PVKN GOVT COLLEG (A)- CHITTOOR

CERTIFICATE COURSE
CONDUCTED
BY
DEPARTMENT OF ZOOLOGY

CERTIFICATE COURSE

ON

" SERICULTURE "

2022-23

S.No.	RESOURCE PERSONS	DESIGNATION
1	Dr. M.THEJOMOORTHY M.Sc., Ph.D.,	LECTURER IN ZOOLOGY
2	P.NAVANEESWARA REDDY M.Sc.,	LECTURER IN ZOOLOGY

PVKN GOVT.COLLEGE(A),CHITTOOR

IQAC -Resolution Copy

The IQAC committee along with Chairperson and Coordinator, convened a meeting on ____OCTOBER 17 -2022_____ and resolved to conduct " Certificate/ Value Add-on courses " in the month of ____1 ST__NOVEMBER-2022_____ according to the feasibility of the departments.

It is also resolved to submit the details as per the checklist well in advance by the departments who had given their consents.

Check list:

1. **IQAC Resolution**
2. **Department wise Resolution**
3. **Course structure and planning**
    a. **Date and timing schedule**
    b. **Course out comes, Syllabus and model question papers**
    c. **Testing procedure**
    d. **Feedback form**
    e. **Model Certificate**
4. **Students' enrolmentlist**
5. **Attendance register for 30 hours and more (Online/ Offline)**
6. **Audio visual Aids (if available), PPTs, Handouts/ Printed material**
7. **Test(Exam) and Certificate distribution**
8. **Submission of Critical Analysis Report to IQAC**

Date: 19-10-2022

Place: Chittoor.

PVKN GOVT COLLEGE (A), CHITTOOR

Department of Zoology

Resolution

We the department of zoology conducted a meeting on 19-10-2022 at 10:40 AM to discuss about introducing of a certificate course entitled “SERICULTURE”. As the students of zoology well known about physiology, morphology physiological activities of various silkworms and their rearing,reeling process and their related diseases and their prevention. Hence this course will enhance their knowledge regarding sericulture more over it is one of the demanded field, hence we chosen to establish a certificate course on Sericulture.

Signature of the Head of the department

Faculty members

1) Dr. M. Thejomoorthy
2) Dr. P. Sudarsanam
3) Sri. P. Navaneeswara reddy
4) C. Komala devi

Notice Board

The department of Zoology is going to conduct a certificate course on "**SERICULTURE"** from 1-11-2022 with min 30 working hours. Interested candidates should come and register your names in the department on and before 28-10-2022

Time table for Sericulture (certificate course for the year of 2022-2023)

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Timings	4:00-5:00 PM	4:00-5:00 PM	4:00-5:00 PM	4:00-5:00 PM	4:00-5:00 PM	4:00-5:00 PM
Lecturer	Dr.MTM	PNR	Dr.MTM	PNR	Dr.MTM	PNR
Venue	Zoology lab-II Room no: 47	Zoology lab-II Room no: 47	Zoology lab-II Room no: 47	Zoology lab-II Room no: 47	Zoology lab-II Room no: 47	Zoology lab-II Room no: 47

Signature of the HOD Signature of the Coordinator Signature of the Principal

OBJECTIVES :

Upon successful completion of this course, the student should be able to:

- Generation of skilled man power in the field of sericulture,
- To impart training in extension management and transfer of technology,
- To impart training in Post Cocoon Technology, and
- To provide field exposure

COURSE OUT COMES:

After completing this course, the students will be able to

- Imparting basic knowledge in the organic farming
- To equip the candidates to meet the demands by self-farming
- To be aware of the personal and environmental effects of chemical fertilizers
- Promoting the application of organic and bio fertilizers for food production through implementation of experiments and demonstrations.

PVKN GOVT.COLLEGE(A)-CHITTOOR

DEPARTMENT OF ZOOLOGY

A Certificate Course in "ZOOLOGY: SERICULTURE"

Credits:02 **Total Hours:30**

Unit I:

Silkworm distribution and races, Prospects of sericulture in India

12 Lectures

The silkworms and its morphological characteristics.Distribution and types of races.Exotic and indigenous races of silkworm.Sericultural practices in tropical and temperate climate.

Sericulture Types- natural and synthetic fibres- types of silk produced in India; Employment generation in sericulture: Sericulture organization in India; role of state departments of Sericulture, Central Silk Board,

Unit II:

Biology of silkworm **13Lectures**

Mulberry and non-mulberry Sericulture.Biology of silkworm.Selection of mulberry variety and establishment of mulberry garden, Rearing house and rearing appliances. Silkworm rearing technology: Early age and Late age rearing Selection of silkworm races/breeds for rearing. Incubation- definition, requirement of environmental conditions, incubation devices; identification of stages of development; black boxing and its importance.

