

# Certificate course in Vermitechnology - 1 year

## Vermitechnology - Theory

Hours of instruction : 3 Hours/week

### UNIT I. EARTHWORMS AND THEIR ENVIRONMENT

Introduction, Diversity, classification, distribution and biology, Trophic and ecological classification of earthworms - Detrivores, Geophages, epigeic, anisio, endogeic.

Life cycle, reproduction and regeneration of earthworms.

Potentials of earthworms and vermitechnology, Role in modern agriculture,

Earthworms in land - amelioration and reclamation.

20 hrs.

### UNIT II. EARTHWORMS AND SOIL ENRICHMENT

Soil an essential component of terrestrial ecosystem - C:N ratio, nutrients, pH, electrolyte concentration.

Role of earthworms on soil structure - carbon, nitrogen and phosphorous transformations.

Earthworms as bioindicators of soil types.

Role of earthworms in plant productivity.

20 hrs.

### UNIT III. CULTURE OF EARTHWORMS (VERMICULTURING)

Criteria for the selection of suitable earthworm species for vermicomposting.

Important local species of earthworms, *Eudrilus euginae*, *Perionyx excavatus*, *Eisenia foetida*, *Hoplochaetella suctorica*, *Pontoscolex corethyurus*

Food habits and food preference of earthworms.

Physical factors - Moisture, temperature, aeration, light, soil type etc.

Chemical factors affecting the earthworm culture

Biological factors - Types of organic wastes sources - city garbage, agriculture waste, Weeds, wastes of animal and animal based industries

20 hrs

### UNIT IV. VERMICOMPOSTING

Methods of vermicomposting

Small scale and large scale vermicomposting units. Pit method and heap method.

Selection of material, Preliminary steps, preparation of waste material.

Preprocessing, Mixing of required material and introduction of earthworms and

Daily maintenance.

Harvesting of vermicompost, Extraction of vermivash

Application of Vermicompost and Vermivash

25 hrs

## Vermitechnology Practicals - I year

Hours of instruction : 3 Hours/week

Study of morphological characters of earthworm

Study of digestive system of earthworm (demonstration only)

Identification of various species of earthworms

Study of earthworm life cycle

Study of regeneration capacity of earthworm

Primary decomposition techniques in earthworm culture.

Analysis of carbon, nitrogen, phosphorous, potassium and sodium in the compost

Preparations of vermicompost by using different decomposing substrate