

I. INTRODUCTION

Sericulture means cultivation of silkworms which finally produces SILK. The word silk sounds luxury and class. Till today, no other fabric can match it in lustre and elegance. As long as human desire for silk garments continues, the demand for sericulture activity remains. Silk is the queen of textile and the naturally produced animal fibre.

Sericulture is an ancient industry in India dating back to at least second century B.C. In its long history sericulture has passed through periods of great prosperity as well as decline.

Sericulture involves agriculture, art and industry; silkworm rearing is an art in the hands of rural people; reeling of the silk from the cocoons formed by the worms is an industry of different financial investments. Scientific sericulture is the meeting place for agriculture and art, art and industry, ancient culture and civilization, the rich and the poor it reflects the interdependence of these.

Silk is a way of life in India. Over thousands of years, it has become an inseparable part of Indian culture and tradition. No ritual is complete without silk being used as a wear in some form or the other. Silk is the undisputed queen of textiles over the centuries. Silk provides much needed work in several developing and labour rich countries. More than 10 million farmers raise silk in China today. Sericulture is a cottage industry par excellence. It is one of the most labour intensive sectors of the Indian economy combining both agriculture and industry, which provides for means of livelihood to a large section of the population i.e. mulberry cultivator, co-operative rearer, silkworm seed producer, farmer-cum-rearer, reeler, twister, weaver, hand spinners of silk waste, traders etc. It is the only one cash crop in agriculture sector that gives returns within 30 days. This industry provides employment nearly to three five million people in our country. Sericulture is cultivated in Karnataka, Bengal, Tamil Nadu, Andhra Pradesh, Jammu & Kashmir, Gujrat, Kerala, Maharastra, Uttar Pradesh, Rajasthan, Bihar, Orissa etc.

In view of its potentiality for job oriented or self employment positions at various levels can be suitable to +2 students after successful completion of vocational sericulture course by providing suitable syllabi with maximum exposure to practical and or field work. With this knowledge and application skills these can enter as entrepreneur or as an employ for effective results in sericulture industry.

II. OBJECTIVES OF THE COURSE

To train the students in mulberry cultivation, farm maintenance, seed Technology, Silkworm rearing, Silk Reeling.

To make the students to understand and identify the mulberry, silkworm diseases and pests.

To make them to learn the skills necessary for self employment in mulberry leaf production, seed production, silkworm rearing, cocoon reeling and by products collection.

To give maximum exposure to leaf quality, seed cocoon quality, seed quality, commercial cocoon quality, fibre quality so as to get maximum returns in practice.

To make them to learn all the commercial parameters of cocoon for assessment of cocoon quality.

To understand and estimate the leaf production in a particular mulberry plot.

To give employability and job opportunities in the public and private and govt. sectors.

To guide and give counselling to become entrepreneur.

III. SKILLS TO BE PROVIDED.

Land selection, preparation.

Mulberry twig selection, planation, protection.

Methods of mulberry propagation.

Mulberry cultivation methods; leaf selection, collection and preservation.

Seed cocoon selection, moth selection, pairing and egg production (DFL'S)

Egg preservation schedules, Acid treatment.

Chawki rearing, late age rearing, co-operative rearing.

Reeling on country charka, cottage reeling machine, epprouvette.

Silk cleaning, examination, lacing, skening, bailing.

Farm Management skills.

IV. JOB OPPORTUNITIES

a) Wage Employment

- i) Operative (Grainage)
- ii) Operative (Mulberry Cultivation)
- iii) Operative (extension)
- iv) Operative (rearing)
- v) Operative (reeling)
- vi) Lab attender (in college having voc.sericulture)
- vii) Cultivator/Labour (daily wage)

b) Self Employment

- i) Mulberry nursery
- ii) Grainage
- iii) Sericulture service centre
- iv) Mulberry grower
- v) Silkworm seed supplier
- vi) Mulberry propagator
- vii) Bye-product supplier
- viii) Silkworm rearer
- ix) Silk reeler
- x) Silk twister
- xi) Seed rearer
- xii) Cocoon supplier

V. Annual Scheme of Instruction and Examination for Vocational Courses 1st & 2nd year

Part-A	Theory		Practicals		Total	
	Periods	Marks	Periods	Marks	Periods	Marks
Marks						
1. English	185	75	-	-	185	75
2. G.F.C	185	75	-	-	185	75
Part-B						
3. Vocational subject						
Paper - I	160	50	160	50	320	100
Paper - II	160	50	160	50	320	100
Paper - III	160	50	160	50	320	100
Part-C						
4. On the Job Training			210	50	210	50
Total	840	300	690	200	1540	500

Scheme of Instruction per week for Vocational Courses

Part-A	Theory	Practical	Total
1. Communication skills	6	-	6
2. G.F.C	4	2	6
Part-B			
3. Vocational subjects			
Paper - I	5	5	10
Paper - II	5	5	10
Paper - III	5	5	10

