



RUSA 2.0
DEPARTMENT OF ZOOLOGY
MOHANLALSUKHADIA UNIVERSITY
MAHARANA BHUPAL CAMPUS, UDAIPUR – 313 001(INDIA)

NAAC Accredited 'A' Grade University

CERTIFICATE COURSE IN VERMICULTURE BIOTECHNOLOGY FOR
EMPLOYMENT GENERATION

QUALIFICATION: Minimum 10th in any discipline
(No of Seats-15)

5 seats are reserved for Adopted village (Karakala)

Preference will be given to women and tribal candidates

Start Date: 08-09-2021 to Online Submission Last Date: 20-09-2021

Admission process will be followed as per MLSU norms (RUSA 2.0)

Course fee including Admission fee – 1000/- only

PART I: BIOLOGY OF EARTHWORMS

UNIT I - Morphology & Anatomy

Earthworms Taxonomic position, external features- shape, size, colour, segmentation, setae & Clitellum. Bodywall, Coelom, Locomotion, Digestive, Excretory & Nervous System.

UNIT II – Biology

Reproductive system-Male & Female, copulation, Cocoon formation & Fertilization, development of Earth Worm.

UNIT III - Habitat Ecology:

Burrowers, Casts, Nocturnal, Poikilothermal, Ecological grouping – Epigeic species, Endogeic species and Anecics.

UNIT IV - Diversity of species:

Detailed Study of *Lumbricus Terrestris*, *Eisenia eugenia*, *Eudrilus eugenia*, *Amyntas gracilus*, *Perionyx excavates*.

UNIT V - Economic importance of Earthworms:

In Sustainable Agriculture, Organic Farming, Earthworm activities, Soil fertility & Texture, Soil Aeration, Water Impersonation, Decomposition & Moisture, Bait & Food.

PART II: VERMITECHNOLOGY AND SOLID WASTE MANAGEMENT

UNIT – I

Vermitechnology- Definition, History, Growth and development in other countries & India, Significance.

UNIT – II

Vermiculture – Definition, scope and importance; Common species for Culture; Environmental parameters; Culture methods – Wormery – Breeding techniques; Indoor and Out door cultures - Monoculture and Polyculture – merits and demerits.

UNIT – III

Vermicomposting of wastes in field pits, ground heaps, tank method, roof shed method, static pile windrows, top fed windrows, wedges & bin method, harvesting the compost, storage, Vermiwash- Preparation and application.

UNIT – IV

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 – V

Future perspectives – Predator / pathogen control in wormeries; Potentials and constraints for Vermiculture in India. Marketing the products of Vermiculture – quality control, market research, marketing techniques – creating the demand by awareness and demonstration, advertisements, packaging and transport, direct marketing. Visit to relevant Labs/Field Visits

PRACTICALS

Based on above topics:

1. Procurement of Worms (Exotic and Inegenous).
2. Procurement of cowdung and different waste collections.
3. Decomposition of waste materials.
4. Formation of composting pits.
5. Preparation of vermibeds.
6. Harvesting of worms and compost.
7. Chemical analysis of Compost and comparison of FYM and chemical fertilizers
8. **Small scale demonstration of compost and vermiwash on any two vegetables grown locally.**

9. Helping the trainee to get self employment by contacting various Govt and Non Govt agencies .