Unit III:

Diseases of silk worm and prevention and control **5 Lectures**

Diseases of silkworm prevention and control. Bacterial, Viral, Fungal diseases: causative agents, symptoms, transmission prevention and control.

SI .No	NAME OF THE STUDENT	GROUP
1.	Alamgatti Kavya	II BZC
2.	B.K. Swetha	II BZC
3.	Banda Prasanna	II BZC
4.	Devarinti Nataraj Soniya	II BZC
5.	Goduguchintha Divya	II BZC
6.	Gundluri vijayavani	II BZC
7.	Janakiramaiahgari Mounika	II BZC
8.	K. Swapna	II BZC
9.	K. Tilak	II BZC
10.	Kalikiri Bhavya	II BZC
11.	Kothapalli Supriya	II BZC
12.	M. Gunasekhari	II BZC
13.	M. Abubakar Siddiq	II BZC
14.	Rambe Yamini	II BZC
15.	S. Poojitha	II BZC
16.	Shaik Gousia	II BZC
17.	Talari Poojitha	II BZC
18.	Tummala Reddemma	II BZC
19.	V. Sneha	II BZC
20.	V. Surya Chandra prakash	II BZC
21.	Bukya Divya	II BZC
22.	D. Pavithra	II BZC
23.	Irala Sowmya	II BZC
24.	Kothapalli Nithin	II BZC
25.	Mude Nagamani	II BZC
26.	Pulikanti Suresh	II BZC
27.	R. Maheshwari	II BZC
28.	S. Nagaveni	II BZC
29.	Shaik Ummi salma	II BZC

INTRODUCTION:

Silkworms and its morphological characteristics:

The silkworm (Bombyx mori) has distinct morphological characteristics. It has a soft, cylindrical body with three main parts: the head, thorax, and abdomen. The head contains chewing mouthparts, sensory organs, and silk glands. Silkworms have three pairs of jointed legs on the thorax, facilitating movement.

They possess silk glands in the cephalic region, which produce silk proteins. As silkworms mature through larval stages (instars), their body color changes, and they molt to shed their exoskeletons. The mature larva, just before pupation, reaches a size of about 3-4 inches.

During the pupal stage, the silkworm encloses itself in a silk cocoon. Adult moths emerge from the pupa, characterized by feathery antennae, large compound eyes, and wings. The adult's primary purpose is reproduction, and it has reduced mouthparts, as it does not feed.

These morphological features contribute to the unique life cycle of silkworms, essential in sericulture for silk production.

Distribution and Races in Silkworms:

Silkwormsareprimarilydistributedinregions ofAsia,andtheircultivationiscloselylinke dtosilkproduction.Thedistributionofsilkwormsisinfluencedbytheavailabilityofsuitab lefoodplants.Bombyxmoriiswidelycultivatedin China,India,andothersilk-producingcountries.Differentsilkwormtypescontributetothediversityofsilkfabrics,ea chwithuniquecharacteristics.

RACES: A population within a species that is distinct in some way, esp. a subspecies. Indigenous originating in and characteristic of a particular region or country; native.

Eg., Pure Mysore, Nistari.

EXOTIC RACES:

Exotic plant or animal species introduced into an area where they do not occur naturally, nonnative species.

The main types of silkworms include:

1.Bombyx mori (Mulberry Silkworm): This is the most common and extensively cultivated silkworm. It feeds on mulberry leaves and is the primary producer of commercial silk.

2.Tussar Silkworm (Antheraea spp.): These silkworms belong to the genus Antheraea and produce Tussar silk. They feed on various trees, including Terminalia, Shorea, and Anogeissus.

3.Eri Silkworm (Samia ricini): Unlike the mulberry silkworm, Eri silkworms feed on castor leaves. They produce Eri silk, which is known for its distinctive texture.

4.Muga Silkworm (Antheraea assamensis): Found in Assam, India, Muga silkworms feed on som and soalu plants. They produce Muga silk, which is prized for its golden color.

5.Atlas Moth (Attacus atlas): While not a traditional silkworm, the caterpillar of the Atlas moth produces a silk-like substance. However, this material is not as fine or commercially valuable as silk from Bombyx mori.

INDIGENOUS RACES IN SILKWORMS:

Indigenous races of silkworms refer to varieties that are native to specific regions and have adapted to local environmental conditions. Some notable examples include:

1. Mysore Silkworm: Indigenous to Karnataka, India, the Mysore silkworm (Bombyx mori variety) is well adapted to the local climate and is known for producing Mulberry silk.

2. Nagoya Silkworm: Originating in Japan, the Nagoya silkworm (Bombyx mandarina) is a wild silk-producing species. It has adapted to the Japanese climate and is used in sericulture.