NEW SCHEME PROPOSED
CALCULATION OF WORKING PERIODS

Number of working days per annum	= 220 days
Number of periods per annum 220×7	= 1540 periods
Periods allotted for OJT (30 days 30×7)	= 210 periods
Periods allotted to communication skills/ English	= 185 periods
Periods allotted to GFC (125 Theory + 60 Practicals)	= 185 periods
Periods allotted to Vocational subjects	
Paper I (Theory 160 + Practicals 160)	= 320 periods
Paper II (Theory 160 + Practicals 160)	= 320 periods
Paper III (Theory 160 + Practicals 160)	= 320 periods
Total	= 1540 periods

Periods allotted per week

1. Communication skill / English	= 6 periods
2. G.F.C (Theory 4 + Practicals 2)	= 6 periods
3. Vocational subjects	
Peper I (Theory 5 + Practicals 5)	= 10 periods
Peper II (Theory 5 + Practicals 5)	= 10 periods
Peper III (Theory 5 + Practicals 5)	= 10 periods
Total periods per week	= 42 periods

VI. SYLLABUS

FIRST YEAR - SERICULTURE VOCATIONAL

Paper	Theory	Practicals
Paper - I	Mulberry cultivation	Mulberry cultivation
Paper - II	Mulberry Farm Maintenance	Mulberry Farm Maintenance
Paper - III	Silkworm Morphology and Seed technology	Silkworm Morphology and seed technology

FIRST YEAR - PAPER - I (Theory)
MULBERRY CULTIVATION

Chapter No.	Topics	No.of Hours
1.	History of sericulture	5
2.	Meteorology	15
3.	Soils - preparation of land	32
4.	Distribution and Morphologyof Mulberry	30
5.	Propagation of Mulberry	30
6.	Cultivation and Cultural practices	20
7.	Manures and Fertilizers	20
8.	Leaf Harvesting	8
	Total	160

DETAILED SYLLABUS

1. HISTORY OF SERI CULTURE

- 1.1. Introduction
- 1.2. History
- 1.3. Silk Road
- 1.4. Silk production
- 1.5. Scope and limitations of sericultural Industry

2. METEROLOGY

- 2.1. Introduction
- 2.2. Weather components
- 2.3. Clouds
- 2.4. Precipitation
- 2.5. Condensation
- 2.6. Conditions required for mulberry growth

3. SOILS AND PREPARATION OF LAND

- 3.1. Introduction
- 3.2. Types of soils
- 3.3. Soils of Andhra Pradesh
- 3.4. Properties of soils
- 3.5. Selection of land
- 3.6. Layout of plantation
- 3.7. Land preparation
- 3.8. Soil Erosion and control methods
- 3.9. Soil moisture conservation

4. DISTRIBUTION AND MORPHOLOGY OF MULBERRY

- 4.1. Introduction
- 4.2. Distribution of mulberry
- 4.3. Mulberry varieties
- 4.4. Systematic position
- 4.5. Morphology of mulberry

5. PROPAGATION OF MULBERRY

- 5.1. Introduction
- 5.2. Sexual propagation
- 5.3. Asexual propagation
- 5.4. Nurseries

6. CULTIVATION AND CULTURAL PRACTICES

- 6.1. Introduction
- 6.2. Garden implements
- 6.3. Selection of mulberry variety
- 6.4. Mixed cropping
- 6.5. Cultivation methods
- 6.6. Weeds and intercultivation
- 6.7. Pruning and Training
- 6.8. Principles of irrigation
- 6.9. Water requirements for mulberry
- 6.10. Methods of irrigation
- 6.11. Cultivation Schedules

7. MANURES AND FERTILIZERS

- 7.1. Introduction
- 7.2. Manures
- 7.3. Fertilizers
- 7.4. Vermi - compost
- 7.5. Application methods and schedules

8. LEAF HARVESTING

- 8.1. Introduction
- 8.2. Harvesting Methods
- 8.3. Preservation leaves

FIRST YEAR PAPER - I
(PRACTICALS)
MULBERRY CULTIVATION

S.No.	Unit of Activity	No. of Hours	:160
1.	Identification of different garden implements		
2.	Identification of different types of soils		
3.	Soil sampling		
4.	Recording of soil PH		
5.	Reclamation of soil		
6.	Selection and preparation of land		
7.	Soil moisture conservation methods		
8.	Study of morphological characters of mulberry leaf, twig, cutting, leaf, stem section cutting		
9.	Study of mulberry varieties		
10.	Propagation through cuttings, graftings, buddings layerings		
11.	Preparation of cuttings		
12.	Identification of different types of weeds		
13.	Pruning Methods		
14.	Irrigation of mulberry farm		
15.	Preparation of compost		
16.	Preparation of vermi-compost		
17.	Application of manures		
18.	Leaf harvesting		
19.	Transporting and preservation of leaves		
20.	Propagation through seeds		
21.	Preparation of herbarium		
22.	Visit to nearest mulberry farms		

