

DEPARTMENT OF BOTANY
DEVASWOM BOARD COLLEGE, THALAYOLAPARAMBU
SYLLABUS FOR VALUE ADDED COURSE IN BOTANY

Course Code: BOVA 01

Title of Course: Composting Techniques

Semester I

Contact Hours: 30

Aim: - To develop an understanding on Composting techniques with special reference to Vermicomposting.

Objectives

- Develop an appreciation for various methods employed in waste management.
- Foster an appreciation for the intricate processes involved in recycling and reusing materials.
- Encourage students to conceptualize the principles behind eco-friendly and organic composting practices.

Topics	Hours
Module 1 Types of wastes and Classification	
1.1 Introduction, Classification of wastes- based on Source and Physical state	3
1.2 Biodegradable and non-biodegradable wastes	
Module 2 Methods of waste collection and disposal	
2.1. Traditional methods -Solid Waste Open Burning, sea dumping process, sanitary landfills, incineration method, disposal by ploughing into the fields,	6
2.2 Composting Techniques	
2.2. Organic composting	5
Module 3 Vermiculture	
3.1 Species of Earth worms	
3.2 Ecological classification of Earth worms	
3.3 Life Cycle and Reproduction of Earthworms	
3.4 Physical and Chemical effects of earthworms on soil	
3.5. Vermicomposting- site selection, preparation of pits, maintenance, monitoring	6
3.6 Harvesting of vermi-compost and vermiwash	
Practicals	10
Familiarising the procedure of Vermicomposting - Bed method and Pit method	
Production of vermi-compost using pilot units/pits	

References

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- Dash MC. 1978. Role of earthworms in the decomposer system. In: Singh JS, Gopal B, editors. *Glimpses of ecology*. New Delhi: India International Scientific Publication.
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- Manickam, T.S. 1967. *Chemistry of fertilizers and manures*. Coimbatore, India, Division of Soil Science and Agricultural Chemistry, Agricultural Research Institute.
- Ndegwa, P.M. & Thompson, S.A. 2001. Integrating composting and vermicomposting in the treatment and bioconversion of biosolids. *Biores. Tech.*,
- Sinha RK, Herat S, Valani D, Chauhan K. 2009. *Vermiculture and Sustainable Agriculture*. *American-Eurasian Journal of Agricultural & Environmental Sciences*.
- Sinha K, Valani D, Soni B, Chandran V. 2011. *Earthworm Vermicompost: A Sustainable Alternative to Chemical Fertilizers for Organic Farming*. *Agriculture Issues and Policies*. New York: Nova Science Publishers Inc.