Sericulture Report 2019-2020

Department of Zoology
Kisan Veer Mahavidyalaya, Wai.
Date: -02 /02/2019.

To
The Principal
Kisan Veer Mahavidyalaya,
Wai - 412803

Subject: - Regarding permission to visit "Sericulture Centre" Wai.

Respected Sir,

As a part of Curriculum of self-funding course in sericulture students of B.Sc. III (Zoology) are visiting the "Sericulture Centre" Wai Saturday on 02/02/2019. List of student participating is enclosed here with. Prof. R. R. Tayade and Prof. Miss. Chorage R.R. will escorts the team.

I therefore, request you to sanction the permission for the same.

Thanking you,

Yours faithfully,

Dr. I.F. Pailwan,
Head, Department of Zoology

Encl : List of students.

Janata Shikshan Sanstha's

Kisan Veer Mahavidyalaya, Wai

Year 2018-2019

Student List - B. SC. Part III

Sr. No	Roll No	Name of the student	Gender
1	79	MANDHARE RUTUJA BHIMRAO	Female
2	80	SHINDE SWATI SHANKAR	Female
3	81	BODARE PRAJAKTA SUNIL	Female
4	82	KADAM JYOTI DATTATRAY	Female
5	83	JADHAV RESHMA SANDIP	Female
6	84	JADHAV NIKITA NITIN	Female
7	85	JAMDADE POOJA PRATAP	Female
8	86	POL KOMAL BALKRISHNA	Female
9	87	DALAVI AKSHADA CHANDRAKANT	Female
10	88	GADHAVE SONALI RAVINDRA	Female
11	89	SAYYAD TABSUM AYUB	Female
12	90	GAIKWAD SURAJ LAXMAN	Male
13	91	POL PRANALI MAHADEO	Female
14	92	PUJARI PRACHI VIDYADHAR	Female
15	138	MASUGADE DIPAK VITTHAL	Male
16	139	JADHAV AKSHAY DIPAK	Male
17	150	PISAL AASHA VISHAWAS	Female
18	168	CHAVAN PRAGATI DATTATRAY	Female
19	169	DABHADE SRUSHTI SANJAY	Female
20	170	PISAL NEHA DHANANJAY	Female
21	171	DABHADE MADHAVI MADHUKAR	Female
22	172	PAWAR APARNA RAMESH	Female
23	212	BHOSALE PRAJAKTA SUNIL	Female
24	217	ANPAT ADITI RAMCHANDRA	Female
25	218	JEDHE AISHWARYA SUNIL	Female
26	257	NAIKWADI PRAJAKTA ASHOK	Female
27	260	RENJAR JYOTSNA KISAN	Female
28	266	CHAVAN POOJA DATTATRAY	Male

Escort:

1. Prof. Tayade R. R:
2. Prof. Miss. Chorage R. R.:

Janata Shikshan Sanstha's

Kisan Veer Mahavidyalaya, Wai

Department of Zoology

Short Term Course

SERICULTURE (2018-19)

Sr. No.	Roll No.	Student Name	Marks			Total	%
			P.I	P.II	Practical		
1	79	MANDHARE RUTUJA BHIMRAO	41	34	33	108	72
2	80	SHINDE SWATI SHANKAR	36	37	39	112	74.667
3	81	BODARE PRAJAKTA SUNIL	41	40	33	114	76
4	82	KADAM JYOTI DATTATRAY	41	40	39	120	80
5	83	JADHAV RESHMA SANDIP	40	41	39	120	80
6	84	JADHAV NIKITA NITIN	26	28	34	88	58.667
7	85	JAMDADE POOJA PRATAP	39	29	35	103	68.667
8	86	POL KOMAL BALKRISHNA	47	35	39	121	80.667
9	87	DALAVI AKSHADA CHANDRAKANT	30	31	32	93	62
10	88	GADHAVE SONALI RAVINDRA	40	35	39	114	76
11	89	SAYYAD TABSUM AYUB	36	36	39	111	74
12	90	GAIKWAD SURAJ LAXMAN	39	28	30	97	64.667
13	91	POL PRANALI MAHADEO	33	33	39	105	70
14	92	PUJARI PRACHI VIDYADHAR	31	33	38	102	68
15	138	MASUGADE DIPAK VITTHAL	32	33	22	87	58
16	139	JADHAV AKSHAY DIPAK	39	33	28	100	66.667
17	150	PISAL AASHA VISHAWAS	36	35	26	97	64.667
18	168	CHAVAN PRAGATI DATTATRAY	39	29	35	103	68.667
19	169	DABHADE SRUSHTI SANJAY	27	29	36	92	61.333
20	170	PISAL NEHA DHANANJAY	27	40	36	103	68.667
21	171	DABHADE MADHAVI MADHUKAR	37	27	36	100	66.667
22	172	PAWAR APARNA RAMESH	36	39	19	94	62.667
23	212	BHOSALE PRAJAKTA SUNIL	28	34	28	90	60
24	217	ANPAT ADITI RAMCHANDRA	32	10	27	69	46
25	218	JEDHE AISHWARYA SUNIL	43	42	35	120	80
26	257	NAIKWADI PRAJAKTA ASHOK	28	28	32	88	58.667
27	260	RENJAR JYOTSNA KISAN	30	33	32	95	63.333
28	266	CHAVAN POOJA DATTATRAY	28	28	-	56	37.333

