Field Report on visit TO Debra Sericulture Complex, Debra

Date = 10/08/23
Time = 10:30 am

Subject - Zoology(H)
Paper - SEC-2 (sericulture)
Roll- 112411H No- 2100/8
Reg. No- VU2110/2646 of 2021-22

Acknowledgement

I would like to express my special thanks to my Sericulture teacher "miss. Anjita chakraborty" for their able guidance & support in completing my report.

I would also like to extend my gratitude to the Extension officer "Bhawani Samanta" for providing me with all the information that was required.

Date-
28.08.23

28.08.23

Names of Stuents

(1) Arup Dua
(2) Atanu Bera
(3) Chiranjib Patra
(4) Debinda Bera
(5) Mounita Pal
(6) Prajyut Panjit
(7) Priyanka Hait
(8) Sajan Das
(9) Subhankar Kamilya
(10) Sumana Bera
(11) Debasis De
(12) Sangita Das

Teacher/Guide

Prof. Arpita Chakraborty
(HOD)

Demonstrator

Bhawani Samanta
(Extension officer)

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SERICULTURE

Introduction :- Commercially rearing of silk producing silkworm is called 'Sericulture'. It is an agro based cottage industry comprising three main components -

(i) Cultivation of food plants.
(ii) Rearing of silkworm.
(iii) Reeling & spinning of silk.

Sericulture & silk industry is an avocation in India at least the secony century B.C. many research institute spread across India are engaged in coming up with new technologies to enhance sericulture.

History of Sericulture - Silk was discovery by xilingji, wife of China's 3rd emperor, Huangdi, in 2640 BC. It is believe that while making tea, xilingji accidently dropped a silkworm cocoon into a cup of hot water & foury that the silk fiber could be loosely & unwound. Fibers from several cocoons could be twisted together to make a thread that was strong enough to be woven into cloth. Thereafter, Hisling cui discovered not only the means of raising silk worms, but also the manners of reeling silk and of employing it to make garments.

Mulberry Plant

Systematic Position =

Phylum – Arthropoda
Class – Insecta
Order – Lepidoptera
Super-family – Bombycoidea

Biology of Silkworm =

The insecta producing mulberry silk is a domesticate variety of silk-worm. which has been exploit for over 4000 years. All the strains bearg at present belong to the species Bombyx mori that in believed to be derived from the original manjrina silk worm, Bombyx manjrina Silkworm, Bombyx manjrina Moor. China in the native place of this silk worm, but now it has been introduced in all the silk producing countries like Japan, Syria, Korea, Italy etc.

Body Feature =

It has a rough, wrinkled, hair-less & yellowish white or greyish worm like body. The full grown larva is about 6.00 - 8.00 cm in length. The body of larva is distinguishable into a prominent head, distinctly segmented thorax & elongate abdomen. The head bears manjibulate mouth

East

Morphology = External morphology of Bombyx mori =

The body is distinctly divisible into three regions viz.. head, thorax & abdomen. The head possesses a pair of compound eye. A pair of antennae. The females have smaller antennae & mouthparts with a long proboscis.

The eggs are small, oval & usually slightly yellowish in colour.

Diet - Silk producing mulberry Silkworm feed on mulberry leaves.

Tasar Silkworm feeds on 'Arjuh'.

Moga silkworm feeds on 'Som, Soalu'.

Eri Silkworm feeds on 'Castor' leaves.

Vianty silkworm feeds on oak. ~~Attacus atlas~~

Habit = The silkworm ingest mulberry leaves for food; not only because they are edible but also because after eating this plant. the silkworm can obtain the ~~nutrients~~ needy for its growth. & the ~~individual~~ can fully develop & reproduce offspring.

Chanyhaki

Habitat = Silkworm prefer to lay their eggs on the leaves of mulberry trees. Because domestic silkworms no longer live in the wild, they live in man maye habitats. They enjoy an ambient temperature between 18-25°C. wild silkworms can mostly be found in China, India, South America & Africa.

