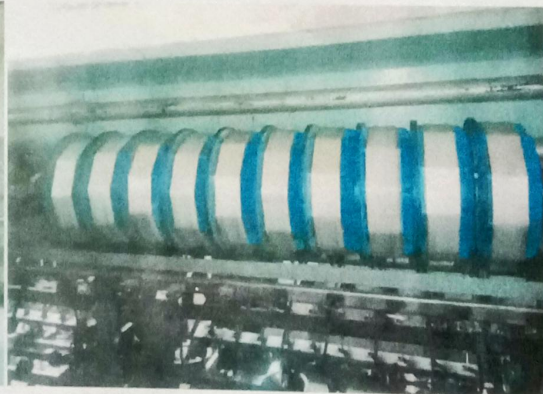


Yashwantrao Chavan College of Science, Karad
MOU Activity 2019-20
REPORT

Name of the activity:	"Visit to Abhilasha silk and silk products, Wathar"
Date and time	Monday, 24-02-2020 10.00 am- 6.00 pm
Name of the department:	Zoology
Purpose of Program	1. To study Silk Production Process 2. To understand various stages involved in silk production, from mulberry cultivation to the finished silk product 3. To understand market trends, consumer preferences, and technological advancements influencing the silk market.
No. of Students Participated	20
No. of Teachers Participated	02
Program outcomes	1. Enhanced Understanding of Silk Production 2. Acquired valuable insights into the dynamics of the silk industry, including market trends, supply chain dynamics, and competitive landscape

Program Photo-



Head of Department
Department of Zoology
Yashwantrao Chavan College of Science, Karad

Principal
Yashwantrao Chavan College of Science, Karad



Estd. 1958

|| Be One with the downtrodden and the underprivileged ||
Shri Shivaji Education Society Karad, Board For Higher Education's

YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

Vidyanagar, KARAD - 415 124 Dist. Satara (Maharashtra)

☎ 02164 - 271356, 271357 e-mail : prinyccsk@gmail.com

UDISE Code - 27310207715

Index No. J 21.02.002

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AN ISO 9001-2015 CERTIFIED COLLEGE REG. NO. : RQ91/5237

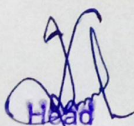
Department of Zoology

Date-24/02/2020

B.Sc-III STUDY TOUR 2019-20

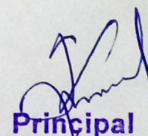
Following are the bonafide students and teaching and non-teaching staff of our college, they are travelling from Karad to Wathar and back.

Sr.no	Student name	Age	Sign
1	Awaghade Vishakha Gorakhnath	21	<u>Aw</u>
2	Chavan shubhada Satyawar	20	<u>Chavns.S</u>
3	Jadhav Poonam Vishnu	20	<u>Jadhav P.V</u>
4	Jagdale sonal Rajendra	20	<u>S.R.Jagdale</u>
5	Jagatap Swapnali Vikas	20	<u>Vikas Jag</u>
6	Kambale Mahesh Ramesh	20	<u>Kambale R.</u>
7	Kothavale Priyanka sunil	20	<u>S.P.K</u>
8	Kumbhar Pushpa Madhukar	19	<u>Pushpa Kumbhar</u>
9	Kumbhar Snehal Vitthal	20	<u>Snehal Kumbhar</u>
10	Kushte Akash Chandrakant	20	<u>Akshate</u>
11	Maskar Pratiksha Janardhan	20	<u>Pratiksha</u>
12	More Vishal Anil	21	<u>More</u>
13	Mulla Rahina Sattar	20	<u>Broulla</u>
14	Nangare Ravina Rajaram	19	<u>Nangare</u>
15	Patel Asifa Shabbir	20	<u>Patel</u>
16	Patil Amruta Pralhad	20	<u>Patil</u>
17	Patil Pooja Tanaji	20	<u>Patil</u>
18	Reur Farananz Mohammad	20	<u>Reur</u>
19	Reur Fareen Mohammad	20	<u>Reur</u>
20	Phatak Monika Pandurang	20	<u>Phatak</u>


Head

Department of Zoology
Yashwantrao Chavan College of Science, Karad




Principal

Yashwantrao Chavan College
of Science, Karad

Yashwantrao Chavan College of Science, Karad
Study Tour - 2019-20
Abhilasha Silk and Silk Products, Wathar.
Feedback form

