, bait and food. Uses of earthworms in food and medicine.

Text Books

1. Sultan Ahmad Ismail, 2005. The earthworm book, Second revised edition. Other India Press, Goa, India.
2. Bhatnagar and Patla, 2007. Earthworm vermiculture and vermicomposting, Kalyani Publishers New Delhi.

Reference Books:

1. Edwards, C.A and P.J Bohlen, 1996. Biology and Ecology of Earthworms IIIEdn. Chapman and Hall N.Y.U.S.A.
2. Edwards, C.A & J.R Lofty Vermitechnology-The Biology of earthworm, 1997.
3. Chapman & Hall Publications N.Y.U.S.A.
4. Mary violet Christy, 2008. Vermitechnology, MJP Publishers, Chennai.
5. Aravind Kumar, 2005. Verms&Vermitechnology, A.P.H. Publishing Corporation New Delhi.
6. Ranganathan, L.S. 2006. Vermitechnology-From Soil Health to Human Health. Agrobios. India.
7. Parthasarathi, K. 2010. Earthworms life cycle, Compost and Therapy. Lap Lambert Academic Publishing AG and Co, Germany.