

SEMESTER- 2

Core course: Sericulture Paper-II

Silkworm Biology and Rearing Technology

(Credits: Theory-04, Practical-02)

Unit 1: SILKWORM TAXONOMY AND DISTRIBUTION

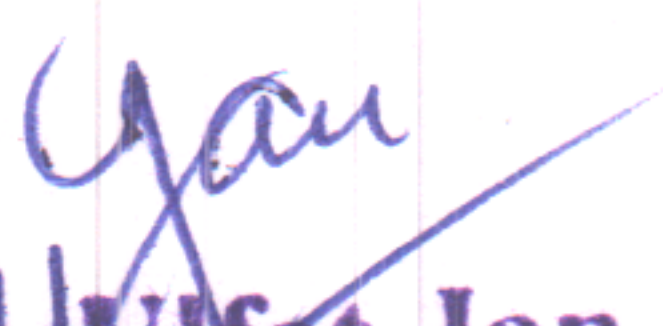
1. Systematic position of silkworm and salient features of the order Lepidoptera and family Bombycidae and Saturniidae
2. Life cycle of *Bombyx mori* – stages of development (egg, larva, pupa and adult).
3. Voltinism: Univoltine, bivoltine and multivoltine races.
4. Moulting: Characteristics features of different moulters.

Unit 2: SILKWORM BIOLOGY-I

1. Morphology of Egg, larva, pupa and adult
2. Digestive system: Alimentary canal and physiology of digestion.
3. Respiratory system and respiration.
4. Excretory system and excretion.
5. Circulatory system: Dorsal vessel, haemolymph and haemocytes

Unit 3: SILKWORM BIOLOGY-II

1. Reproductive system : Male and female systems and mechanism of egg development
2. Silk glands: Structure, development and mechanism of silk synthesis.
3. Moulting: Structures of integument and cuticle formation and shedding of the cuticle hormonal control. Characteristics of moulting larva.
4. Metamorphosis-definition, morphological changes role of the hormones in insect metamorphosis
5. Embryology-structure of the egg developments stages-stages, blastokinesis-eye spot and blue egg stage hatching.

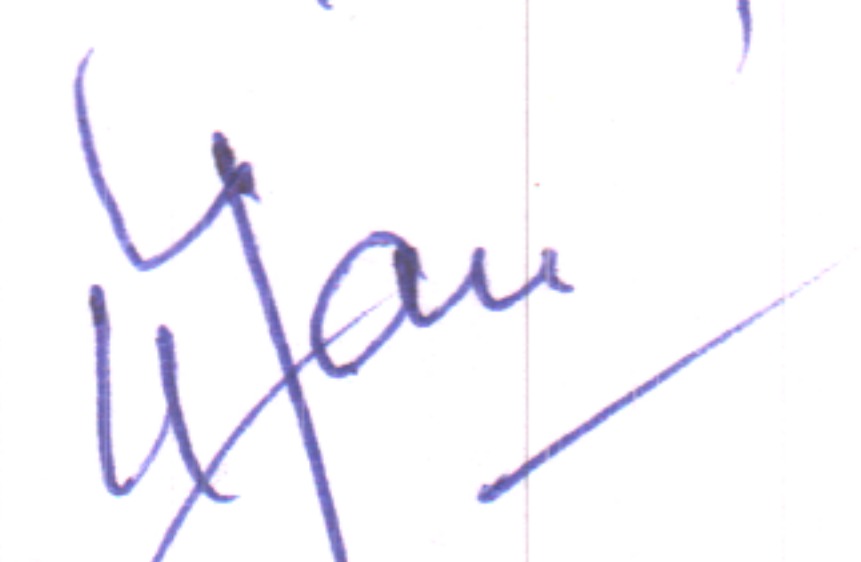

Dr. Ulfat Jan
Prof. & Head,
P.G. Dept. of Zoology
University Of Kashmir

UNIT 4: REARING TECHNOLOGY

1. Rearing house: types, rearing appliances and their uses.
2. Disinfection: Importance and types of disinfection; Incubation and black boxing
3. Brushing: Definition, methods-brushing from loose eggs and sheet eggs-advantage and disadvantage of different types of brushing
4. Chawki and late age rearing: methods, environmental conditions required, leaf requirement and selection. Bed cleaning –methods, spacing and feeding schedule
5. Mounting and Harvesting : Types of mountages, transfer of matured silkworms and spinning of cocoons, harvesting, preservation and assessment

PRACTICALS

- a) Morphology- Egg, last instar larva, pupa, adult
- b) Sexual dimorphism, morphology of mouthparts, antennae, legs, prolegs and wings.
- c) Anatomy-Dissection of alimentary canal, excretory system, respiratory system, silk gland of larva and reproductive system of adult.
- d) Study of rearing appliances
- e) Characteristics of moulting larva and moulted out larva.
- f) Silk products—Silk wastes and other byproducts.
- g) Conduct of silkworm rearing by students
- h) Visit to various sericulture centres of state and southern India.


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