Name of the Student - Awaghade Vishakha Gorakhnath

Class: B.Sc - III

Roll No. 31

Sr. No.	Programme information points	Excellent (3)	Good (2)	Satisfactory (1)
1	Usefulness of programme		✓	
2	Amount of new information you learned	✓		
3	Overall experience of the programme		✓	
4	Overall organization of the programme			✓

Any other suggestions if any

Date: 24/02/2020

Aves
Signature of Student

Yashwantrao Chavan College of Science, Karad
Study Tour - 2019-20
Abhilasha Silk and Silk Products, Wathar.
Feedback form

Name of the Student: Chavan shubhada Satyawar

Class: B. Sc - III

Roll No. 32

Sr. No	Programme information points	Excellent (3)	Good (2)	Satisfactory (1)
1	Usefulness of programme		✓	
2	Amount of new information you learned	✓		
3	Overall experience of the programme		✓	
4	Overall organization of the programme			✓

Any other suggestions if any.....
.....

Date: 24/02/2020

Chavans
Signature of Student

Yashwantrao Chavan College of Science, Karad
Study Tour - 2019-20
Abhilasha Silk and Silk Products, Wathar.
Feedback form

Name of the Student - जाधव पुनम विठ्ठल

Class: B.Sc - III

Roll No. 33

Sr. No.	Programme information points	Excellent (3)	Good (2)	Satisfactory (1)
1	Usefulness of programme	✓		
2	Amount of new information you learned		✓	
3	Overall experience of the programme	✓		
4	Overall organization of the programme			✓

Any other suggestions if any.....

.....

Date: 24/02/2020

Jaithar P.V
Signature of Student

Yashwantrao Chavan College of Science, Karad
Study Tour - 2019-20
Abhilasha Silk and Silk Products, Wathar.
Feedback form

Name of the Student:.....Miss. Jagadale Sonal Rajendra.....

Class:.....B. Sc - III.....

Roll No.....34.....

Sr. No	Programme information points	Excellent (3)	Good (2)	Satisfactory (1)
1	Usefulness of programme		✓	
2	Amount of new information you learned	✓		
3	Overall experience of the programme		✓	
4	Overall organization of the programme			✓

Any other suggestions if any.....
.....

Date: 24/02/2020

S. R. Jagadale
Signature of Student

Yashwantrao Chavan College of Science, Karad
Study Tour - 2019-20
Abhilasha Silk and Silk Products, Wathar.
Feedback form

Name of the Student - Jagatap Swapnali Vikas.

Class: B.Sc - III

Roll No. 35

Sr. No.	Programme information points	Excellent (3)	Good (2)	Satisfactory (1)
1	Usefulness of programme	✓		
2	Amount of new information you learned		✓	
3	Overall experience of the programme	✓		
4	Overall organization of the programme			✓

Any other suggestions if any.....

Date: 24/02/2020

Vikas Jag
Signature of Student

Yashwantrao Chavan College of Science, Karad

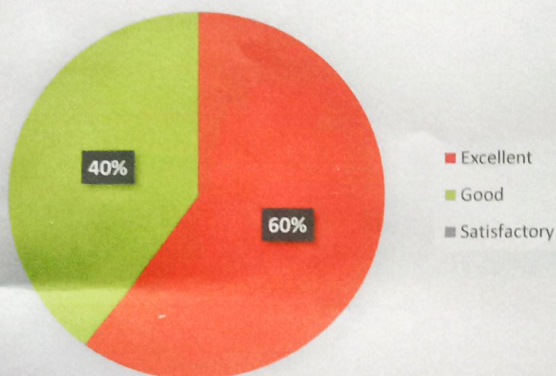
Department of Zoology

Mou Activity-Abhilasha Silk and Silk Products, Wathar.