3.Assam Silkworms: Assam, India, is home to various indigenous silkworms, including the Muga silkworm (Antheraea assamensis) and Eri silkworm (Samia ricini), both of which are well adapted to the region's vegetation.

4.Chinese Oak Silkworm (Antheraea pernyi): Indigenous to China, this wild silk-producing silkworm feeds on oak leaves. It has been historically significant in sericulture.

NATURAL FIBRE PRODUCTION IN INDIA:

India is a major producer of various natural fibers. Some of the key natural fibers produced in India include:

1.Cotton: India is one of the largest producers of cotton globally. Cotton cultivation is widespread across states like Gujarat, Maharashtra, Andhra Pradesh, Punjab, and Haryana.

2.Jute: India is a major producer of jute, a versatile fiber used for making products like sacks, bags, and carpets. West Bengal is a primary region for jute cultivation.

3.Silk: As mentioned earlier, India is renowned for silk production, with states like Karnataka, Andhra Pradesh, Tamil Nadu, and West Bengal being prominent in sericulture.

4.Wool: Although not as extensive as some other fibers, India does produce wool, particularly in regions with a significant population of sheep. Kashmir is known for its Pashmina wool.

5.Coir: Coir, extracted from the husk of coconuts, is another natural fiber produced in India. Kerala, Karnataka, Tamil Nadu, and Andhra Pradesh are major contributors to coir production.

ARTIFICIAL FIBRE PRODUCTION IN INDIA:

India primarily focuses on natural silk production, with sericulture being a traditional industry. Artificial fiber silkworm production, involving synthetic or genetically modified silkworms, isn't a mainstream practice in India as of my last knowledge update in January 2022. The silk industry in India traditionally relies on the cultivation of silkworms like Bombyx mori for silk production. If there have

been developments in artificial fiber silkworm production, I recommend checking more recent sources for the latest information.

SERICULTURE ORGANISATION IN INDIA:

Role of state Departments in sericulture:

State sericulture departments play a crucial role in the development and promotion of sericulture within their respective states in India. Their responsibilities include:

1.Implementation of Policies: State sericulture departments implement the policies and programs formulated by the Central Silk Board (CSB) and the state government to promote sericulture.

2. Extension Services: They provide extension services to sericulturists, offering guidance on best practices in silkworm rearing, mulberry cultivation, and silk production.

3. Training and Skill Development: State departments organize training programs to enhance the skills of sericulturists and other stakeholders involved in the sericulture industry.

4.Research and Development: They may conduct or support research initiatives to improve silk production techniques, develop disease-resistant silkworm varieties,

CENTRAL SILK BOARD:

The Central Silk Board (CSB) is a statutory organization in India under the Ministry of Textiles. Established in 1948.

The Central Silk Board (CSB) in India plays a crucial role in the development of sericulture, which is the cultivation of silk-producing insects and the production of silk. It functions to promote, regulate, and organize sericulture activities across the country.

The key roles of the Central Silk Board include:

1.Research and Development: CSB conducts research to improve silk production, quality, and disease resistance in silkworms. It aims to enhance the overall efficiency and sustainability of sericulture.

2.Technology Transfer: The board facilitates the transfer of improved sericulture technologies to sericulturists, farmers, and entrepreneurs. This includes advancements in silkworm rearing, mulberry cultivation, and silk processing.

3.Training and Extension Services: CSB provides training programs and extension services to educate farmers and stakeholders involved in sericulture. This helps disseminate knowledge about best practices and new technologies.

4.Mulberry Development: CSB works on the development of mulberry plantations, which are crucial for feeding silkworms. This involves promoting improved mulberry varieties and cultivation methods.

5.Quality Control: The board sets quality standards for silk production and ensures adherence to these standards. This helps maintain the quality of Indian silk in domestic and international markets.

6.Market Promotion: CSB is involved in promoting the marketing of silk and silk products. This includes both domestic and international market promotion to support sericulture-based industries.

7.Policy Advocacy: It plays a role in formulating policies related to sericulture and silk production. This involves collaborating with government bodies to create a favorable environment for the sericulture industry.

SELECTION OF MULBERRY GARDEN:

When selecting a location for mulberry gardens, consider well-drained soil, ample sunlight, and protection from strong winds. Mulberries thrive in USDA zones 5-10 and prefer slightly acidic to neutral soil. Ensure proper spacing between trees for optimal growth, and consider factors like air circulation and proximity to buildings. Additionally, mulberries benefit from a location that minimizes exposure to late spring frosts.

TECHNOLOGY:

Silkworm rearing involves specific technologies to ensure optimal conditions for the development of silkworms and the production of silk. Here's an overview:

1.Sericulture Houses: Construct well-ventilated sericulture houses with temperature and humidity control. These houses protect silkworms from adverse weather conditions and predators.