Types of Silkworm heard in India =

General Name	Scientific Name	Host Plant	Nature
Mulberry Silkworm	Bombyx mori	Mulberry	Monophagous insect which is a caterpillar of a silk moth. Domesticated larva.
Tasar Silkworm	Antheraea Papuia	Asan, Arjun	The tasar larvae are stout & smooth & have rudimentary scoli.
Muga Silkworm	Antheraea sp.	Asan, Arjun	They are mostly wild with a single species with little variation.
Eri Silkworm	Attacus sp.	Asan, Arjun	They are multi-voltine in nature.
Giant Silkworm	Attacus atlas.	Asan Arjun	They are medium to very large moths with stout, hairy bodies & feathery antennae.

Rearing bed / Chawki:

Life cycle = Life cycle of silk worm consist of four stages i.e — adult, egg, larva & pupa. The duration of life cycle is six to eight week depending upon racial characteristic & climate condition. multi voltine races found in tropical areas have the shortest live cycle with the egg, larva, pupa & adult stages lasting for 9-12 days, 20-24 days, 10-12 days & 3-6 days. Respectively 7-8 generation are produced in multi voltine races.

Rearing Process = Silk worms must be reared with utmost care since they are susceptible to disease. Therefore to prevent disease, good sanitation method are hygienic rearing techniques must be followed. The appliances and the rearing room should be thoroughly cleaned & disinfected with 2-4% formaldehyde solution. Room temperature should be maintained around 25°C.

Use of Silk = (i) Clothing = Silk's absorbance makes it comfortable to wear in warm weather & while active.

(ii) Furnishing = Silk's attractive texture & drape makes it suitable for many furnishing applications.

Rearing Stany

(iii) Industry = Silk has many industrial & commercial uses. such as in parachute & Racing car tires.

(iv) Medical Uses = A special manufacturing process remove the outer sericin coating of silk which makes it suitable as non absorbable surgical sutures.

Silk Production = The larval growth is marked by four moulting stage & five instar stages. The full grown Caterpiller develop silk glary.

In larval stage the larva secrete secretion of silk glory & they move their head in '8' like sequence & make cocoons. The silk glays secretion when come in contact with air it becomes hard & now it is called silk.

Prospects = (i) High employment potential particularly in rural areas.

(ii) Low gestation. low investment & high returns.

(iii) Eco friendly activity.

(iv) women friendly occupation.

(v) Important agro based cottage industry.

Mature larva/4th stage

Common disease =

Disease name	Causative agent	Symptoms
(i) Pebrine	Sporozoa – Nosema bombycis	(i) The larva may die before hatching. (ii) The larva shows black spot. (iii) The egg laying capacity becomes poor.
(ii) Flacherie	Bacteria & virus Streptococci sp.	(i) The digestive Physiology disturbed. (ii) Diarrhoea, vomiting. Shrinkage of larval body. (iii) The larva losses appetite.
(iii) Grasserie	virus – Borrelina sp.	(i) The larva become inactive (ii) Skin becomes tender & 'pus' come out from the skin.
(iv) Muscardine	Fungus – Beuveria bassiana	(i) Body loses elasticity & they cease to move & finally die. (ii) Becomes feeble & die.

Pest of Silkworm =

Name	Damage	Prevention
(i) Beetle	The eat the pupae & often egg.	Cleaning of the rearing house.
(ii) Ants	Attack in rearing stage.	Ash on kerosene is put at the margines of Chandrakis
(iii) Lizards	Feed on Silkworm	use insecticide
(iv) Birds	Feed on Silkworm	use of net all the open area in room
(v) Rats	Feed on silk worm.	Squirrel trapping could be carry.

~~Aspects of Sericulture~~

Importance of Deoha Sericulture :- (i) Deoha sericulture complex is involve in producing disease free layings & supplying them to farmers who want to do sericulture.

(ii) They give training regarding how to rearing silkworm & how to cultivate mulberry plant.

Reference :-

- Deoha Sericulture complexes Extension officers who give information.
- KCS - iii
- Information from Prof. Arpita Chakraborty

28.08.2023

VIDYASAGAR UNIVERSITY

Reg No.- VU2110126511 of 2021-22

Roll- 1124114 No- 210020

Sericulture

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Date - 12/8/2023

Chiranjib Patra

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Page no.

Name of Students

1) Chiranjib Patra
2) Debashis De
3) Arup Dua
4) Atanu Bera
5) Gobinda Bera
6) Moumita Pal
7) Priyanka Hait
8) Bradyut Pandit
9) Shibsankar Komillya
10) Sangita Das
11) Sayan Das
12) SK Rabiul
13) Sumana Bera

Teacher / Guider of College

Prof. Arpita Chakraborty (HOD)

Demonstrator =

Bhawani Samanta (Extension officer)

SERICULTURE

Introduction—

Commercially rearing of Silk producing Silk worm is called Sericulture.

