SRI KRISHNADEVARAYA UNIVERSITY: ANANTAPUR
DEPARTMENT OF SERICULTURE

CURRICULUM FOR B.Sc Z.S.C (Zoology, Sericulture& Chemistry) COURSE (SEMESTER PATTERN)

(Effective from the Academic Year 2015-2016)

B.Sc ZSC IV Semester 60 Hours

Paper – 4 - ENDOCRINOLOGY, SILKWORM EGG PRODUCTION, SEED ORGANIZATION & PATHOLOGY

Unit 1: ENDOCRINOLOGY: 10 hrs

1. Introduction, Structure and functions of Endocrine Glands (Brain, Corpora allatum, Prothoracic gland, Corpora cardiaca & Sub oesophageal ganglion).

2. Brief account of juvenile hormones, Ecdysone and Diapause Hormones.

Unit 2: PROCESS OFSILKWORM EGG PRODUCTION: 14 hrs

Grainage introduction:

1. Grainage system in A.P., Model Grainage,
2. Grainage Equipment.
3. Grainage activities(Hybrid Disease free egg laying):
   a. Disinfection of grainage
   b. P1 Seed cocoon procurement and transportation of seed cocoons,
   c. Cocoon Sorting and Cocoon arrangements,
   d. Sex Separation, Moth Emergence & Synchronization of moth emergence,
   e. Pairing & De - pairing,
   f. Oviposition, Refrigeration of Male moths
   g. Pupal gut examination.
   h. Moth Examination: (Individual, Sampling and Mass Moth examination
   i. Artificial hatching, Hot and Cold Acid Treatment, Postponement of hatching by Chilling,
   j. Hibernation and Incubation of Eggs.

Unit 3: SEED ORGANIZATION: 10 hrs

1. Objectives of seed organization
2. Types of cocoon production areas
   a. Industrial cocoon production areas,
   b. seed cocoon production areas,
3. P4 Stations (Evolution of new silkworm breeds)
4. P3 Stations (Basic Seed Farms)
5. P2 Stations (Seed Multiplication Farms) and
6. P1 centers (Parent Seed Cocoon Production Centers)

Unit 4: SILKWORM PATHOLOGY: 14 hrs

1. Introduction of Parasitism, Commensalism, Symbiosis and Parasite relationship.
2. Mulberry Silkworm Diseases: Introduction, types, Pebrine, Grasserie, Muscardine, Flacherie, Symptoms and Pathogens, Mode of Infection, Prevention and Control.
3. Non – mulberry silkworm diseases: Pebrine, Bacterial and viral diseases.

Unit 5: SILKWORM PESTS AND PREDATORS: 12 hrs

1. Introduction, types of pests – Indian and Japan Uzi fly Life Cycle - Nature of Damage, Preventive and control measures.
2. Brief Account of Predators of Silkworms, Cockroaches, Ants, Beetles, Lizards, and Rodents - Nature of damage and control measures.

PRACTICALS 45 Hours

Seed Technology & Pathology

1. Model grainage equipment: Wooden Stand, Bamboo tray, Ant wells, Thermometer, Hygro meter, cellules, Moth crushing set, Microscope, Acid treatment equipment.

2. Sexing of pupae and moth, Moth emergence, Preparation of loose eggs, Preparation of disease free layings.

3. Moth examination for Pebrine, acid treatment (Hot acid and cold acid treatment).

4. Identification of different types of eggs: Hybernative and Non-hybernative eggs, fertilized and unfertilized and dead eggs. Counting of eggs and hatching percentage.

5. Identification of diseased silkworm larvae:
    1. Muscardine
    2. Grasserie
    3. Flacherie

6. Collection and identification of Pests of Mulberry silkworms: Uzi fly, its life cycle.

7. Morphology of predators of silkworm (Beetles, ants and Rats).