2.Incubation Technology: Use incubators with controlled temperature and humidity for hatching silkworm eggs. Maintain cleanliness to prevent diseases.

3.Feeding Technology: Provide a steady supply of fresh mulberry leaves to the silkworms. Automated feeding systems can be employed for efficiency.

4.Molting Management: Create an environment conducive to molting, ensuring that silkworms shed their skin successfully. Adequate space, proper temperature, and cleanliness are essential.

5.Cocooning Space: Designated areas with appropriate frames or trays facilitate the spinning of silk cocoons. Maintain cleanliness and monitor environmental conditions.

6.Harvesting Technology: Develop methods for careful harvesting of mature cocoons to avoid damage. This may involve techniques to soften the sericin for easier silk extraction.

7.Silk Extraction: Employ technologies for the efficient unwinding of silk threads from cocoons. This can include mechanical or automated silk reeling machines.

8.Pest and Disease Management: Implement measures to control pests and diseases that can affect silkworms. This may involve the use of natural predators or biopesticides.

9.Quality Control: Establish quality control measures to ensure the production of high-quality silk. This includes monitoring cocoon quality, silk thread strength, and uniformity.

10.Research and Innovation: Stay updated with the latest research and innovations in sericulture technology to improve efficiency, disease resistance, and silk quality.

INCUBATION:

In sericulture, incubation refers to the controlled environment and conditions provided for the development of silkworm eggs into larvae. This stage involves maintaining specific temperature and humidity levels to support the hatching of eggs and the subsequent growth of silkworms.

Silkworm incubation typically lasts about 10 days at temperatures around 77-86°F (25-30°C). During this period, silkworm eggs are kept in a controlled environment until they hatch into larvae.

ENVIRONMENTAL CONDITIONS:

In sericulture, the environmental conditions for incubating silkworm eggs typically include maintaining a controlled environment with specific temperature and humidity levels. The optimal conditions for silkworm incubation are:

1.Temperature: Usually, a temperature range of 77-86°F (25-30°C) is maintained. This temperature range supports the hatching of silkworm eggs and the subsequent growth of larvae.

2.Humidity: High humidity is crucial for successful incubation. The relative humidity is often kept around 80-85%. This helps prevent the eggs from drying out and aids in the proper development of silkworms.

3.Ventilation: Proper ventilation is essential to ensure a constant supply of fresh air. This helps maintain the required oxygen levels and prevents the buildup of carbon dioxide, creating a healthy environment for silkworm development.

4.Lighting: While not as critical as temperature and humidity, some controlled lighting conditions may be implemented to simulate natural day and night cycles. This can influence the silkworms' behavior and growth

INCUBATION DEVICES:

In sericulture, incubation devices like silk egg incubators are used to provide controlled conditions for silkworm eggs to hatch. These devices typically maintain specific temperature and humidity levels to ensure optimal conditions for the development of silkworm embryos.

DEVELOPMENTAL STAGES:

In the incubation process of sericulture, there are several distinct stages of development for silkworm eggs. These stages include:

1.Egg Stage: This is the initial stage where the fertilized eggs are laid by the female silkworm moth.

2.Pre-incubation Stage: Before actual incubation, the eggs are stored under cool conditions to delay hatching until favorable conditions are provided.

3.Incubation Stage: The eggs are placed in an incubator where controlled temperature and humidity facilitate embryonic development.

4.Embryonic Development: During this stage, the embryo inside the egg undergoes progressive development.

5.Hatching Stage: This is the final stage where the fully developed larva, or silkworm, emerges from the egg.

DISEASE IN SILKWORMS:

Bacterial diseases:

1.Bacterial Flacherie:

Symptoms: Soft and flaccid larvae, yellowish appearance, watery excreta.

Causes: Bacillus cereus and other bacteria.

Prevention: Maintain clean rearing conditions, avoid overcrowding, and practice proper hygiene.Grasserie:

2.Grasserie:

Symptoms: Darkening and liquefaction of the body contents, foul odor, slow growth.

Causes: Bacillus thuringiensis and other bacteria.

Prevention: Ensure proper sanitation, provide fresh mulberry leaves, and control humidity levels

3.Bacterial Wilt:

Symptoms: Sudden death of larvae, dark discoloration in the body, sluggish behavior.

Causes: Pseudomonas aeruginosa and other bacteria.

Prevention: Use disease-free eggs, maintain proper temperature, and avoid contamination.

4.White Muscardine:

Symptoms: White powdery appearance on the body, lethargy, and death.

Causes: Beauveria bassiana (fungus, but can be associated with bacteria).

Prevention: Maintain cleanliness, control humidity, and avoid stressful conditions.

5.Pebrine (Caused by Microsporidia):

Symptoms: Black spots on the larvae, reduced silk production.