It's have three main components.

i) Cultivation of food plants
ii) Rearing of Silkworm
iii) Reeling & Spinning of Silk.

History of Sericulture—

Silk was discovered by Xilingsi, wife of China's 3rd emperor, Huang di, in 264 BC. It is believed that while making tea, xilingsi accidently dropped a Silkworm cocoon into a cup hot water & found that the Silk fiber could be loosen & unwound. Fibers from several cocoons could be twisted together to make a woven into cloth.

Systematic Position—

Phylum → Arthropoda
Class → Insecta
Order → Lepidoptera
Super-family → Bombycoidea

Biology of Silkworm—

The insecta producing mulberry silk is a domesticated variety of silkworm. which has been exploited for over 400 years. All the strains reared at present belong to the species Bombyx mori that is belived to be derived original Silk worm.

Fig- Silkworm

Body Feature :-

It has a rough, wrinkled, hair less & yellowish white or greyish worm like body. The full grown larva is about 6.00 - 8.00 cm in length. The head bears mandibulate mouth.

Morphology :-

External morphology of Bombyx mori, The body is distinctly divisible into 3 regions, head, thorax & abdomen.

The eggs are small, oval & usually slightly yellowish in ~~clo~~ colour.

Diet :-

Tasar Silkworm feeds on Arjuli
Muga Silkworm feeds on Som, soulu
Eri Silkwormfeeds on castor leaves.
Grandy Silkworm feeds on oak.

Habit :- The Silkworm ingest mulberry leaves for food, not only because they are edible but also because after eating this plant needed for its growth & develop.

Types of Silkworm heared in India :-

Name	Scientific Name	Host Plant	Nature
1) mulberry Silkworm	Bombyx mori	mulberry	monophogous insect which is cutterpiller of Silkmoth.
2) Tasar Silkworm	Anthera paphia	Asor, Arjun	Its are stout & smooth & have mentary spot
3) Muga Silkworm	Antheraea sp.	Asor, Arjun	They are mostly wild with a single species

Fig- Silkworm-এর গুটি চিত্র

ডেবরুং Sericulture complex

Life cycle

Life cycle of Silk worm consist of — this stages — adult, egg, larva & pupa. The duration of life cycle is Six to eight week depending upon Characteristic & climate condition. The egg, larva, pupa & adult stages lasting for 9-12 days, 20-24 days, 10-22 days & 3-6 days.

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Silk worms must be reared with almost care since they are susceptible to disease. Therefore to prevent disease, good, sanitation method are hygienic rearing techiques, must be followed.

Use of Silk

i) Clothing — Silks absorbance making it comfortable to wear in warm weather & while active.

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Prospects

i) High employment potential particularly rural area
ii) Eco friendly activity.
iii) Women friendly occupation.

Disease of Sericulture

Disease	Causative agent	Symptoms
i) Pebrine	Sporozoa - Nosema bombycis	i) Larva may be die before pupating. ii) The larva shows black spot.
ii) Flacherie	Bacteria & virus - Streptococcus sp.	i) Digestive physiology disturbed. ii) Larva losses appetite
iii) Grasserie	Virus - Borrelina sp.	i) Larva become inactive ii) Skin becomes tender & 'pus' come out from the skin

Pest of Silkworm

Name	Damage	Prevention
i) Beetle	The eat the pupae & often egg.	cleaning of the rearing
ii) Ants	Attack in rearing stage	Ash or kerosene is put at the handles of Chandrakis.
iii) Lizards	Feed on Silkworm	Use insecticide
iv) Rats	Feed on Silk worm	trapping could be carry.

Date- 9/8/23 (9)

Importance of Debra Sericulture

1) Debra Sericulture Complex is involves in producing disease free laying & Supplying them to farmers who want to do Sericulture.

11) They give training them to rearing to cultivate mulbery plant.

