A Report on Field Trip
Sericulture Unit

Date of Visit: 30-10-2024

Location: Chebrolu, Gollaprolu (M), Kakinada Dt.

Hosts of the Tour:

G.P Chakravarthi- HOD Department of Bio- Technology

G.N.V Satish- Lecturer, Department of Bio-Technology

N. Jessica- Lecturer in Microbiology

Participants: III BtBCA

Total Number of Participants: 30

Our sincere thanks to the Principal of PRGC " Mr. B.V. Tirupanyam" , the IQAC coordinator, "Mr.B.Elia" and the academic coordinator "Mr.P. Vijay Kumar" for providing support and assistance.

On 30-10-2024, students from III-year Biotechnology (BtBCA) had the opportunity to visit a local sericulture unit as part of our curriculum.

The trip aimed to provide students with firsthand experience and knowledge about the lifecycle of silkworm, from mulberry leaf cultivation to the extraction of silk from silkworms and the manufacturing processes involved in creating silk products. The field trip was both educational and engaging, offering students an invaluable look into an important agricultural practice that has a rich history and significant economic impact.

Overview of the Sericulture Unit

The sericulture unit is dedicated to the cultivation of silk by rearing silkworms on mulberry leaves. Silkworm farming is a time-honored process that involves several stages, including the rearing of silkworms, harvesting of cocoons, and extraction of silk. The unit employs sustainable practices and showcases the entire sericulture cycle, making it an excellent learning resource for students.

"To acquire knowledge one must study , but to acquire wisdom one must observe."

Activities and Observations

1. Mulberry Leaves Cultivation

Our visit began with a tour of the mulberry cultivation area. The students learned that mulberry leaves are the sole food source for silkworms. The cultivation process involves:

Soil Preparation: The instructors explained the importance of soil quality and preparation in ensuring healthy mulberry plants.

Planting and Maintenance: Students observed the various stages of mulberry growth and the care involved in maintaining the plants, such as irrigation, pest control, and fertilization.

Harvesting: We learned about the harvesting schedule and the optimal ways to collect leaves to maximize silkworm health.

Student Reflection: Many students expressed a newfound appreciation for the hard work involved in cultivating a food source for silkworms.

2. Silkworm Larval Stages

Next, we moved to the silkworm rearing area, where we witnessed the various larval stages of the Bombyx mori, the most commonly used silkworm species. The stages we observed included:

Egg Stage: We learned that silkworms start as tiny eggs, which hatch into larvae (caterpillars).

Larval Stages (Instars): The guide explained the development from first to fifth instar, highlighting how the silkworms grow by molting several times.

Feeding: Students were able to observe the silkworms actively feeding on mulberry leaves, illustrating their voracious appetites.

Student Reflection: Witnessing the feeding behaviour and rapid growth of the silkworms helped students understand the relationship between the silkworms and their food source.

3. Extraction of Silk from Larva

After our exploration of the larval stages, we witnessed the process of silk extraction, also known as sericulture processing, which involves:

Cocoon Harvesting: The guide illustrated how cocoons are carefully collected once the silkworms spin their silk to form protective cases.

Degumming Process: We learned about the degumming process where the outer sericin layer is removed to reveal the silk fibres, making them suitable for spinning.

Spinning: Students observed the spinning process, where silk fibres are wound onto reels for further processing.

Student Reflection: The extraction process was particularly fascinating for many students, who expressed interest in the delicate craftsmanship required to transform cocoons into silk threads.

4. Silk Manufacturing Unit

Finally, we visited the silk manufacturing unit where raw silk is transformed into market-ready products. Key processes included:

Dyeing: We observed the dyeing process, where silk threads are treated with various natural and synthetic dyes.

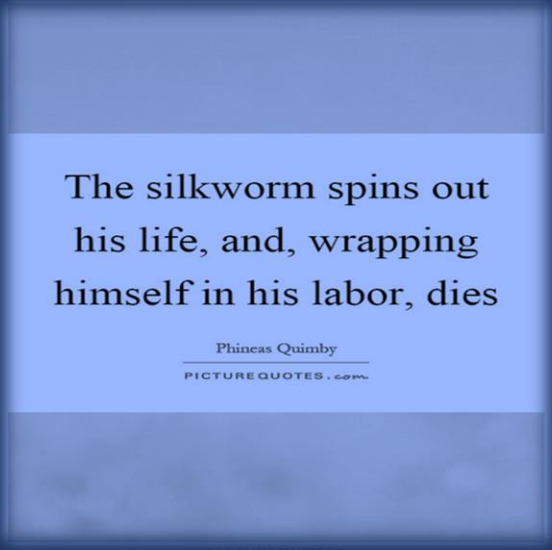
Weaving: Students had the opportunity to see traditional handlooms and modern automatic looms in action, producing beautiful silk textiles.

Finishing and Quality Control: The final stage involved finishing techniques that enhance the texture and lustre of silk products, ensuring quality control before packaging.

Student Reflection: Many students were amazed by the intricate patterns and colors of the finished silk products, and several expressed interest in the art of textile design.

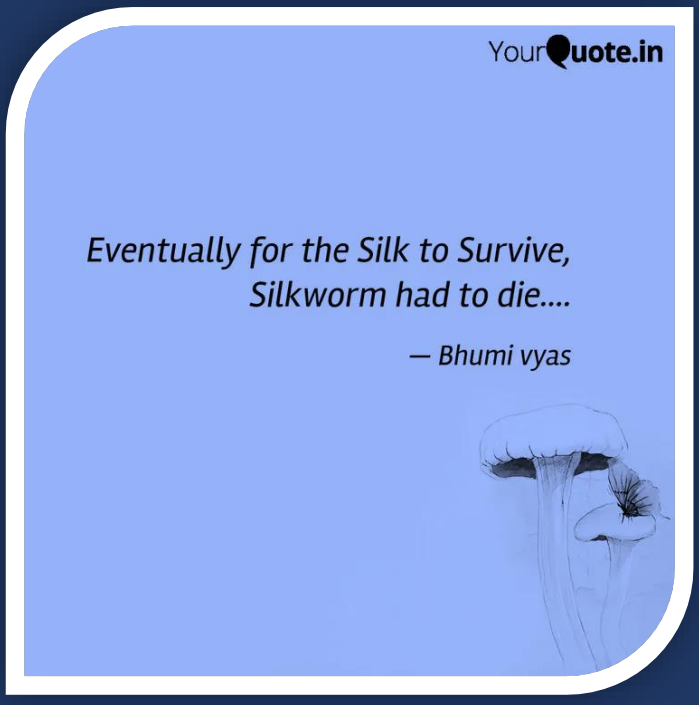
Conclusion

The field trip to the sericulture unit was an enlightening experience that significantly enhanced the students' understanding of silk production and its importance in agriculture and industry. Through direct observation and interaction, students grasped the complexities of sericulture, from mulberry cultivation to silk manufacturing. This hands-on experience not only fostered a greater appreciation for the labour and craftsmanship involved but also inspired interest in sustainable agricultural practices.



Acknowledgments

We would like to thank the staff of Chebrolu sericulture unit for their warm hospitality and informative presentations, which made this field trip a great success.



Thank You