Causes: Nosema bombycis (microsporidian parasite).

Prevention: Practice rigorous disease screening, cull infected larvae, and maintain hygienic rearing practices.

6.Septicemia:

Symptoms: Darkening of body fluids, sudden death, weakened larvae.

Causes: Various bacteria entering the hemolymph.

Prevention: Strict hygiene, avoid injuries to larvae, and maintain optimal rearing conditions.

Always consult with experts in sericulture for accurate diagnosis and appropriate treatment. Regular monitoring, isolation of infected larvae, and implementing biosecurity measures are crucial for disease prevention in silkworms.

VIRAL DISEASES:

Silkworms can be affected by various viral diseases. Here's a brief overview:

1.Nuclear Polyhedrosis Virus (NPV):

Causative Agent: Baculovirus.

Symptoms: Milky white appearance in infected larvae, sluggish movement, loss of appetite.

Transmission: Horizontal transmission through contact with infected larvae or contaminated surfaces.

Prevention and Control: Maintain hygienic conditions, isolate infected larvae, use virus-free eggs

2.Bombyx Mori Macula-like Virus (BmMLV):

Causative Agent: BmMLV.

Symptoms: Yellowish spots on the integument, slow growth, reduced silk production.

Transmission: Vertical transmission from infected adults to offspring.

Prevention and Control: Strict hygiene, culling infected worms, breeding from healthy stock.

3.Grasserie (Flacherie) Virus:

Causative Agent: Densovirus.

Symptoms: Softening and liquefaction of the body, darkening of cuticle, sluggish behavior.

Transmission: Direct contact, contaminated rearing conditions.

Prevention and Control: Maintain clean rearing environment, use virus-free eggs, implement biosecurity measures.

4.Infectious Flacherie Virus (IFV):

Causative Agent: Iflavirus.

Symptoms: Watery appearance, lack of body turgor, loss of appetite.

Transmission: Horizontal transmission through fecal-oral route.

Prevention and Control: Sanitation, early detection, isolation of infected larvae.Cytoplasmic

5.Polyhedrosis Virus (CPV):

Causative Agent: Reovirus.

Symptoms: Slow growth, body darkening, flaccid appearance.

Transmission: Ingestion of contaminated food or feces.

Prevention and Control: Improve hygiene, maintain clean rearing conditions, use virus-free eggs

FUNGAL DISEASE:

Silkworms can be susceptible to various fungal diseases. Here's an overview:

1.Muscardine Disease:

Causative Agent: Beauveria bassiana, Metarhizium anisopliae.

Symptoms: White, fluffy mycelial growth on the surface of the infected larva, leading to death.

Transmission: Contact with spores, often through contaminated surfaces.

Prevention and Control: Maintain optimal environmental conditions, practice good hygiene, isolate infected larvae, use pathogen-free eggs.

2.White Muscardine Disease:

Causative Agent: Nomuraea rileyi.

Symptoms: White powdery appearance on the body, especially on the ventral side.

Transmission: Contact with spores from infected larvae or contaminated environment.

Prevention and Control: Improve ventilation, maintain cleanliness, use disease-resistant silkworm varieties.

3.Green Muscardine Disease:

Causative Agent: Aschersonia spp.

Symptoms: Greenish spore masses on the body, leading to larval death.

Transmission: Contact with spores, often through contaminated surfaces.

Prevention and Control: Implement proper sanitation practices, maintain optimal humidity levels, use disease-resistant silkworm varieties.

4.Brown Muscardine Disease:

Causative Agent: Isaria fumosorosea.

Symptoms: Brownish to blackish mycelial growth on the body, causing death.

Transmission: Contact with spores, often through contaminated surfaces.

Prevention and Control: Maintain cleanliness, use disease-resistant silkworm varieties, avoid overcrowding.

5.Flacherie:

Causative Agent: Bacteria such as Pseudomonas and Bacillus.

Symptoms: Soft, flaccid appearance, discoloration, and liquefaction of the body.

Transmission: Contaminated food, ingestion of pathogenic bacteria.

Prevention and Control: Improve hygiene, ensure proper larval nutrition, use disease-free egg.

Always consult with experts in sericulture for accurate diagnosis and appropriate treatment. Regular monitoring, isolation of infected larvae, and implementing biosecurity measures are crucial for disease prevention in silkworms.

Date: 17-12-2022

Place: Chittoor

PVKN GOVT COLLEGE (A), CHITTOOR

Department of Zoology

Certificate Course for the academic year 2022-23 Examination Notice

All the students enrolled for certificate course "**Sericulture**" are here by infirmed that, their certificate course Examination will be held on 22/12/2022 on 4:00am to 5:00am at Zoology lab. The question paper contains 20 multiple choice questions each question carries 2 marks. 1 hour duration will be given to the enrolled candidates only. Do attend the Exam in time.