Date- Chiranjib Patra
Signature of Student

12.08.2023
Signature of Teacher

VIDYASAGAR UNIVERSITY

LABRATOR NOTE BOOK ON ZOOLOGY

ROLL :- 112414. NO-210033

REG. NO :- VU2110126670F2021

SEMESTER- IV

PAPER - SEC-II

INDEX

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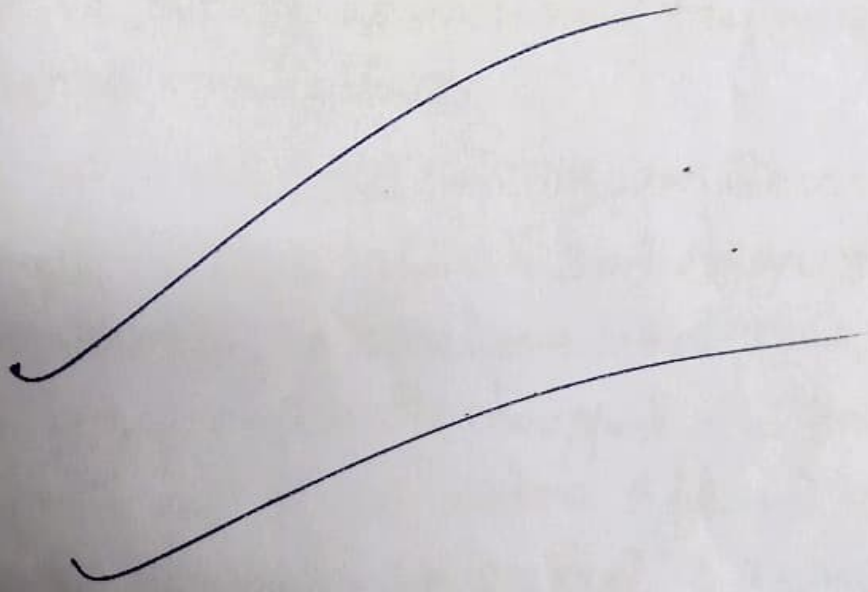
8) Priyank Heit
9) Sangita Das
10) Sayan Das
11) Shibsankar Kamilya
12) Sumana Das

Teacher / Guide

Prof. Arpita Chakraborty
(HOD)

Demonstrators

Bhawani Samanta
(Extension officer)



SERICULTURE

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* Systematic Position :-

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Class – Insecta
Sub-class – Pterygota
order – Lepidoptera
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Saturniidae (Non-mulberry sp.)

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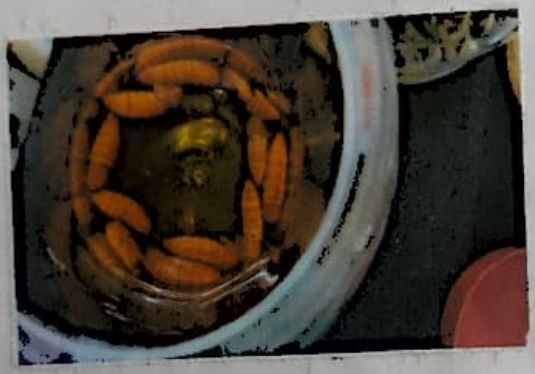

Pic :- Larval Phase

The full grown larva is about 6.00 - 8.00 cm in length. The body of larva is distinguishable into a prominent head, distinctly segmented thorax & elongated abdomen. The head bears mandibulate mouth.

* Morphology :- External morphology of Bombyx mori. The body is distinctly divisible into three regions - viz. head, thorax & abdomen. The head possesses a pair of compound eye. A pair of antennae. The female have smaller antennae & mouthparts with a long probocis.

The eggs are small, oval & on usually slightly yellowish in colour.

Diet :- Silk producing mulberry silkworm feed on [illegible].

Tasar silkworm feeds on 'Arjun',
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Habit :- The silkworm ingest mulberry leaves for food. not only because they are edible but also because obtain eating this plant. The silkworm can obtain the nutrients needed for its growth, & the individual can fully develop & reproduce offspring can fully develop & reproduce offspring.

pie-norious cocoons

Habitat :- Silkworm prefer to lay their eggs on the leaves of mulberry trees. Because domestic silkworms no longer live in the wild. They live in man made habits. They enjoy an ambient temperable between 18-25°C. Wild Silkworms can mostly be found in China, India, South America & Africa.