Janata Shikshan Sanstha's
Kisan Veer Mahavidyalaya, Wai
Department of Zoology
Short Term Course
SERICULTURE (2018-19)

Date: 09/03/2019 Time: 1 Hrs
Total Marks: 30

Instructions:

1) All Questions are Compulsory.
2) Draw diagram wherever necessary.
3) Figures to the right indicate full marks.

Q.1. Answer the following.

1. Identify, mention the diagnostic features and its importance in sericulture. 04

Cocoon

2. Identify and describe. 04

Eggs of silk moth

3. Identify, describe and mention its peculiar features. 04

Caterpillar of silk moth

4. Identify and describe its applications in sericulture industry. 04

Rearing tray

5. Identify and mention its cultivation practice and use in sericulture. 04

Mulberry plant

6. Identify and state its morphological features and role in sericulture industry. 04

Adult moth

7. Identify, and state its significance. 04

Raw silk

8. Identify and state its application in sericulture. 04

Thermometer

9. Identify, sketch and label life cycle. 04

Silk moth

10. Describe the any one type of disease in sericulture industry. 04

Q.2. Submission of a report on sericulture.

Prof. (Dr). I.P. Pathan
PRINCIPAL
KISAN VEER MAHAVIDYALAYA
Wai, Dist. Satara

Kisan Veer Mahavidyalaya, Wai
Department of Zoology
Date: 06/03/2019

Notice:-

All the Students of B.Sc. III are hereby informed that their theory and practical's examination of Certificate course in sericulture is arranged on Saturday, 09/03/2019 as per following schedule.

Date	Title	Time
09/03/2019	Paper. I	10:00 am to 11:00 am
	Paper. II	11:30 am to 12:30 pm
	Practical	12:30 pm to 01:30 pm

Prof. (Dr). I.F. Pathan
PRINCIPAL
KISAN VEER MAHAVIDYALAYA
Wai, Dist. Satara

Head,
Department of Zoology

Department of Zoology
Kisan Veer Mahavidyalaya, Wai (Dist. Satara)

Class: B.Sc. Part – III | Time: 10. 00 - 11. 00
Roll No.: | Marks: 50
Date: 09/03/2019 | Paper - I | Examiner

Que: 1 Select correct option and rewrite in the answer book **10**

1. Rearing silk moth for the production of silk is termed as.....

a) Apicultures b) Sericulture c) Prawn culture d) Lac culture

2. Silk moth belong to class.....

a) Insecta b) Mammalia c) Amphibia d) Reptelia

3. The biggest silk producing country in the world is .....

a) China b) India c) Japan d) America

4. The comments wild silk producing insect is.....

a) Bombyxmori b) Muga c) Tassar d) Eri

5. ..... Humidity is measured by

a) Hygrometer b) Thermameter c) Lactometer d) Milimeter

6. Eri silk moth feeds on ..... plants.

7. Female silk moth lays ..... Eggs.

8. Life cycle of silk moth is completed ..... Days.

9. ..... mouth parts are present in silk worm.