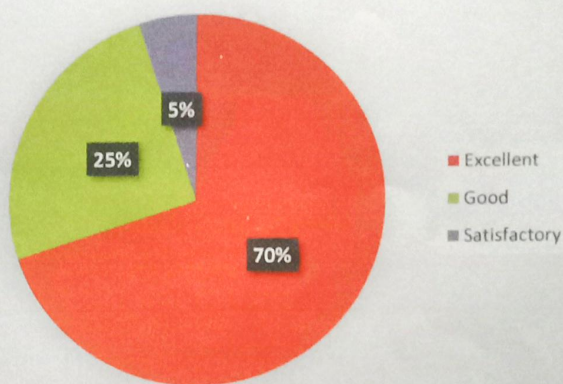
Academic year-2019-20

Feedback Analysis

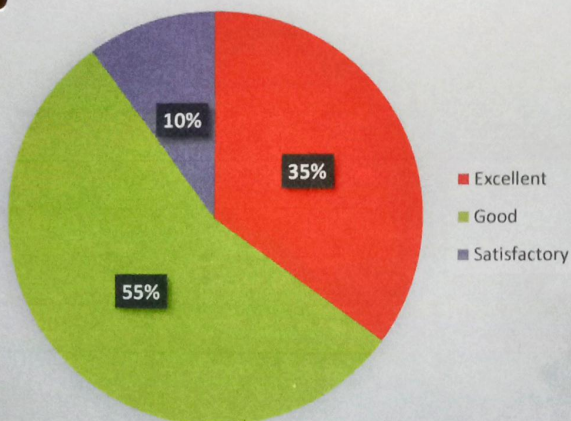
Usefulness of Program



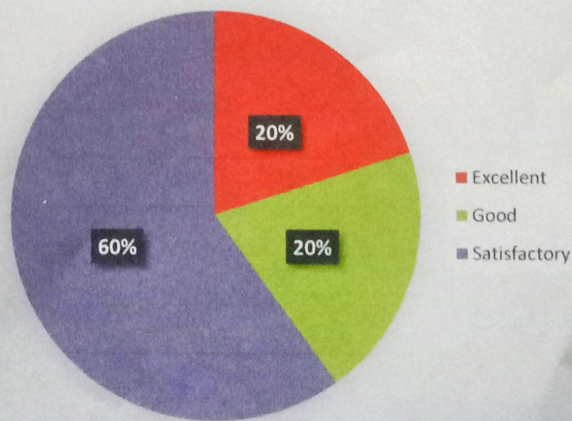
Amount of New Information Learned



Overall Experience of the Program



Overall Organization of the Program



A handwritten signature in blue ink, likely belonging to the Head of the Department of Zoology.

Head
Department of Zoology
Yashwantrao Chavan College of Science, Karad

STUDY TOUR REPORT

SERICULTURE



Exam No. :

LAB / F - 19

Date : 24 / 2 / 20.

YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD



Vidyanagar, Karad - 415 124

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Reg: RQ91/5237



ISO 9001:2008
Quality Management System
Cert. No. 9870



Department of Zoology

CERTIFICATE OF STUDY TOUR

This is to certify that, Mr. / Miss. Mulla Raheena Sattar

(Roll No. 3143) of B. Sc. Part X / II / III of academic year 2019 - 2020

has attended the study tour organized by the department of Zoology

at Abhilasha Silk and silk products, Wathar.

site / Institute / Industries of Educational interest on 24/2/2020.

Bhulla

TEACHER IN - CHARGE

EXAMINER

for Prasad
Head,

DEPARTMENT of Zoology



Index

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2.	Objective	2
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4.	Life cycle	5
5.	Rearing of silkworm	6
6.	Cocoon formation	7
7.	Economic Importance	8

Abhilasha Silk and
Silk products,
Wathar.



Introduction

Sericulture or Silk Farming is the rearing of silkworms for the production of silk. Silk was first produced in China as early as the Neolithic period. Sericulture has become an important cottage industries in countries such as Brazil, China, France, India, Italy, Japan, Korea and Russia.

Today China and India are the two main producers, with more than 60% of the world's annual production.

Sericulture is the cultivation of silk through rearing of silkworm. It is an agro based industry. It involves the rearing of food plants for silkworms rearing of silkworm for production of cocoons, reeling and spinning of cocoon for production of yarn etc for value added benefits such as processing and weaving.

Objective

2

To train the students in identifying the diseases and pests of the mulberry plant. Give to take knowledge about the cultivation of mulberry maintenance of farm, seed technology, silkworm rearing and silk reeling.

To learn about the quality of various things like leaf, seed, cocoon, commercial cocoon and fibre so that they can get maximum return. To learn various skills that are necessary for self employment and seed production. To get employment and job opportunities in public, private and government sectors.

Opticative

CSR-breed



At Sericulture Centre we Observed two Varieties of Silkworms.

1] Mulberry

Silkworms - Bulk of the commercial silk produced in the world come from this variety and of then generally refers to mulberry silk. Mulberry silk comes from the silkworm, *Bombyx mori* L. Which solely feeds on the leaves of mulberry plant.

The silk produced by this silkworm is white or yellow in colour.