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Muga Silkworm	Antheraea sp	Asan Arjun	They are mostly wild with a single species with little variation.
Eri Silkworm	Attacus sp.	Asan Arjun	They are multi-voltine in nature.
Giant Silkworm	Attacus atlus	Asan Arjun	They are medium to very large moths with stout, hairy bodies & feathery antennae.

Pic :- Rearing procesing

Life cycle :- life cycle of silk worm consist of ~~some~~ four stages ie- adult, egg, larvae and pupa. The duration of life cycle is six to eight week depending upon special characteristic & climate condition. Multi voltine races found in tropical areas have the shortest live cycle with the egg, larva, pupa & adult stages lasting for 9-12. Respectively 7-8 generation are produced in multi voltine races.

Rearing process :- Silk worms must be reared with almost care since they are susceptible to disease. Therefore to prevent disease good, sanitation method are hygenic rearing techniques must be followed. The antianees and the rearing room should be throughly cleaned & disinfected with 2-4% formaldehyte solution. Room temparature should be maintained around 25°C.

House of silk :- i) Clothing :- Silks obsorbance makes it comfortable to wear in warm weather & while active.

ii) Furnishing :- Silks attractive custure & drape makes it suitable for many furnishing application.

fig: cocoon

iii) Industry :- Silk had many industrial & commercial uses. Such as in parachute & racing car tire.

iv) Medical cases :- A special manufacturing process remove the outer sericin coating of silk which makes it suitable as non absorbable surgical sutures.

Silk production :- The larval growth is marked by four molting stage & five instar stage. The full grown caterpiller develop silk gland.

In larval stage the larva secrete secretion of silk gland & they move their head in '8' like sequence & make cocoon. The silk glands secretion when come in contact with air becomes hard & now it is called silk.

Prospects :- i) High employment potential particularly in rural areas.
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common disease :-

Disease Name	causative agent	Symptoms
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iii) Grasserie	virus - Borreling sp.	i) The larva become inactive ii) Skin becomes tender & npvs come out from the skin.
iv) Muscar -dine	Fungus - Beuveria bassiana	i) Body loses elasticity & they cease to move & finally die. ii) Becomes feeble & die.

Pest of silkworm :-

Name	Damage	prevention
i) Beetle	The eat the pupae & Oblen eggs.	cleaning of the rearing house.
ii) Ants	Attack in rearing stage.	Ask on Kerosenee is put of the handles of chandrakis.
iii) Lizards	Feed on silkworm	use insecticide.
iv) Birds	Feed on silkworm.	Use of net over all the open area in room.
v) Rats	Feed on Silk Worm	Squirrel trapping could be carry.

pic i Debra sericultme complex

Importance of Debra Sericulture :-

i) Debra sericulture complex is involved in producing disease free layings & supplying them to farmers who want to do sericulture.

ii) They give training regarding how to reared silkworm & how to cultivate mulberry plant.

iii) They give training also in disease of silkworm of in larval stage and mulberry cultivation disease.

iv) Also teach them how to free disease and treatment.

12.08.2023

Examined
Govt. General Degree College
Kharagpur-II, Madpur
Paschim Medinipur-721149

11.09.23

FIELD REPORT ON VISIT TO DEBRA SERICULTURE COMPLEX; DEBRA, PASCHIM MEDINIPUR

DATE :- 10.08.2023
TIME :- 10:30 AM

ROLL :- 1124114 NO :- 210021
REG. NO :- VU2110012652 OF 2021-22
SUBJECT :- ZOOLOGY (H)
PAPER :- SEC-2 (SERICULTURE)

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Date - 10.08.23

Debashis Das
Signature of student

Names of students

1) Debashis De
2) Atanu Bera
3) Chinmoyjib patra
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Biology of silkworm :- The insecta producing mulberry silk domesticated variety of silk worm, which has been exploited for over 4000 years. All the stains reared at present belong to the species Bombyx mori. that in believed to be derived. From the orginal silk worm, china in the most

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Silkworm	Attacus Atlas	Asan Arjun	They are medium to very large moths with stout, hairy bodies & feathery antennae


GOVT OF WB

Life cycle :- Life cycle of silkworm consist of four stages i.e - adult, egg, larva & pupa. The duration of life cycle is six to eight week depending upon characteristic and climate condition. Multi votline races found in tropical areas have the shortest life cycle with the egg, larva, pupa and adult stages lasting for 9-12 days, 20-24 days, 10-12 days and 3-6 days. Respectively 7-8 generation are produced in multi votline races.

