

MN- 2A: Sericulture

Credits: Theory:03

Practical: 01

Total: 04

Theory (03 Credits): 45 hours

UNIT I: Introduction to Sericulture 5 hours

Sericulture: Definition, history and present status; Silk route; Types of silkworms, Distribution and races; Exotic and indigenous; Mulberry sericulture; Non-mulberry Sericulture, Eri, Muga, Tassar.

UNIT II: Biology of Silkworm 5 hours

Life cycle of *Bombyx mori*; Structure of silk gland and secretion of silk; Composition and properties of silk.

UNIT III: Rearing of Silkworms 15 hours

Selection of mulberry variety and establishment of mulberry garden, Rearing house and rearing appliances, Disinfectants: Formalin, bleaching powder, RKO Silkworm rearing technology: Early age and Late age rearing, Types of mountages, Harvesting and storage of cocoons, Postharvest technology- Silk reeling, Dyeing and weaving, Ahimsa silk

UNIT IV: Pests and Diseases 15 hours

Pests of silkworm: Uzi fly, dermestid beetles and vertebrates; Pathogenesis of silkworm diseases: Protozoan, viral, fungal and bacterial; Control and prevention of pests and diseases

UNIT V: Silk Industry and Its Importance 5 hours

Silk usage and application in Textile and non-textile industry, Sericulture industry in India

Recommended Readings:

- Manual on Sericulture (1976); Food and Agriculture Organisation, Rome.
- Ullal, S.R. and Narasimhanna M.N. (1987) Handbook of Practical Sericulture; 3rd Edition, CSB, Bangalore.
- Yonemura, M. and Rama Rao, N. (1951) A Handbook of Sericulture. I. Rearing of silk-worms. Government Branch Press, Mysore.
- Ananthanarayanan, S. K. (2008) Silkworm Rearing. Daya Publishing House
- Aruga, H. (1994). Principles of Sericulture. CRC Press.
- Sathe, T. V. and Jadhav, A. (2002) Sericulture and Pest Management. Daya Publishing House.
- Yup-Lian, L. (1991) Silkworm Diseases. Food and Agricultural Organization.

Practical (01 Credits):**30 hours**

1. Study of the life cycle of different species of silk moths - *Bombyx mori*, *Philosamia ricini*, *Antherea paphia*/*Antherea mylitta*, *Antherea assama* and silk secreted by them.
2. Study of the sexual dimorphism in caterpillar, pupae and adults of *Bombyx mori*.
3. Study of the structure of silk gland of silk worms.
4. Study of rearing house and different appliances used in rearing of silk worms.
5. Analysis of silk fibre quality- Visual examination, thickness, purity.
6. Study of silkworm diseases and their control- Pebrine, Flacherie, Grasserie, Muscardine.
7. Submission of a report on visit to a 'Sericulture Institute'/'Various Sericulture Centres in India'.
8. Group discussion or Seminar presentation from any topic from the paper

Pattern of Examination:**(25 Marks)**

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| 1. Life cycle of any silkworm | (4 Marks) |
| 2. Analysis of silk fibre quality | (3 Marks) |
| 3. Spotting | (8 Marks) |
| a. Sexual dimorphism | (2 Marks) |
| b. Silk gland | (2 Marks) |
| c. Appliance used in Silk rearing | (2 Marks) |
| d. Silkworm disease | (2 Marks) |
| 4. Visit Report | (4 Marks) |
| 5. Practical record | (3 Marks) |
| 6. Viva-voce | (3 Marks) |