1] CSR :- The CSRs has five different breeds viz, CSR-2, CSR-4, CSR-5, CSR-18, CSR-19.

These breeds incubated for 9-12 days at temp 24-25°C.

Eggs :- The eggs are ellipsoidal in shape and grey in colour.

The colour of shell is white in CSR-2, CSR-4, CSR-5 and yellow colour in CSR-18, CSR-19.

Larvae :- The colour of newly hatched larvae was black and haemolymph colour was transparent in all the breeds.

The pattern of larvae was observed plain in CSR-2, CSR-4, CSR-5, and others it was recorded as plain-marbled i.e. CSR-18, CSR-19.

Cocoon :- The CSR breeds were distinctly white in colour CSR-2, CSR-4, CSR-5 and creamish colour i.e. CSR-18, CSR-19. The shape of cocoon is dumbbell shaped in CSR-4, CSR-5, CSR-19. The shape of cocoon is oval shaped in CSR-2, CSR-18.

2] Kolar gold :- This is multivoltine hybrid cross breed.

It is widely accepted by the farmers.

It has high disease resistant power.

The average yield is around 65-70 Kg/100 dis.

It is yellow coloured cocoon.

Its silk is yellow coloured.

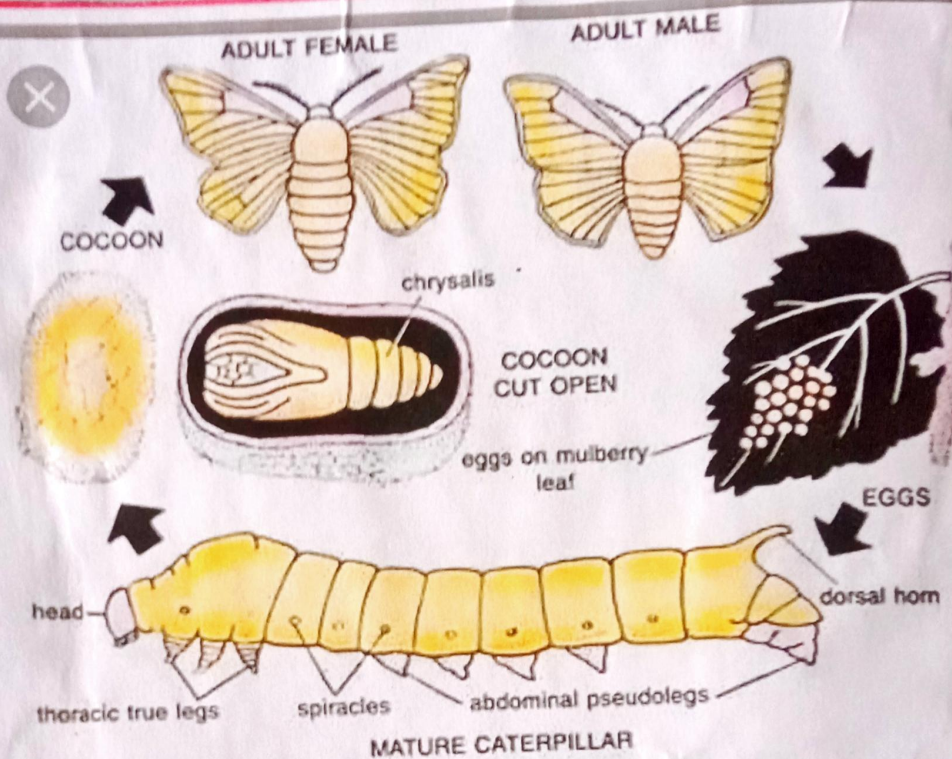


Fig. 78.1. *Bombyx mori*. (Silkworm). Life history.

Life Cycle

Life Cycle

5

Copulation is followed by fertilization which is internal. Metamorphosis is completed. Depending on the type of species the life cycle may take from one month to a whole year.

1] **Egg**:- A single female lays about 300-500 eggs depending on climate and food material. Eggs are small, 1mg weight rounded and are white in colour.