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In Larval stage the larva secrete secretion of silk gland and they move their head in '8' like sequence and make cocoons. The silk glands secretion when come in contact with air it becomes hard and now it is called silk.

Prospects :- (i) High empolyment potential particularly in rural areas.
(ii) Low gestation, low investment and high returns.
(iii) Eco friendly activity.
(iv) Women friendly occupation.
(v) Important agro based cottage industry.

Common disease :-

① Pebrine	sporozoa.— Nosema bombycis	(i) The larva may be die before hatching. (ii) The larva shows black spot (iii) The egg lying capacity become poor
② Flacherie	Bacteria & virus streptococci sp.	(i) The digestive physiology disturbed. (ii) Diahrmea, vomiting, shrinkage of larval body. (iii) The larva losses appetite.
③ Grasserie	virus. Borrelina sp	(i) The larva become inactive. (ii) Skin becomes tender and pus come out from the skin
④ Muscardine	Fungus. Beuveria bassiana	(i) Body loses elasticity and they cease to move and finally die. (ii) Becomes feeble and die.

Pest of Silkworm :-

Name	Damage	Prevention
Beetle	The eat the pupae and often egg.	cleaning of the rearing house.
Ants	Attack in rearing stage	Ash on kerrosene is put at the handles of chandrakis
Lizards	Feed on silkworm	Use insecticide
Birds	Feed on silkworm	Use of net all the open area in room.
Rats	Feed on silkworm	Squirrel trapping could be canny.

Important of Debra Sericulture :-

① Debra Sericulture complex is involved in producing disease free layings and supplying them to farmers who want to do sericulture.

② They give training regarding how to reared silkworm and how to cultivation mulberry plant.

Reference :-

- Debra sericulture complexes extension officers who give information.
- KCS-iii
- Information from Prof. Arpita chakraborty.

12.08.2023

Examined
Govt. General Degree College
Kharagpur-II, Madpur
Paschim Medinipur-721149

11.09.23

FIELD REPORT ON VISIT TO DEBRA SERICULTURE COMPLEX, DEBRA, PASCHIM MEDINIPUR

Date and Time of Visit:

10 th August 2023,
09:00 AM – 04:00 PM

REG NO - VU211012662 OF 2021-2022
ROLL NO - 1124114 - 210028
SUBJECT - ZOOLOGY
PAPER - SEC-2 (SERICULTURE)

FIELD REPORT ON VISIT TO DEBRA SERICULTURE COMPLEX, DEBRA, PASCHIM MEDINIPUR.

Date and Time of Visit :

10th August 2023, 09:00 AM – 04:00 PM.

Acknowledgement :

We express our heartfelt gratitude to the Debra Sericulture Complex staff and Managment for granting us the opportunity to visit and learn about Sericulture.

List of Names of Students Visited Along with Name of College Teacher / college Guide :

- Students :

(i) Arup Dua
(ii) Atanu Bera
(iii) Chiranjib patra
(iv) Gobinda Bera
(v) Mournita pal
(vi) Pradyut Pandit
(vii) Priyanka Hait
(viii) Sayan Das
(ix) Shibsankar Kamilya
(x) Sumana Bera
(xi) Debashis De
(xi) Sangita Das.

- College :

- College Guide :

Prof. Arpita Chakraborty

Name and Designation of Demonstrator/ Lecturer of Debra Sericulture Complex:

- Demonstrator / Lecturer : Bhawani Samanta.
- Designation :

INDEX —

Introduction of Sericulture:

Sericulture is the art and science of silk production and it plays a significant role in the textile industry. During our visit to Debra sericulture complex, we had the opportunity to explore the various aspects of sericulture, from the cultivation of silkworms to the production of high-quality silk.

Brief History of Sericulture:

Our tour provided insights into the rich history of Sericulture, dating back to ancient china. We learned how Sericulture spread to different parts of the world and became an integral part of india's heritage.

Systematic position of Silkworm:

Silkworms belong to the phylum Arthropoda, class insecta and order Lepidoptera. We studied their taxonomy and importance in Sericulture.