**FIRST YEAR PAPER - II
(THEORY)
MULBERRY FARM MAINTENANCE**

S.No.	Unit of Activity	No. of Hours
1.	Farm maintenance	30
2.	Estimation of leaf yield	15
3.	Economics	25
4.	Secondary foodplants and diet	20
5.	Mulberry diseases	40
6.	Mulberry pests	15
7.	Uses of mulberry	05
8.	Seri biotechnology	10
	Total	160

Detailed Syllabus

1. Farm Maintenance

- 1.1. Introduction
- 1.2. Systems of farming
- 1.3. Labour Management
- 1.4. Farm records

2. Estimation of Leafyield

- 2.1. Introduction
- 2.2. Methods of estimation

3. Economics

- 3.1. Introduction
- 3.2. Nurseries
- 3.3. Rainfed cultivation
- 3.4. Irrigated cultivation
- 3.5. Economy of one acre mulberry

4. Secondary Food Plants And Diet

- 4.1. Introduction
- 4.2. Secondary food plants
- 4.3. Artificial diet
- 4.4. Composition of diet
- 4.5. Preparation of diet

5. Mulberry Diseases

- 5.1. Introduction
- 5.2. Bacterial diseases
- 5.3. Viral diseases
- 5.4. Fungal diseases
- 5.5. Parasitic diseases
- 5.6. Nutrient deficiencies and control

6. Mulberry Pests

- 6.1. Introduction
- 6.2. Lepidopteran pests
- 6.3. Jarrids
- 6.4. Thrips
- 6.5. Mites
- 6.6. Beetles

7. Uses of Mulberry

- 7.1. Introduction
- 7.2. Medicinal uses
- 7.3. Ornamental uses
- 7.4. Other uses

8. Seri-Biotechnology

- 8.1. Introduction
- 8.2. Tissue and organ culture
- 8.3. Plant biotechnology
- 8.4. Silkworm biotechnology

**FIRST YEAR - PAPER II
(PRACTICALS)
MULBERRY FARM MAINTENANCE**

Sl.No.	Topics	No.of Hours
1	Estimation of leaf yield	10
2.	Identification and control of foliar diseases	10
3.	Identification and control of root-rot disease	10
4.	Identification and control of root-knot disease	10
5.	Identification and control of minor pests of mulberry	10
6.	Identification and control of major pests of mulberry	10
7.	Identification of deficiency diseases	8
8.	Collection and preservation of diseased leaves	10
9.	Collection and preservation of different pests	12
10.	Maintenance of farm records	6
11.	Study of different farms in the village	10
12.	Field studies on the pests of mulberry	8
13.	Identification of secondary food plants	4
14.	Preparation of artificial diet	6
15.	Preparation of organ culture media	10
16.	Visit to nearest mulberry and other farms	10
17.	Tabulation of farm records	06
	Total	160

**FIRST YEAR PAPER - III
(THEORY)
SILKWORM MORPHOLOGY &
SEED TECHNOLOGY**

Sl.No.	Topics	No.of Hours
1.	Systematic position of Bombyx mori	5
2.	Morphology and life history of Bombyx mori	20
3.	Parental races	15
4.	Grainage equipment	20
5.	Grainage operations	30
6.	Seed production	30
7.	Acid treatment	30
8.	Economics	10
	Total	160

Detailed Syllabus

1. Systematic Position of Bombyx Mori

- 1.1. Introduction
- 1.2. Classification
- 1.3. Types of silkworms

2. Morphology and Life History of Bombyx

- 2.1. Introduction
- 2.2. Morphology of life stages
- 2.3. Life history
- 2.4. Metamorphosis

3. Parental Races

- 3.1. Introduction
- 3.2. Distribution
- 3.3. Races
- 3.4. Voltinism, moulting

4. Grainage Equipment

- 4.1. Introduction
- 4.2. Prerequisites of Grainage equipment
- 4.3. Grainage building
- 4.4. Equipment and uses
- 4.5. Disinfection

5. Grainage Operations

- 5.1. Introduction
- 5.2. Stock maintenance
- 5.3. Selection of seed races
- 5.4. Procurement of seed
- 5.5. Selection of seed
- 5.6. Sexing
- 5.7. Synchronisation
- 5.8. Moth emergency