10. Caterpillar of bombyxmori which feeds on.....leaves.

a) Machilas plant c) Custard plant d) Mulberry plant e) Fig plant

Q.2. Answer the following **20**

1. Describe disease cultivation of mulberry
2. Describe morphology of silk moth.

Q.3. Write short notes on **20**

1. Importance of silk
2. Describe types of silk moth
3. Food plant of silk worm
4. Habit and habitat of silk moth

Department of Zoology
Kisan Veer Mahavidyalaya, Wai (Dist. Satara)

Class: B.Sc. Part – III | Time: 11. 30 – 12. 30
Roll No.: | Marks: 50
Date: 09/03/2019 | Paper - II | Examiner

Que: 1 Select correct option and rewrite in the answer book **10**

1.The process of killing the cocoon is called.....

a) Stickling b) Realling c) Rearing d) Spinning

2. The silk thread is composed of five filament of protein called.....

a) Fibroin b) Tublin c) Histone d) Himoprotein

3. Cocoon is secreted by.....

a) I[st] instar larva b)Pupa c) Vst instar larva d) Imago

4. The full grown mature larva of silkmoth is called.....

a) Caterpillar b) Magot c) Wriggler d) chrysalis

5. In following country all four kinds of Mulberry, Tasar, Muga, and Evi silk is produced.

a) China b) Japan c) India d) Korea

6. The domesticated silk worm ..... Is one of the best insect for genetic research.

a) Bombyxmori b) Evi c) Tasar d) none of these

7. Mascardine is a disease of slik moth caused due to ..... .

a) fungi b) bacteria c) insect d) protozoa

8. Following plant is suitable for Bombyxmori feeding.

a) Mulberry b) Acacia c) Neam d) Mango

9. Pebrine disease is caused by a.....

a) Protozones b) Bacteria c) Virus d) Fungi

10. Life cycle of silkworm is divided into.....stages

a) 2 b) 3 c) 4 d) 5

Que: 2. Solve the following. **20**

1. Describe the various diseases in silk industry.
2. Describe the different tools used in sericulture.

Que: 3 Write Short Notes on **20**

1. Describe Disease Pebrine.
2. Disease Muscardin.
3. Explain worm culture.
4. Grainage management.

Department of Zoology
Kisan Veer Mahavidyalaya, Wai (Dist. Satara)

Class: B.Sc. Part – III | Time: 10. 00 - 11.00
Roll No.: | Marks: 50
Date: 09/03/2019 | Paper - I | Examiner

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5. Importance of silk
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8. Habit and habitat of silk moth

Prof. (Dr). I.F. Pathan
PRINCIPAL
KISAN VEER MAHAVIDYALAYA
Wai, Dist. Satara

SERICULTURTURE REPORT 2018-2019

INTRODUCTION

Sericulturture of silk forming is the rearing of silkworms for the production of the silk. Although there are several commercial species of silkworms. *Bombyx mori* is the most widely used and intensively studied silkworms. Sericulture has become one of the most important cottage industries in a number of countries like china, Japan, India, Korea, Brazil, Italy and France.

Today, china and India are the two main procurer's together silkworms larvae are feed by mulberry leaves and after the fourth moult climb a twinge placed near them and spin their silken cocoons. The process is achieved by the worm through a dense fluid secreted from its structural glands resulting in their fiber in the cocoon. The silk is a continuous filaments fiber consisting of fibroin protein secreted from two salivary glands in the head of each larva and a gum called sericin which cements the two filaments together.

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

OBJECTIVES

1) **Sericulture provides suitable silk fiber to manufacture the various kind of gametes**
2) **Sericulture is an excellent cottage industry improving the economic status along with the maintenance of environment equilibrium in rural areas.**
3) **Sericulture industry requires low capital investment it can be dobe with regular forming as a cottage industry.**
4) **Sericulture industry provides employment for men and women from rural area of different age category.**

STUDY SITE

To study sericulture we have visited District Sericulture Centre wai on January 2019. In this centre the government officials have provided us various information regarding the cultivation of mulberry reaeing techniques of silk moth and ideal condition required for the better maintenance of larvae and production of good quality cocoon. Many farmers from satara district. Koregoan taluka have taken the initiave and involved in silk production along with their traditional farming.

CULTI VATION

Mulberry is a hardy plant capable of thieving under a variety of agro climatic conditions. Plants cultivated by "patlamethod" (2×3) ×5 feet and plant population is 100%. It also gives 8metric tons cow dungs manure.