QUESTIONS

MULTIPLE CHOICE QUESTIONS: 20M

1.What is the scientific name of the silkworm? [ ]

A) Bombyx mori. B) Arachis hypogaea. C) Oryza sativa. D) Musca domestica

2. Which stage of the silkworm life cycle is responsible for silk production? [ ]

A) Egg. B) Larva. C) Pupa. D) Adult

3.What do silkworms primarily feed on during their larval stage? [ ]

A) Leaves of mulberry tree

B) Nectar from flowers

C) Decaying matter

D) Small insects

4.What is the process of silk production by silkworms called? [ ]

A) Sericulture. B) Apiculture. C) Aquaculture. D) Horticulture

5.Which gland in the silkworm produces silk? [ ]

A) Salivary gland. B) Silk gland. C) Digestive gland. D) Malpighian tubule

6. Which country is traditionally known for its sericulture and silk production? [ ]

A) India. B) Brazil. C) Russia. D) Australia

7. The Central Silk Board was established in which year? [ ]

A) 1950 B) 1978 C) 1948 D) 1982

8.What is the primary focus of the Central Silk Board in India? [ ]

A) Cotton production B) Sericulture development

C) Wheat cultivation. D) Jute manufacturing

9.Which of the following is a major silk-producing state in India? [ ]

A) Maharashtra B) Uttar Pradesh C) Tamil Nadu. D) Haryana

10.Mulberry silk is primarily produced by feeding silkworms with the leaves of which plant? [ ]

A) Oak B) Bamboo C) Mulberry D) Teak

11.Tasar silk is produced from silkworms that feed on the leaves of which type of tree? [ ]

A) Mulberry B) Oak C) Bamboo D) Teak.

12.Eri silk is often referred to as: [ ]

A) White silk B) Peace silk C) Golden silk D) Mulberry silk

13.Which stage of the silkworm life cycle involves spinning a silk cocoon? [ ]

A) Larva B) Pupa C) Egg D) Adult

14.What is the ideal temperature range for silkworm rearing during the larval stage?[ ]

A) 5-10°C B)20-30°C C)) 35-40°C D)50-60°C

15.Which of the following is a critical factor in the successful rearing of silkworms? [ ]

A) Bright light B) High humidity C) Dry conditions D) Low temperatures

16.What is the primary diet of silkworms during the larval stage? [ ]

A) Seeds. B) Fruits. C) Mulberry leaves. D)Roots

17.What is the optimal temperature range for silkworm egg incubation [ ]

a) 10-15°C. b) 20-25°C. c) 30-35°C. d) 40-45°C

18.During the incubation period, what is a crucial factor for maintaining silkworm eggs? [ ]

a) Humidity. b) Light exposure. c) Soil composition. d) Air pressure

19.How long does the incubation period typically last for silkworm eggs? [ ]

a) 2-4 days. b) 7-10 days. c) 14-21 days. d) 30-35 days

20..What is the primary cause of the disease known as "flacherie" in silkworms? [ ]

a) Fungal infection

b) Bacterial infection

c) Viral infection

d) Parasitic infestation

NOVEMBER - 2022.

నెల .....
సంవత్సరము.....

Pupils Attendance Register

పిల్లల హాజరుపట్టి

రోజుల సంఖ్య .....
సగటు హాజరు .....

తరగతి .....
సెక్షన్ .....