5.9. Coupling, decoupling

5.10. Grainage records

6. Seed Production

6.1. Introduction

6.2. Oviposition

6.3. Preparation of layings

6.4. Moth examination

6.5. Surface sterilisation

6.6. Assessment of layings

7. Acid Treatment

7.1. Introduction

7.2. Incubation of eggs

7.3. Types of eggs

7.4. Physical and Chemical stimulants

7.5. Types of Acid treatment

8. Economics

8.1. Introduction

8.2. Economics for 10 lakh seed capacity

**FIRST YEAR PAPER III
(PRACTICALS)
SILKWORM MORPHOLOGY & SEED TECHNOLOGY**

S.No.	Unit of Activity	No. of hours
1.	Morphological studies of Bombyx	10
2.	Study of different races of silkworms	10
3.	Study plan of grainage building	6
4.	Prepare grainage model with locally available material	05
5.	Identification of grainage equipment	10
6.	Preparation of disinfectants	12
7.	Disinfection of grainage building	10
8.	Study of Silkworm races and types of seed	5
9.	Study of norms for procurement of seed cocoons	8
10.	Processing and preservation of seed cocoons	5
11.	Sex separation	8
12.	Synchronisation of moth emergence	8
13.	Coupling, decoupling, oviposition	8
14.	Preparation of egg cards	05
15.	Preparation of loose eggs	08
16.	Moth examination	6
17.	Sorting and disinfection of eggs	6
18.	Handling of eggs	6
19.	Study of hibernation schedules	8
20.	Collection and preservation of Bombyx mori life stages	4
21.	Maintenance of grainage records	2
22.	Visits to nearest grainages	10
	Total	160

SECOND YEAR - SERICULTURE VOCATIONAL

Paper	Theory	Practicals
Paper - I	Non-Mulberry silkworms and mulberry rearing requirements	Non-Mulberry silkworms and mulberry rearing requirements
Paper - II	Silkworm rearing Technology	Silkworm rearing Technology
Paper - III	Reeling Technology	Reeling Technology

**SECOND YEAR
PAPER - I (THEORY)
NON-MULBERRY SILKWORMS AND
MULBERRY REARING REQUIREMENTS**

Sl.No.	Topics	No.of Periods
1	Non mulberry Silkworms	30
2.	Rearing House	25
3.	Rearing equipment	30
4.	Preparation for rearing	25
5.	Environmental conditions	20
6.	Equipment required for rearing	
	300 DFSL	10
7.	Rearing records	10
8.	Incubation of eggs	20
	Total	160

Detailed Syllabus

1. Non-Mulberry Silkworms

- 1.1. Introduction
- 1.2. Distribution
- 1.3. Sailable features of non-mulberry Silkworms

2. Rearing House

- 2.1. Introduction
- 2.2. Site Selection
- 2.3. CSB Model
- 2.4. Types of rearing houses

3. Rearing Equipment

- 3.1. Introduction
- 3.2. Equipment and uses
- 3.3. Chemicals and uses

4. Preparation for Rearing

- 4.1. Introduction
- 4.2. Cleaning
- 4.3. Preparation of disinfection
- 4.4. Disinfection
- 4.5. Maintenance of hygienic conditions

5. Environmental Conditions

- 5.1. Introduction
- 5.2. Temperature
- 5.3. Humidity
- 5.4. Air
- 5.5. Light
- 5.6. Regulation of environmental conditions

6. Equipment Required for Rearing 300 DFSL

- 6.1. Introduction
- 6.2. Equipment

7. Raring Records

7.1. Introduction

7.2. Records and uses

8. Incubation of Eggs

8.1. Introduction

8.2. Blue egg stage

8.3. Black Boxing

SECOND YEAR PAPER I (PRACTICALS)
NON-MULBERRY SILKWORMS AND
MULBERRY REARING REQUIREMENTS

SI.No.	Topics	No.of Periods
1.	Study of different non-mulberry silkworms	10
2.	Study plan of CSB model (Model rearing house)	05
3.	Study plan of different rearing houses	10
4.	Preparation of model rearing houses with locally available material	15
5.	Identification of different rearing appliances	8
6.	Sketching of different rearing appliances	10
7.	Preparation of disinfectants	10
8.	Practice in methods of disinfection	15
9.	Preparation for rearing	6
10.	Preparation of different mountages	8
11.	Comparison of different cocoons	8
12.	Collection and preservation of non-mulberry silkworms	10
13.	Maintenance of Rearing records	8
14.	Handling of Silkworms eggs for hatching	4
15.	Black boxing of eggs	10
16.	Identification of pin head stage	5
	Total	160

SECOND YEAR - PAPER - II (THEORY)
SILKWORMS REARING TECHNOLOGY

Sl.No.	Topics	No.of Periods
1	Hatching and brushing	15
2.	Chawki rearing	25
3.	Late age rearing	25
4.	Effective Rate of Rearing (ERR)	15
5.	Spinning and Mounting	20
6.	Silkworm diseases	30
7.	Silkworm pests	20
8.	Economics	10
	Total	160

Detailed Syllabus

1. Hatching and Brushing

- 1.1. Introduction
- 1.2. Hatching
- 1.3. Hatching percentage
- 1.4. Methods of brushing

2. Chawki Rearing

- 2.1. Introduction
- 2.2. Importance of Chawki rearing
- 2.3. Environmental conditions
- 2.4. Quality of mulberry leaf
- 2.5. Leaf selection
- 2.6. Feeding schedules
- 2.7. Bed cleaning
- 2.8. Spacing
- 2.9. Moulting
- 2.10. Rearing methods