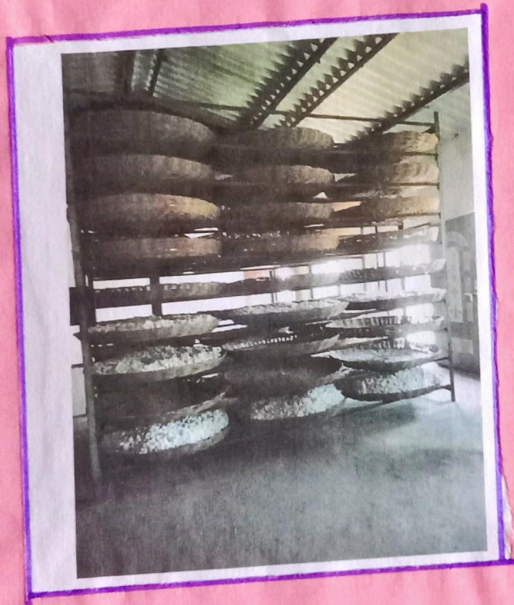
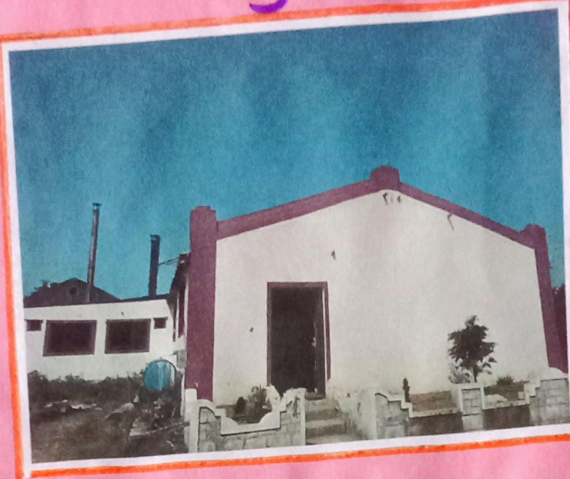
2] **Larva [caterpillar]**:- The egg hatches into a larva a tiny creature called caterpillar. The caterpillar eats mulberry leaves & grows bigger & bigger. It goes through 4 moults.

3] **Pupa**:- The caterpillars stop feeding. It is salivary glands secrete a sticky fluid. The caterpillar spins a cocoon of silk threads arounds it self. Inside the cocoon the caterpillar changes into a pupa.

4] **Adult**:- The pupa finally metamorphosis into the baby insect or Imago. It secretes an alkaline fluid to moisten one end of cocoon. The mouth comes out the cocoon.

The adult moths mate with each other then new cycle begins again.

Rearing house



Storage of Cocoons

Rearing of Silkworm

In this process, silkworms are reared at appropriate temperature & humidity to get silk threads from cocoons.

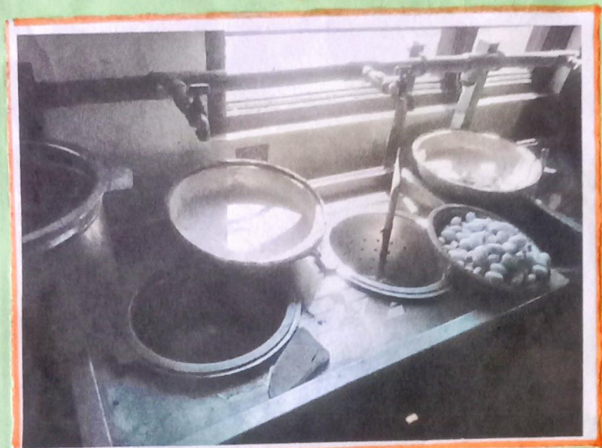
- 1] Machama :- It is the proper place where the silkworms are reared.
- 2] Rearing trays :- These are required for keeping the laid egg along with the mulberry leaves.
- 3] Dalas :- For fetching the mulberry leaves.
- 4] Spinning :- For keeping the caterpillars at the time of full grown stage ready for pupation.
- 5] Chopping Knife :- For cutting the mulberry leaves into smaller pieces.
- 6] Baskets :- For the distribution of mulberry leaves.
- 7] Hygrometer :- To know the % humidity in the atmosphere.
- 8] Thermometer :- To note down the room temp.
- 9] Oven :- To regulate the different stages of life cycle at different temperatures.
- 10] Refrigerator :- For the storage of eggs (seed) next generation.