Only cultivates CSB Certified Seeds for planting at the same time, it's also sensitive responding extremely well to optimum agriculture inputs but shows partially no growth. When plant nutrients and moisture begin to operate as limiting factors. This is evident from the fact the poor rainfall conditions of 25-30 (625-750) prevailing in south India the current leaf yield is of the order of only 300-3500 kg per hectore whereas under assured irrigation and appropriate fertilizer Applica nearly ten times. Further mulberry under south Indian conditions, unlike in temperature regions like Japan, Korea, and USSR gives continuous growth almost through the year because of optimum temperature condition and good sunshine available.

SOIL & CLIMATIC CONDITIONS

Mulberry can grow practically on any type of land except on very steep lands. Good growths however are obtained when it's raised on either flat land. Mulberry grows in a wide range of soil, but best growth obtained in 100mg. The mulberry plant can tolerate slightly acidic conditions in the soil with p^h below 5 necessary corrective measure through application of dolomite or lime should be adopted. In case of alkaline soils applications of gypsum should be restored to for correction of the soil mulberry alkalinity since mulberry is a deep rooted plant, the soil should be sufficiently deep up to about two feet in depth. In repect of elevation mulberry thieves well up to about 4000feet above growth will be retared because of the colder.

REARING

The silkworm larvae after 12 to 13 days will be segrreted into various age groups. The larvae at this stage change body color at this stage and do not take any food those worms will be separated and put into a plastic tray covered with papers and wire mesh net. The light yellow colored larvae after taking required amount of feed (after approximately 10-12 days of initiation of larval stage) are ready for cocoon stage are placed on the net. Before placing the cocoons the tray is washed with bleaching powder to protect the worms from infection the cocoons. The cocoon stage is arrived in 5 days.

ECONOMY

Sericulture provides a continuous income throughout the year. An economic analysis of mulberry sericulture farmers was studied, cost and return structure from cross-breed (pure- Mysore $\times C_2R_2$) silkworm rearing was estimated. The study has shown that net returns from one cores of mulberry worked out to Rs 52,206=00/year. The cost benefit ratio of sericulture was worked out to be significantly higher (1:1:94). Detailed study of the economics revealed that the major economics factor contributing for the total cost in structure was labor which was 32.52% for silkworm rearing and 19.95% for mulberry production. Another important they were cost of equipment for silkworm rearing which about 11.27%.

The possibility of obtaining 1,600kg of biotic cocoons from rearing 4000 laying and by producing 30,000 kg of leaves per hector. The cost of leaf and cocoon production and net and Rs 26, 80000 respectively per hectore by using improved technique.

GOVRNMENT FACILITIES

A complete system from egg to silk production at the village level has been developed and popularized in Maharashtra and Karnataka. Advisory services have also been provided to 400 farmers in manadi district through the government of Himachal Pradesh for improving their income. More than 250 families with 163 mulberry plantation received technical guidance and marketing support in collaboration with the directorate of sericulture. Government of Maharashtra whose earning have increases to 1.20 lakh per year from Rs 4,000 to 26,000 from tasser silk and Rs 2500 to Rs 3.5 lakhs from sericulture while generating over 2.7 lakh person days of employment per year 80 landless families in Thane , Pune , Gadhchiroli and Bhandardara districts of Maharashtra are earning in the range of Rs 6000 to 30,000 per year through integrated activates such as taser silkworm rearing , reeling of tasar , cocoons processing of row silk and waving of silk fabrics.

THE STAGES OF PRODUCTION

1) The silk moth lays thousands of eggs.
2) The silk moth eggs hatch and the larvae feed on the mulberry larvae.
3) First it waves a net to hold itself.
4) Next it swings its head from side to side in form of number '8'.
5) The silk solidifies when it comes in contact with to air.
6) The silkworms spin approximately 1 miles of filament and completely enclose itself a cocoon in about two or three days but due to quality restrictions the amount of usable silk in each cocoon is small. As a result 5500 silkworm are required to produce 1kg of silk.
7) The silk is obtained from the undamaged cocoons by brushing the cocoon. To find the outside end of filament
8) The silk filaments are then wound on a reel. One cocoon contains approximately 1,000 yards of silk filament. The silk at thios stage is known as row silk. One thread consists of up to 48 individual silk filaments.

Prof. (Dr.) I.F. Pathan
PRINCIPAL
KISAN VEER MAHAVIDYALAYA
Wai, Dist. Satara

HEAD,
DEPARTMENT OF ZOOLOGY