3. Late-Age worm Rearing

- 3.1. Introduction
- 3.2. Importance of late age rearing
- 3.3. Environmental condition
- 3.4. Quality of mulberry leaf
- 3.5. Leaf selection
- 3.6. Feeding schedules
- 3.7. Bed cleaning
- 3.8. Spacing
- 3.9. Moulting
- 3.10. Rearing methods

4. Effective Rate of Rearing (ERR)

- 4.1. Introduction
- 4.2. Calculation of ERR by Weight
- 4.3. Calculation of ERR by number

5. Spinning and Mounting

- 5.1. Introduction
- 5.2. Ripening of worms
- 5.3. Silk gland
- 5.4. Process of spinning
- 5.5. Mountages
- 5.6. Mounting
- 5.7. Environmental conditions
- 5.8. Care during mounting
- 5.9. Cocoon harvesting
- 5.10. Transport

6. Silkworm Diseases

- 6.1. Introduction
- 6.2. Protozoan diseases
- 6.3. Bacterial diseases
- 6.4. Viral diseases
- 6.5. Fungal diseases

7. Silkworm Pests

- 7.1. Introduction
- 7.2. Major pests
- 7.3. Minor pests

8. Economics

- 8.1. Introduction
- 8.2. Economics of rearing 300 DFLs or one acre
- 8.3. Bye-products
- 8.4. Rearing records

SECOND YEAR PAPER II (PRACTICALS)
SILKWORM REARING TECHNOLOGY

Sl.No.	Topics	No.of Periods
1	Calculation of haching percentage	10
2.	Methods of brushing	10
3.	Preparation of brushing reports	5
4.	Rearing methods for young larvae	10
5.	Rearing methods for late-age larvae	10
6.	Dissections-silk gland, digestive system of V instar larva	
7.	Preparation of leaf for young worms	5
8.	Storage of leaf for silkworms	5
9.	Preparation of mounting and mounting methods	10
10.	Harvesting and sorting of cocoons	5
11.	Cocoon assessment	10
12.	Identification of bacterial diseases	5
13.	Prevention and control methods of bacterial diseases	5
14.	Identification of pebrine disease	10
15.	Prevention and control of pebrine disease	5
16.	Identification of Fungal diseases	5
17.	Prevention and control of fungal diseases	5
18.	Identification of visal diseases	5
19.	Prevention and control of viral diseases	5
20.	Identification of different stages of uzifly	5
21.	Prevention and control measures of minorpests	5
22.	Cocoon Crop Assessment (ERR)	20
23.	Visit to nearest rearing house	5
	Total	160

SECOND YEAR - PAPER - III (THEORY)
REELING TECHNOLOGY

Sl.No.	Topics	No.of Periods
1	.Silk Reeling-introduction	10
2.	Cocoon quality	15
3.	Cocoon sorting	15
4.	Cocoon marketing	10
5.	Cocoon stifling and conditioning	30
6.	Cocoon cooking and brushing	30
7.	Reeling	30
8.	Raw silk testing and Economics	20
	Total	160

Detailed Syllabus

1. Silk Reeling-Introduction

- 1.1. Introduction
- 1.2. Importance of Reeling Industry
- 1.3. Scope and Limitation

2. Cocoon Quality

- 2.1. Introduction
- 2.2. Physical characters
- 2.3. Commercial characters
- 2.4. Principles for assessment
- 2.5. Model problems

3. Cocoon Sorting

- 3.1. Introduction
- 3.2. Tactile and numerical tests
- 3.3. Defective cocoons
- 3.4. Good cocoons
- 3.5. Model problems

4. Cocoon Marketing

- 4.1. Introduction
- 4.2. Rules and acts
- 4.3. Price fixation
- 4.4. Model problems

5. Cocoon Stifling and Conditioning

- 5.1. Introduction
- 5.2. Stifling methods
- 5.3. Storage of cocoons
- 5.4. Sorting of cocoons
- 5.5. Deflossing
- 5.6. Riddling
- 5.7. Mixing

6. Cocoon Cooking and Brushing

- 6.1. Introduction
- 6.2. Properties of silk
- 6.3. Cooking methods
- 6.4. Brushing and methods of brushing

7. Reeling

- 7.1. Introduction
- 7.2. Reeling operations
- 7.3. Reeling apparatus
- 7.4. Reeling machines
- 7.5. Re-reeling
- 7.6. Silk examination
- 7.7. Lacing and skeining
- 7.8. Book making and bailing
- 7.9. Storage of silk
- 7.10. Dyeing

8. Raw Silktesting and Economics

- 8.1. Introduction
- 8.2. Testing methods and parameters
- 8.3. Standard testing appliances
- 8.4. Classification of silk
- 8.5. Economics

