

**PALAMURU UNIVERSITY - MAHABUBNAGAR**  
Under Graduate Courses (Under CBCS 2019–2022)  
**B.Sc. SERICULTURE II YEAR**  
**SEMESTER – III**

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**PAPER – III: SILKWORM SEED TECHNOLOGY**

**Theory:** 4 Hours/Week; Credits: 4 Marks: 100 (Internal: 20; External: 80)

**Practical:** 3 Hours/Week Credits: 1 Marks: 25

**Objectives**

1. To understand about the seed technology, silkworm seed organisation and its importance.
2. Gain knowledge about scientific procedure involved in egg production & hibernation.
3. Schedules and importance of mother moth examination and other related process in production of DFLs.

**UNIT – I**

Seed technology: introduction, concept and general account of silkworm seeds.  
Seed organization – concept and significance, maintenance of parent stock Basic multiplication centers (P<sub>4</sub>, P<sub>3</sub>, P<sub>2</sub> and P<sub>1</sub> centers), Seed areas - seed cocoon rearers – seed cocoon markets – transaction procedures – significance

Planning for pure and hybrid silkworm eggs production, purchase of bivoltine and multivoltine seed cocoons from markets deflossing, sorting & preservation, pupal examination & its function.

**UNIT – II**

Grainages: Location, ground plan, model grainage – grainage equipments and their usage, maintenance of environmental factors in grainage, disinfection and hygienic conditions in grainage: Grainage management:- staff and labour maintenance, care to be taken while carrying out grainage activities: Sex separation of pupa and moth, synchronization of moth emergence.

**UNIT – III**

Processing of eggs: Selection of moth, coupling, decoupling, oviposition, preservation of moths, preparation of starch coated paper – method of egg laying (egg sheet and loose eggs), weighing, disinfection of egg sheet/washing of eggs, weighing and packing of loose eggs,

Pupal and mother moth examination: types of examination – green and dry moth examination, individual, sample and mass examination, precautions.

**UNIT - IV**

Handling and preservation of eggs:-

Acid treatment – hot and cold acid treatment, advantages and disadvantages.

Preservation and handling of hibernated eggs for 3, 4, 6 and 10 months hibernation schedule, incubation of acid treated and hibernated eggs.

### REFERENCE BOOKS:-

1. Ganga G. (2003) Comprehensive sericulture, volume 2 Silkworm rearing and seed technology, Oxford & IBH Publishing Co. Pvt. Ltd.
2. Javant Jayaswal, Giridhar K, Somi Reddy J. Jagadish Prabhu, H(2008) Mulberry silkworm seed production, Central Silk Board, Bangalore.
3. Manjeet S. Jolly ed (1987) Appropriate sericulture techniques, International center for training & research in tropical sericulture, Mysore.
4. Reading in sericulture, KU publication, by Dr. Vijaya Babu, Dr. K. Sujatha, Dr. G. Shamitha.
5. Tribuwan Singh, Madan Mohan Bhat (2010) silkworm egg science:- principles and protocol. Daya Publishing house, Delhi.
6. Ullah, S.R and Narasimhanna, M.N (1987) Handbook of practical Sericulture (3<sup>rd</sup> Edition) Central silkworm Board, Bangalore.
7. Wang San – ming (1989) silkworm egg production, Vol-III FAO Agricultural services Bulletin 73/3 Translated by Li Ping Y, Pan Runshi and Ou Bing – Se

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**PAPER – III: SILKWORM SEED TECHNOLOGY PRACTICALS**

**Practical:            3 Hours/Week            Credits: 1            Marks: 25**

1. Model grainage plan
2. Identification of grainage equipments.
3. Assessment of cocoons of pure race and hybrids for cocoon weight, shell weight and racial characters.
4. Selection of seed cocoons, sorting & preservation.
5. Sex separation at cocoon, pupa and moth stages.
6. Moth emergence – pairing, de pairing and oviposition.
7. Preparation of egg cards/loose eggs & surface sterilization of eggs.
8. Moth & pupal examination. Individual moth examination, pupal gut examination, identification of pebrine spores
9. Identification of different types of eggs – fertilized, unfertilized, un hatched and dead eggs.
10. Morphology of silkworm egg.
11. Acid treatment: preparation of acids of required specific activity and treatment of eggs with acid.
12. Visit to seed cocoon markets, cocoon markets, grainage and cold storage centers.