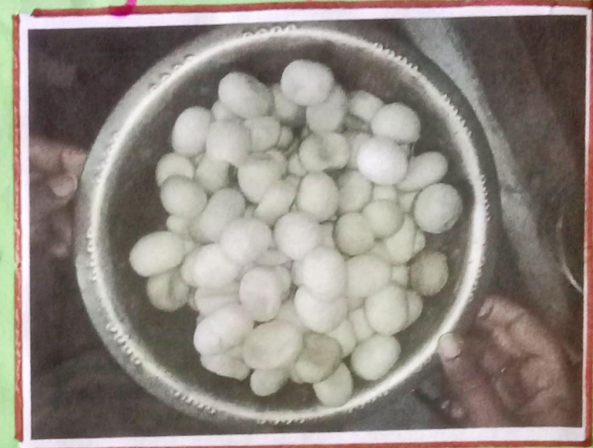
Cocoon



Dryer Machine



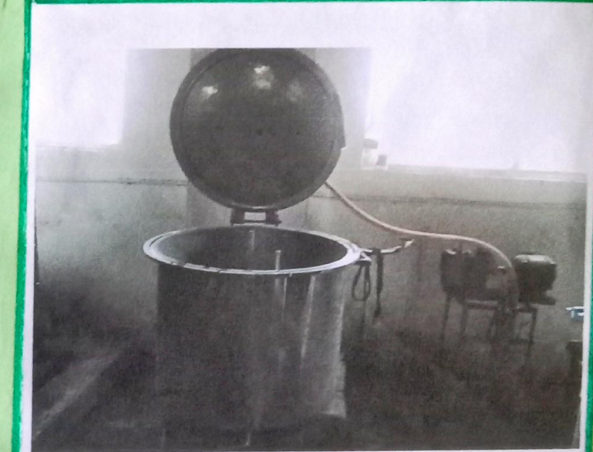
Cooking house



Boiled cocoon



Reeling



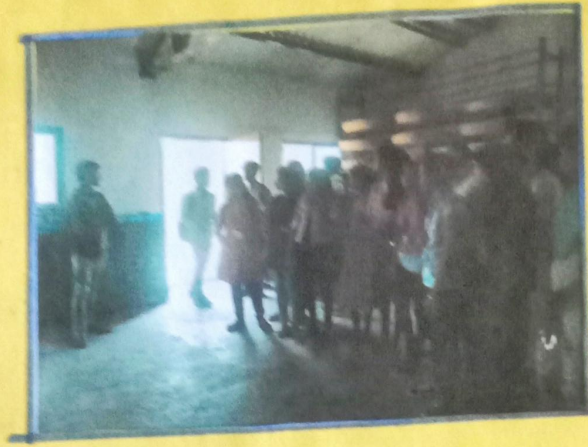
Boiler

Cocoon Formation

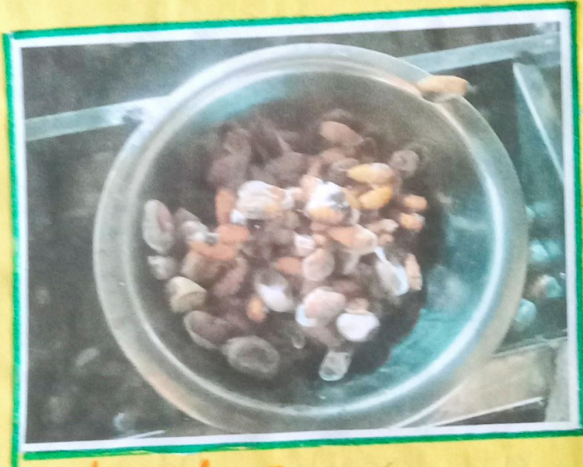
The full growth 5th instar stops feeding after 5-7 days. They appear translucent in colour & shrink in size. Mature silkworm mounted on mount ages now start spinning. The cocoon spinning of cocoon is completed within three days & marks the last phase of silkworm rearing. Pupae inside the cocoons are killed by dryer machine.

The sericin is removed by placing the cocoons in hot water, which frees the silk filaments and readies them for reeling. This is known as the degumming process. The immersion in hot water also kills the silkworm pupae.

Single filaments are combined to form thread. Which is drawn under tension through several guides and wound on to reels. The threads may be plied to form yarn. After drying. The raw silk is packed according to quality.



Instruction



died Pupa



Silk

Economic Importance

- The Silk worm litter is used for bio-gas production and used as a fuel for cooking in the rural area.
- Silk is used in fashionable clothings.
- Apart from silk, there are several other by products from Sericulture.
- The mulberry fruits are rich in minerals and vitamins.
- The pupae are rich in oil and protein used for eating purpose.
- It is used in race cars, in solution coils for telephones.
- It is used in eating purpose.
- It is responsible for making a huge amount of business, be extracting silk, as a raw one, and processing.

^{rc}
Gandals