SECOND YEAR PAPER III (PRACTICALS)
REELING TECHNOLOGY

Sl.No.	Topics	No.of Periods
1	Study of parts of cocoons	10
2.	Assessment of commercial parameters quality tests	20
3.	Identification of defective and good cocoons	20
4.	Stifling of cocoons	20
5.	Cooking of cocoons	20
6.	Reeling : Charka, cottage basin, epprouvette	25
7.	Re-reeling, silk examination lacing, skeining, booking, Dyeing	25
8.	Collection and preservation of bye-products of reeling	5
9.	Maintenance of Records	5
10.	Visits to nearest Reeling Centres	10
	Total	160

Syllabus :

Visit meteorological observatory to study the use of weather recording equipment

Study of deficiency symptoms of essential plant nutrients

Seed treatment with fungicide and bacterial inoculant

Inorganic fertilizers and their identification

Study of economical use of water (micro-irrigation)

Identification and collection of weeds and preparation of herbarium

Use of chemical pesticides-preparing solution of given concentration; application and observing their effect on crops and weeds.

Identification and collection of insect, pests and diseases

Estimation of quantity of fertilizers based on recommended dose of crop

Study of water requirements of various crops

Seed germination types and conditions necessary for germination and schedules of cultivation

Study of seed character - viability, purity, dormancy, germination

Asexual methods of propagation - cutting, layering, budding, grafting

Use of plant structures for multiplication - (tissue culture)

Raising of seedling and plant materials and their transplanting

Use of growth regulators in plant multiplication and study of glasshouses nursery bed.

SITE : Sericulture Farms :

1. CSR and TI Research Extension Centre, Vikarabad.
2. State Government Institutions having Rearing, Grainage facilities.
3. Department of Sericulture, Government of Andhra Pradesh
Lingareddyguda, Shadnagar.

Syllabus :

Study of the food plants of different types of silkworms
Study and morphological features of root, branch and leaf
Visit to farmer to understand the profitability of a mulberry cultivation
Study of different farm tools, implements, equipments and machinery used on farm.
Study of agronomic aspect of farm tools and implements for their operation
Study of manually operated farm tools.
Study of animal operated farm tools
Study of power operated machines
Study the different mulberry varieties and their diagnostic features
Selection of nursery site based on soil type, topography, drainage/irrigation facility.
Examination of seed material for its suitability and freeness from seed born diseases/pests
Methods of nursery bed preparation
Preparation of farm yard manure and compost
Methods of fertilizer application

Weeding and inter-culture operations

Identification of various diseases, pests and other disorders.

Uprooting, care and preservation of seedlings.

Pests of mulberry crops and post harvest produce

Study of the cycle nature and extent of damage, host range of pests

Study and application of the management methods

Study and application of integrated pest management

Upkeep and maintenance of plant protection equipment

SITE : Graianages :

1. National Silkworm Seed Project, Central Silk Board, Mysore.
2. State Government Institutions (Grainage), Private Grainages.
3. Department of Sericulture, Grainage Centre, Kammadanam (v) Shadnagar.

Syllabus :

Visit to a grainage and study the space and equipment requirements for a seed production unit.

Identification of different sericigenous insects.

Cleaning, Washing and drying of appliances

Preparation of disinfectants f rearing building and appliances

Preliminary seed cocoon testingh

Early eclosin test

Sorting, sexing and preservation of seed cocoons

Preparing loose and sheet eggs

Pairing, duration of pairing and ideal conditions for oviposition

Microscope functioning and maintenance

Moth examination (individuals and mass) pebrine detection

Methods of acid treatment

Refrigeration requirements

Different schedules of chilling and acid treatment

Hibernation schedules

Silkworm seed incubation requirements

Assessing the cocoons for yield and quality

Cocoon transportation and marketing

Study of various records of a grainage

SITE :

State Government Cocoon markets (Thirumalagiri,
Rangareddy, Dharmavaram, Hindupur, Madakasira)

Syllabus

Cocoon Selection for seed preparation
Ideal method of transporting seed cocoons
Price fixation

SITE :

Government reeling centres Station road shadnagar

Syllabus :

Study of good cocoons
Study of defective cocoons
Collection of defective cocoons
Preparation for reeling
Stifling of cocoons
Cooking of cocoons
Cocoon mixing
Cocoon sorting
Cocoon riddling
Observation of brusing equipment and brushing
Collection of waste silk
Study of Reeling machine
Reeling on Charka
Study of reeling records

VIII. List of Equipment

S.No.	Name	No. Required
1.	Antwells	8
2.	Rearing stands	2
3.	Feeding stand	1
4.	Leaf chamber	1
5.	Bamboo round trays	16
6.	Bill Hoe	2
7.	Budding knife	4
8.	Grafting cum budding knife	4
9.	Digging fork	2
10.	Garden shear	2
11.	Garden rake	2
12.	Hand fork	4
13.	Hand cultivator	4
14.	Iron pans	4
15.	Kodali	4
16.	Pick axe	4
17.	Pruning knife	4
18.	Pruning saw	4
19.	Secateurs	4
20.	Showel	2
21.	Spade	4
22.	Tree pruner	2
23.	Crow bars	2
24.	Sprayer	1
25.	Face mask	1