Biology of Silkmoth

Our visit included an in-depth exploration of silkmoth biology, covering their body features, morphology, diet, habits and natural habitats.

Types of Silkworm Reared in India:

We learned about various silkworm species reared in India, their host plants and the characteristics of the silk they produce.

Life cycle of Silkmoth:

Understanding the complete life cycle of silkmoths from egg to adult was a fascinating aspect of our visit.

Rearing Process of Silkworm:

We were given a detailed overview of the silkworm rearing process including feeding cocoon formation and harvesting.

Uses of Silkworm:

Silkworms are essential for silk production and we discovered their role in creating luxurious fabrics. We also explored other applications of Silkworms.

How Silkworm Produces Silk

Our tour elucidated the silk
ction process within the silkworm
iling the secrets of silk thread formation.

son Diseases and Pests of Silkworm:

were educated about the common
ses and pests that effect Silkworms and
ive prevention methods.

Prospects of Sericulture:

Sericulture holds immense potential in providing livelihoods and contributing to the economy and we discussed its prospects.

Importance of Debra Sericulture complex:

Debra Sericulture complex is a pivotal institution in promoting sericulture and we learned about its crucial role in the industry.

References:

We referred to various sources including academic materials and experts insights to compile this report.

This report encapsulates our enriching experience during the visit to Debra Sericulture complex where we gained valuable knowledge about Sericulture's intricacies and significance.

Acknowledgement

We express our heartfelt gratitude to the Debra Sericulture complex staff and Managment for granting us the opportunity to visit and learn about Sericulture.

12.08.2023

Examined
Govt. General Degree College
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11.09.23

VIDYASAGAR UNIVERSITY

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Paper -

Session - 2021 - 203

SERICULTURE

10/08/2023

Acknowledgement

I would like to express my special thanks to my sericulture teachers "Miss. Arpita Chakraborty" for their able guidance and support in completing my report.

I would be like to extend by gratitude to the extension officer "Bhaswati Samanta" for providing me with all the information that was required.

Date =
12.08.2023

Sk Rabiul

Names of Student

1. Sk Rabiul
2. Sayand Das
3. Shirsankar Kamillya
4. Srobinda Bera
5. Chirayib patra
6. Atanu Bera
7. Pradyut pandit
8. Sumana Bera
9. Arup Dua
10. Debashis De
11. Sangita Das
12. Moumita pal
13. Priyanka Hait

Teacher / Guide

Prof. Arpita Chakraborty
(HOD)

Demonstration

Bhawani Samanta
(Extension officer)

Index


GOVT OF W.B

SERICULTURE

Introduction: commercially rearing of Silk Producing silkworm is called sericulture. It is an agra based industry comprising three main components=

i) cultivation of food Plants.

ii) Rearing of silk worm.

iii) Reeling and spining of silk.

Sericulture and silk Industry in an auction in India at least the second century B.C Buang Institue spread across India are engaged in coming up with new technologies to enhace sericulture.

HISTORY OF SERICULTURE: silk was discovered by with of china's 3rd emparer, Hleangdi. It is believed that while making tea, xigni accidantly drop a silkworm cotton into a cup of hot waters and found that the silktiber could be lossend and unknowned. fibere from a toyod that cowas strong enough to be waven tinto cloth. But also the membranes of peeling silk and of it to make grauents.

COCOONS

FOOD OF SILK WORM: MULBERY LEAVES

SYSTEMATIC POSITION:

Phylum ⟶ Arthropoda
Class ⟶ Insecta
Order ⟶ Lepidptera
super family ⟶ Bombycoidea

BIOLOGY OF SILK WORM: The insects producing mulberry silk is a domesticates variety of silkworm, which has been exploty for over 4000 years. All the strains recorded at present belong to the species Bombyx mori that is believed to be derived from the original mandarina silk worm, Bombyx mandarina silkworm the nature place of this silkworm but new it has been introduce, in all the silkworm producing countries like Japan, India, Korea Italy etc.

BODY FEATURE: It has a rough wrinkled yellow white or greysh worm like body. The full groom larva is about 6.00-8.00cm in length. The body of larva is disting wishe into a prominent head. Distinctly segmented thorax and elongate abdomane.

The head. bears mandibulate mouth.

MORPHOLOGY: External morphology of Bombyx mori
The body is distinctly divided into three regions head, thorax and abdomen. The head process a pair of compound eye. A pair of antnae the females have smaller antennae and mouth parts with a long pross.

