**SEMESTER- 5**

 **(Silkworm Seed Technology)
 DSE-SR-16-501**

**(Credits: Theory-04, Practical-02)**

**THEORY**

**UNIT- I: PRINCIPLES OF SEED TECHNOLOGY**

1. Silkworm seed, production, demand trends and seed legislation Act.
2. Seed areas –identification of selected seed rearers/villages.
3. Seed organization : Maintenance of parental stock and multiplication
4. Disinfection and maintenance of hygiene in seed production.
5. Seed cocoon markets.

**UNIT-II: GRAINAGE EQUIPMENTS AND MANAGEMENT:**

1. Grainages: Plan of model grainages—infrastructure, cold storage, facility and equipment, maintenance of grainage conditions.
2. Grainage management: Staff component, labour maintenance of grainage good cocoons, laying ration.
3. Distribution of eggs: precautions and preventive measures
4. Protective measure and maintenance of records in grainage.

**UNIT-III: SEED PRODUCTION:**

1. Eclosion of moths: Synchronization of emergence of moth, collection and selection, coupling, decoupling and storage of male moth.
2. Egg laying: Ideal condition for egg laying, methods of egg laying, disinfection of eggs and packing of egg cards.
3. Sheet egg and loose egg preparation
4. Mother moth examination for disease infection: Types of examination, green moth and dry moth examination, individual and mass examination.

**UNIT-IV: HANDLING AND PRESERVATION OF EGGS**

1. Handling of bivoltine eggs: Physical and chemical methods for early hatching hot and cold acid treatments.
2. Advantages and disadvantages of hot and cold acid treatments.
3. Hibernation schedules
4. Handling of multivoltine eggs : Preservation, ideal embryonic stages for cold storage, duration of cold storing..

**PRACTICALS**

a) Plan of grainage building and grainage equipment—Visit to the commercial grainage, visit to the seed cocoon markets, commercial, multivoltine and bivoltine.

b) Processing of seed cocoons – deflossing—sorting—selection of good cocoons, assessment of seed cocoons—pupal examination.

c) Cutting of seed cocoons—Sex separation by pupal method—preservation of cocoon/pupa, maintenance of temperature, humidity and light factors.

d) Emergence of moths—Selection of moths—pairing and depairing. Oviposition, preservation of male moths.

e) Mother moth examination—Individual and mass, whole and sampling method

surface sterilization of silkworm eggs.

f) Sheet eggs and loose egg preparation—Preparation of starch coated paper, washing of loose eggs, Drying-Treatment of eggs with acid-Weighing and packing.

g) Acid treatment of bivoltine eggs. Hot and cold acid treatments.

h) Dissection of silkworm eggs of different stages—Staining method