26.	Gloves	2 pairs
27.	Chandrikas	16
28.	Leaf baskets	4
29.	Metal door mats	4
30.	Metal basin stand	1
31.	Hydrometer	1
32.	Thermometer	1
33.	Hygrometer	1
34.	Form rubber strips	1 kg
35.	Paraffin wax paper	2 rolls every year
36.	Cleaning nets each size	20
37.	Chopping board and knife	1 each
38.	Acid treatment bath	1
39.	Chemical balance	1
40.	Cellules	100
41.	Compound microscope	4
42.	Moth crushing sets	10
43.	Slide box, slides	5 pckts
44.	Watch glasses	5 dozens
45.	Wire mesh (uzy proof)	25 ft
46.	Water cans	4
47.	Measuring cylinders (1000ml, 500ml, 250ml, 100ml, 50ml, 25ml)	1 eachsize
48.	Electric stove	1
49.	Specimens Mulberry/Silkworm diseases, pests	

Soils (different types)

Fertilizers, Manures

Cocoons (Mulberry, non-mulberry)

Weeds (laminated)

Varieties of mulberry leaves

(Kanva₂, Mysore local, S₃₆, S₅₆)

50. Chemicals

- formalin, KOH, NaOH, HCL

51.

An amount of Rs. 5,000/-

(Rupees five thousand) grant for
recurring expenditure for mulberry
and rearing operations

Raw Material

a) Consumable

Fertilizers

HCl

KOH

Cocoons

Formaldehyde/para formaldehyde

Grafting wax

Plant hormones

Egg cards

Starch/Maranta starch/gum

Uzicide

China clay

Diathane M45

b) Non-consumable

All garden implements

Specimens, (Mulberry plant material, silkworm stages, cocoons, weeds)

IX.a) Collaboration Institutions for Curriculum Transaction

1. N.G. Ranga Agricultural University, Hyderabad
2. CIVE, Agricultural Division, Bhopal
3. Central Silk Board, Bangalore
4. State Sericultural Department
5. Universities offering Sericulture (Kakatiya, Padmavathi Mahila, Sri Krishnadevaraya, Sri Venkateswara)
6. CTRTI, Ranchi
7. CSRTI, Bangalore
8. CSRTI, Mysore
9. Regional Tasar Research Station, Warangal.

b) On the Job Training Centres

Site : Research Institute :

1. Central Sericultural Research and Training Institute, Mysore, Central Silk Board, Coonoor, Nilgiris Districts
2. Central Silk Technological Research Institute, Bangalore
3. Central Tasar Research and Training Institute, Ranchi
4. State Govt. Institutions
5. Universities offering Sericulture at PG Level, Kakatiya, Osmania, Padmavathi, SKD, SV Universities.
6. Department of Sericulture, Government of Andhra Pradesh, Lingareddy.

X. QUALIFICATION FOR LECTURERS

M.Sc. (Sericulture)/M.Sc. (Zoology) with P.G. Diploma in sericulture/ M.Sc (Botany) with PGDS/B.Sc. Ag. with PGDS

XI. VERTICAL MOBILITY

a) With Bridge course

1. Eligible for admission into
B.Sc.
2. B.Sc. Agriculture (through EAMCET)
3. B.Sc.(Farm Sciences)

b) Without Bridge Course

Eligible for admission into
B.Sc., (Sericulture)/B.A./B.Com/B.B.M

XIII. REFERENCE BOOKS

1. Pattu Parishrama (Inter Vocational Course Telugu Edition) by Dr. P. Srinivas , Telugu Academy, Hyderabad, 1996
2. Text Book on Mulberry Cultivation, BIE, Hyderabad by Jaya Rao and Ramaswamy, 1994.
3. Text Book on Farm Maintenance and Seed Technology, BIE Hyderabad by Adithya Kumar and Somi Reddy, 1994.
4. Text Book on Silkworm Rearing, BIE, Hyderabad by Dr. P. Srinivas and Y. Ramaswamy, 1994.
5. Text Book on Silkworm Diseases, Pests and Silk Reeling, BIE Hyderabad by Dr. P. Srinivas, Y. Ramaswamy, 1994
6. Instructional cum practical Manual, NCERT, New Delhi
7. Pattu Parishrama (B.Sc. Elective) Telugu Edition by Dr. P. Srinivas, Madan Mohan, Smt. Laxmi, Telugu Academy, Hyderabad, 2001
8. Pattu Parishrama Practical Manual (Telugu Edition) by Dr. Maruthi Ram and Dr. P. Srinivas Telugu Academy, Hyderabad in press
9. Mulberry Agronomy by P. Srinivas and Madan Mohan, SIVE, DIE, Hyderabad 2001.
10. Mulberry Cultivation by P. Srinivas and Madan Mohan, SIVE, DIE, Hyderabad 2001.
11. Farm Maintenance and Mulberry Pathology by P. Srinivas and Ramadevi, SIVE, DIE, Hyderabad 2001.
12. Silkworm Morphology and seed Technology by P. Srinivas and Ramadevi, SIVE, DIE, Hyderabad 2001.

