

Rayat Shikshan Sanstha's
Balwant College, Vita.
Department of Zoology
Certificate Course: - Vermitechnology
SYLLABUS
Section I- Theory (Total: 16 Periods)

CERTIFICATE COURSE: B.Sc. I, II and III (2022-23)

Sr. No.	<u>Unit</u>	<u>Topic</u>	<u>L/Unit</u>
<u>1</u>	<u>I</u>	1.1 Vermicomposting: Introduction and Scope, History, their value in maintenance of soil structure, role as four r's of recycling: reduce, reuse, recycle, restore. 1.2 Types of Earthworm and Classification Epigeic, Endogeic, Diageic species. Useful species of earthworms. 1.3 Life history of Earthworms (Earthworm Species: <i>Eisenia foetida/Eudrillus euginae</i>). 1.4 Objectives of Vermicompost.	<u>5L</u>
<u>2</u>	<u>II</u>	2.1 Methods of Vermicomposting: Small and large scale Bed method, Pit method. 2.2 Vermicompost Production: Establishment of Vermicomposting and Vermiwash unit. 2.3 Pests and diseases of Earthworms.	<u>4L</u>
<u>3</u>	<u>III</u>	3.1 Management of vermicompost bed. 3.2 Harvesting the Compost & Vermiwash. 3.3 Storage and packaging of vermicompost. 3.4 Physico- chemical analysis of vermicompost.	<u>4L</u>
<u>4</u>	<u>IV</u>	4.1 Components of vermicompost and their role in agriculture. 4.2 Importance and use of vermicompost. 4.3 Importance & use of vermiwash. 4.4 Marketing & awareness for farmers by organizing farmers meet.	<u>3L</u>

Section-II Practical (Total: 20 periods)

1. Classification of Earthworm.
2. Study of external morphology of Earthworm- *Eisenia foetida*
3. Study of habit and habitat of Earthworm- *Eisenia foetida*
4. Study of Digestive system of earthworm.
5. Study of Reproductive system of earthworm.
6. Study of cocoon and juvenile stages of earthworm.
7. Study of Pests and diseases of Earthworm.
8. Establishment of vermicomposting unit: Pit method
9. Establishment of vermicomposting unit: Bed method
10. Establishment of vermiwash unit.
11. Vermicompost production, harvesting and packaging.
12. Study the effects of vermicompost & vermiwash on crops.

Reference Books:

1. Pragatshil sheticha Rajmarg : Gandulsheti ,Dr.R.S.Dubal
2. Bhatt J.V. & S.R. Khambata (1959) "Role of Earthworms in Agriculture" Indian Council of Agricultural Research, New Delhi
3. Dash, M.C., B.K.Senapati, P.C. Mishra (1980) " Verms 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.
4. Edwards, C.A. and J.R. Lofty (1977) "Biology of Earthworms" Chapman and Hall Ltd., London. 4. Lee, K.E. (1985) "Earthworms: Their ecology and Relationship with Soils and Land Use" Academic Press, Sydney.
5. Satchel, J.E. (1983) "Earthworm Ecology" Chapman Hall, London. 8. Wallwork, J.A. (1983) "Earthworm Biology" Edward Arnold (Publishers) Ltd. London.