The egg are small, oval and usually slightly yellowish in colour.

DIET: Silk producing mulberry silk worm feed mulberry leaves.

Thasar silk worm feeds on 'Arjush'
Muga silk worm feeds on 'castor' leaves
Eri silk worm feeds on som soochy.
Crianly silk worm feeds on oak.

HABIT: The silk worm ingest mulbery leaves for food eat only because they are edible but also because after eating this plant, the silk worm can the nutrients needed for its growth and the individuals can fuly develope and reproduce of spring.

CHANDRINKE

silkworm prefer to lay their eggs on leaves of mulberry trees, Because domestic silkworm no longer live in the wild. They live in man made habitets. They enjoy an ambient temperature between 18-25°c wild silk worms can be found in "china" India etc.

TYPE OF SILKWORM REARED IN INDIA

General name	Scintific name	Host plant	Nature
Mulberry silkworm	Bombyx Mori	Mulberry	Monophogus insect which is cederpiller of silkworm Domestaind larva
Tasar silkworm	Antheraea Papula	Aasur Arjun	The tasar are start and swath and have main menbany seold.
Muga silkworm	Antheran SP.	Asan Arjun	They are mostly wild with a single species with little variation
Erisilk worm	Alacus SP	Asan Arjun	They are multh volting in nature.
Fariant silkworm	Alacus atlas	Asan Arjun	They are medium very large moths with stout, hairy, hades and feathey annenal

LIFE CYCLE: Life cycle of of Silk work consist Of stage.
i.e. adult, egg, larva and pupa. The duration of life cycle is six to eight week depending upon character and climate condition. Multi tolting races found in tropical areas have the adult stages lasting for 9 days, 20-24 days and 3-6 days. Respectebly 9-8 generation are produces in multi voltine rac.

REARING PROCESS: Silkworm must be reared with care since they are susceptible to disease. There for to prevent disease good sanitation method are higenic rearing room should be through cleaned and disinfected with 2.4% formalday are solution. Room temperature should be maintais and around 25 °c.

USE OF SILK: (i) clothing silk rabsantence makes of comfortable to ware in worm weathers and while active.

(ii) Furnishing=

silks attractive cuture and drore make it suitable for many furnishing aplication.

(iii) Industry:

Silk had many industrial and commercial silk sush as in parachute ~~and~~ baching can times.

(iv) MEDICAL USES: Silk has many industrial and commercial uses such as in the outer sericin coating silk which makes it suitable as non absorbable surgical sutures.

(v) SILK PRODUTION: The larvae growth is marked by four moulting stage and five instar stage, The full grown caterpillers develope silk gland.

In larval stage the larvae secrete seen of silk gland and they move their head in 8 like sequence and make coccons. The silk glands secrition when come in contact with air it becomes hand and now it is called silk.

PROSPECTS: (i) High employment potential particularly in rural areas.

(ii) Low gestation low investment and.

(iii) Eco friendly actively.

(iv) women friendly occupation

(v) Important agro based cottage industry.

COMMON DISEASE:

Disease name	Causing agent	Symptoms
Pebrine	Sporozoa – Nosema bombys	i) The larvae may be die before hatching ii) The larva shows blackspot
Flacherie	Bacteria and virus Streptococci sp	i) The digestive physiology disturbed. ii) The larva lose appetite
Grasserie	Virus – Borrelina sp	i) The larva become inactive ii) Skin becomes tender and pus come out from the skin
Muscadine	Fungus – Beuveria bassiana	i) Body lose elasticity and they cago to move and finally die. ii) Becomes feable and die.

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Name	Damage	Prevention
Beetle	The east the pupae and often egg	cleaning of the rearing house
Ants	Attack in rearing stage.	Ash or Creosams Put at the handles of the bedracks
Lizards	Feed on silkworms	Use insecticide
Birds	Feed on silkworm	Use of net at the open area in room.
Rats	Feed on Silkworm	Squirel trapping could be carboy.

IMPORTANCE OF DEBRA SERICULTURE:

Debra Sericulture importance is involved in producing disease to so free rayings of supplying them to farmers who want to go sericulture.

They give training regarding how to record and how to culture mulbery Plants.

12.08.2023