13. Non-mulberry Silkworms and Mulberry Rearing Requirements by Dr. P. Srinivas and Ramadevi, SIVE, DIE, Hyderabad 2003.
14. Silkworm Rearing Technology by Dr. P. Srinivas and Ramadevi, SIVE, DIE, Hyderabad 2003.
15. Silworm Pathology and Cocoon Marketing by Dr. P. Srinivas and Ramadevi, SIVE, DIE, Hyderabad 2003.
16. Post Cocoon Technology by Dr. P. Srinivas and Ramadevi, SIVE, DIE, Hyderabad 2003.
17. Manuals on Sericulture, FAO Agricultural Service Bulletins of United Nations
18. Hand book of Silworm Rearing by Tazim Fuji Publishing Co.Ltd., Tokyo, Japan
19. Hand book of Practical Sericultural by Ullal and Narsimhanna, CSB, Bangalore
20. Manual on Silkworm Engineering Production by Narsimhanna, CSB, Bangalore
21. Appropriate Techniques on Sericulture by Jolly S. Manfert, CSB, Bangalore.
24. Text book on Tropical Sericulture by Japan Cooperative Volunteers, Tokyo.
25. CCRTI Bulletins, CSB, Bangalore
26. Principles of Agronomy by v.T. Subbaiah Mudaliar
27. Irrigation - Theory and Practice by A.M. Michael
28. Hand Book on Agriculture, ICAR, New Delhi.
29. Land and Soil by Rayachaudhri

30. Imms text book of Entomology
31. Economic Entomology of South India by Ramakrishna Iyyar
32. Sericulture (B.Sc. III year Elective) Telugu Medium, Theory, Dr.P. Srinivas, Dr. G.Shamitha, Dr. Sujatha, Dr. B.R.Ambedkar Open University, Hyderabad, 2003.
33. Sericulture (B.Sc. III year Elective) English Medium,Theory, Dr.P. Srinivas, Dr. G.Shamitha, Dr.Sujatha, Dr. B.R. Ambedkar Open University, Hyderabad, 2003.
34. Sericulture (B.Sc. III year Elective) Telugu Medium, Practical Manual, Dr. P. Srinivas, Dr. G. Shamitha, Dr. Sujatha, Dr. B.R. Ambedkar Open University, Hyderabad, in press.
35. Sericulture (B.Sc. III year Elective) English Medium, Practical Manual, Dr. P. Srinivas, Dr. G. Shamitha, Dr. sujatha, Dr. B.R. Ambedkar Open University, Hyderabad, in press.

JOURNALS

1. Indian Silk, CSB, Bangalore.
2. Indian Journal of Sericulture, CSB, Bangalore.
3. Annadata, Eenadu Publications, Hyderabad.
4. Padipantalu, ASTI, Dept, of Agriculture, Hyderabad.

VOCATIONAL CURRICULUM-2005

(With effect from the Academic Year 2005-2006)

Curriculum of Intermediate Vocational Course
in
S E R I C U L T U R E



**STATE INSTITUTE OF VOCATIONAL EDUCATION &
BOARD OF INTERMEDIATE EDUCATION A.P.
Nampally, Hyderabad**

FOREWORD

The National Policy on Education (1986) while proposing educational reorganization, placed high priority on the programme of vocationalisation of education. It emphasized that well planned, systematic and rigorously implemented vocational education will create a distinct stream to prepare students for identified occupations encompassing several areas of activity. The primary aim of vocational courses was to cut across several occupational fields and prepare students with employable skills in organized sectors and self employment. Vocationalisation through re-orientation of educational strategies focused on creating a talent pool of skilled youth who are trained in courses relevant to the market and emerging needs of the various sections of the economy.

Inspired by this vision of the National Policy, the Government of Andhra Pradesh introduced Vocational Education at +2 level with an aim to diversify a sizeable segment of students at the senior secondary stage to the world of work. The State Government aimed at reducing the pressures on higher education through empowering youth by harnessing their capabilities. The requirement of skilled manpower industry is being fulfilled by charting a student's career with right options based on aptitude and talent. An right alternative to medical and engineering courses is envisaged in vocationalisation of education in the State.

In view of the changing needs of the students and growing demand for a spectrum of skill competencies in the economy, the Board of Intermediate Education has reviewed the curriculum of Vocational Courses in order to re-orient them based on their viability and practicability. The revised curriculum for Vocational Courses at Intermediate Level will come into effect from the Academic Year 2005-06 1st Year and from Academic Year 2006-07 for 2nd Year students.

I am confident that the revised curriculum will attract more and more students into vocational stream and help them train in need-based, productive courses leading to gainful employment.



SHASHANK GOEL

Secretary, BIE

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