1	2	3	4	5	6	7	8	9

అడ్మిషన్ నెంబరు	వ. నెం.	పేరు	కులము	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	హాజరైన దినములు బాలురు	హాజరైన దినములు బాలికలు	పుట్టినతేది	ప్రమోషన్ లేక చేరిన తేది	రిమార్కులు సంతకం
		ALAMGATTI KAVYA		P	P	P	P	P		P	P	P	P	P	a	P	P	P	P	P	P	a	P	P	P	P	P	P	P	a	P	P	P	P					
		B.K SWETHA		P	P	a	P	P		P	P	P	P	P	P	a	P	P	P	P	P	P	a	P	P	P	P	P	a	P	P	P	P	P					
		BANDA PRASANNA		P	P	P	P	P		P	P	P	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	a	P	P	P	a	P					
		C. KAVYA		P	P	P	P	a		P	P	P	P	P	P	P	P	P	a	P	P	P	P	a	P	P	P	P	P	a	P	P	P	P					
		DEVARINTI NATARAJ SONIYA		P	P	P	P	P		P	P	P	P	a	a	P	P	P	P	P	P	P	a	P	P	P	P	P	P	P	P	P	P	P					
		GODUGUCHINTHA DIVYA		a	P	P	P	P		P	P	P	P	P	P	a	P	P	a	P	P	P	P	a	P	P	P	P	P	a	P	P	P	a					
		GUNDLURI VIJAYAVANI		P	P	P	P	P		a	P	P	P	P	P	P	P	a	P	P	P	P	P	a	P	P	P	P	P	a	P	P	P	P					
		JANAKI RAMAIAH GARI MOUNIKA		a	P	a	P	a		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		K SWAPNA		P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	a	P	P	P	P	P	P	P	P	P	a					
		K THILAK		P	P	P	P	P		P	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	a					
		KALIKIRI BHAVYA		P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	a					
		KOTTHAPALLI SUPRIYA		a	P	a	P	P		P	P	P	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		M. GUNASEKHARI		P	P	P	P	P		P	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		P. ABUBAKAR SIDDIQ		P	P	a	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		RAMBE YAMINI		P	P	P	P	P		P	P	P	P	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		S. POOJITHA		P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		SHAIK GHOUSIYA		P	P	a	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		THALARI POOJITHA		a	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		THUMMALA REDDEMMA		P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		V. SNEHA		P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		V. SURYA CHANDRA PRAKASH		P	P	P	P	P		P	a	P	P	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		BUKYA DIVYA		P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		D. PAVITHRA		P	P	P	a	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		IRALA SOWMYA		P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		KOTHAPALLE NITHIN		P	a	a	P	P		P	a	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		MUDE NAGAMANI		a	P	a	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		PULIKANTI SURESH		P	P	a	P	P		P	P	P	P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		R. MAHESWARI		P	a	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		S. NAGAVENI		P	P	P	P	P		P	a	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					
		SHAIK UMMI SALMA		P	a	a	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P					

ఉదయము బోధకుడు : బాలురు ☐ బాలికలు ☐	
ఉపాధ్యాయుని సంతకం	
సాయంత్రం బోధకుడు : బాలురు ☐ బాలికలు ☐	
ఉపాధ్యాయుని సంతకం	

పాఠశాల పనిచేసిన దినములు

క్లాస్ టీచర్

హెడ్ మాస్టర్

Department of Zoology

Certificate course on Sericulture

Student Enrolment list:

S.No.	Name of the Student	Group	Class/ Year	Signature
1.	A. KAVYA	III BZC	III B.SC	A. kavya
2.	BK. Swetha	III BZC	III B.SC	B.K. Swetha
3.	B. prasanna	III BZC	III BSC	B. Prasanna
4.	C. Kavya	III BZC	III BSC	C. Kavya
5.	DN. Soniya	III BZC	III B SC	D. N. Soniya
6.	G. Divya	III BZC	III BSC	G. Divya
7.	G. Vijaya Vani	III BZC	III BSC	G. Vijaya Vani
8.	J. Mounika	III BZC	III BSC	J. Mounika
9.	K. Swapna	III BZC	III BSC	K. Swapna
10.	K. Thilak	III BZC	III BSC	K. Thilak
11.	K. Bhavya	III BZC	III BSC	K. Bhavya
12.	K. Supriya	III BZC	III B.Sc	K. Supriya
13.	M. Gunasekhari	III BZC	III BSC	M. Gunasekhari
14.	P. Abubakar Siddiq	III BZC	III BSC	P. Abubakar Siddiq
15.	R. yamini	III BZC	III BSC	R. yamini
16.	S. poojitha	III BZC	III B.SC	S. Poojitha
17.	S. Gousiya	III BZC	III B.Sc	S. Gousiya
18.	T. poojitha	III BZC	III B.Sc	T. Poojitha
19.	T. Reddemma	BZC	III B.Sc	T. Reddemma
20.	V. Sneha	BZC	III B.SC	V. sneha
21.	V. Suriya chandra prakash	III BZC	III BCs	V. surya chandra
22.	B. Divya	BZC	III BSc	B. Divya
23.	D. pavithra	III BZC	IV BK	D. Pavithra
24.	I. Soumya	III BZC	III B.Sc	I. Soumya
25.	K. Nithin			

26.	M. Nagamani	III BSC	BSC	M. Nagaveni
27.	P. Suresh	III B.Sc	III BSc	P. Suresh
28.	R. Maheswari	III BSC	III B.Sc	R. Maheswari
29.	S. Nagaveni	III BSC	III. B.Sc	S. Nagaveni
30.	S. Ummi salma	III BSc	III BSc	S. Ummi Salma

Feedback form:

Course feedback form:

1.Were objectives of the course clear to you

1)Yes 2). No

2.The course contents met your expectations

1) Yes 2) No

3.The level of the course was

1) Good 2)Not Good

4.The contents were illustrated with

1) More examples 2) Few examples

5.The course exposed you to new knowledge and practices

1) Agree 2) Not agree

6.Will you recommend this course to your next Batch

1) Yes 2) No

Critical Analysis Report:

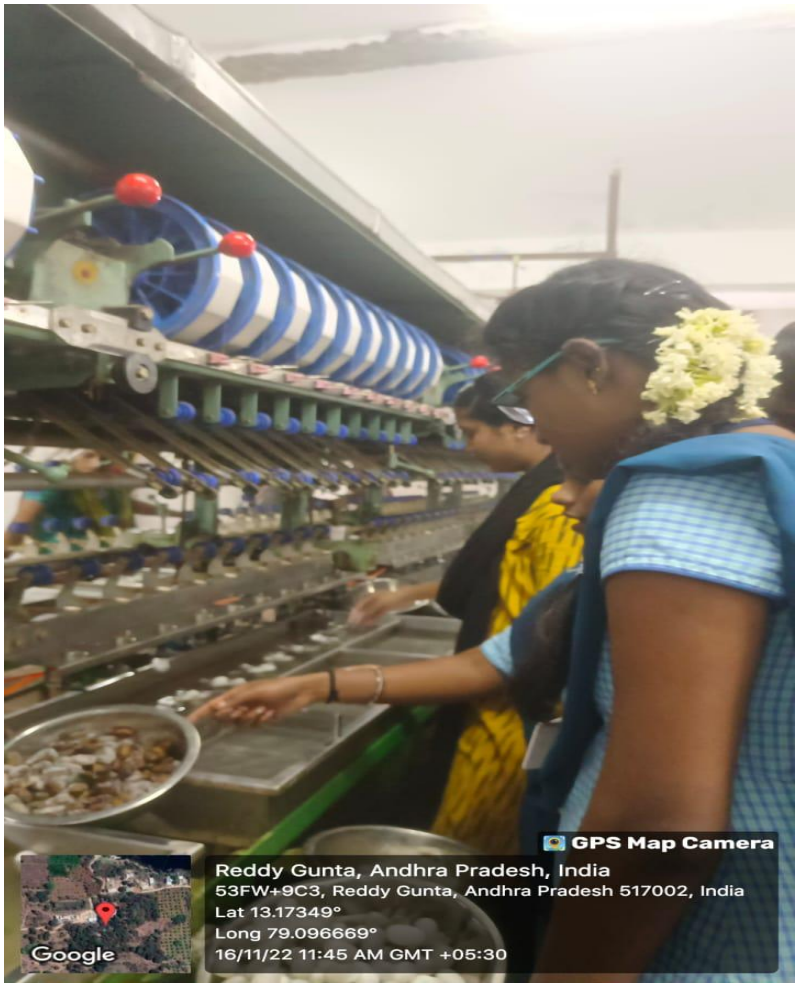
The Department of Zoology has been conducted a certificate course (Institutional Permission) on “SERICULTURLE “from 01-11-2022 to17-12-2022 with the minimum duration of 30 hours. According to the IQAC and Principals instruction the course have been started the feasibility and convenient of the hours for this academic year. The total students 30 were registered for this course and completed as per the schedule. The objective of the course was fulfilled by acquiring of Sericultrure .

Outcomes of the Course:

1. Students can able to understand Sericulture
2. Students can able to basic knowledge on sericulture
3. Students can able to Imparting basic knowledge in the organic farming
4. Students can able to equip the candidates to meet the demands by self-farming
5. Students can able to be aware of the personal and environmental effects of chemical fertilizers

Hence, the certificate course is very useful to B.Sc., Students on Sericulture. The feedback from students were collected and analysed. All the students from Sericulturshowed interest to do such type of Certificate course and to continue it for further years also.

Field trip photos at EESHAN SILKS


GPS Map Camera
Reddy Gunta, Andhra Pradesh, India
53FW+9C3, Reddy Gunta, Andhra Pradesh 517002, India
Lat 13.17349°
Long 79.096669°
16/11/22 11:45 AM GMT +05:30
Google


GPS Map Camera
Reddy Gunta, Andhra Pradesh, India
53FW+9C3, Reddy Gunta, Andhra Pradesh 517002, India
Lat 13.173696°
Long 79.096718°
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Google


GPS Map Camera
Reddy Gunta, Andhra Pradesh, India
53FW+9C3, Reddy Gunta, Andhra Pradesh 517002, India
Lat 13.173573°
Long 79.09661°
16/11/22 11:41 AM GMT +05:30
Google

PVKN GOVERNMENT COLLEGE

(An Autonomous Institution)
(Accredited at 'A' Grade by NAAC)
Vellore Road, **CHITTOOR - 517 002.** Andhra Pradesh

Certificate

This is to certify that

_____

has successfully completed *the "Sericulture "* Certificate course offered by

Department of Zoology, PVKN Government College (A), Chittoor

*From*_____ *to*_____

having passed the examination in the prescribed

theory and practical subjects.

Controller of Examinations

Principal