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Analyze the knowledge and adoption level of bivoltine technologies in Hosur block in krishnagiri district, Tamil Nadu, India

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Abstract
Introduction: Sericulture is an Agro based the small-scale industry. The sericulture is only practice, we need the knowledge and adoption of bivoltine technologies.
Materials and Method: This study analyzes the knowledge and adoption level of bivoltine technologies by the Hosur block in Krishnagiri District, Tamil Nadu, India. The study was conducted with 80 sericulture farmers.
Results and Discussion: The parameters were analyzed Knowledge and adoption practicing Bivoltine technologies. *viz* 1. Adoption level of Mulberry technologies *viz*., Soil testing and reclamation, Mulberry variety, spacing of plantation, Irrigation method, Pruning, INM like FYM, Vermicompost and Bio fertilizers application, green manure and Chemical fertilizers application, IWM like Rain water harvesting set-up, Basin storage method, Water recharge setup, farm ponds. IPM like mechanical methods, insecticide, and biological control.
Conclusion: The concluding study majority of sericulture farmers have full and partial adoption of bivoltine technologies.

Keywords: Mulberry, Biological control, IPM, Pruning, farm pond

Introduction

Sericulture is a welfare-oriented business with the potential for rapid and long-term economic growth (*Bhattacharya et al.,* 2019). This business is noted for its natural products, including cocoons and silk (*Kumar et al.,* 2019) [12]. Sericulture, an age-old traditional practice of rural India has become a successful occupation for the guest income at frequent intervals for two to three decades. Sericulture training programs on the usage of new technologies are to be conducted periodically as and when new technologies are released for adoption.to ensure increased cocoon productivity with high technology adopted but also develop confidence in farmers' minds to go in for sericulture (Mani *et al*.,2006) [14]. Adoption of training helped farmers to a better option in the Udumalpet and Krishnagiri areas special attention is needed awards organize repeated training (Krishmoorthy and Radhakrishnan.,2012). The District Hosur block is invested with a delightful and favorable environment condition, suitable soils, and rich rainfall for mulberry cultivation and silkworm rearing, and 1682 farmers cultivated 3865.45-acre mulberries (HHTK Policy Note 2024-25). Hence the present study was aimed at the following objectives, to analyze the knowledge and adoption level of Mulberry technologies in Hosur block, krishnagiri District Sericulture farmers.

Materials and Methods

The study was taken up in the Krishnagiri district of Tamil Nadu, where the majority of farmers rear bivoltine cocoons. The survey was conducted in selected a blockin Hosur block in Krishnagiri district. The sample was drawn from the sericulture farmers, during the period 2025-2026. Since the study is based on primary data sources at the farmer's level, it is proposed to collect data sericulture farmers. From block, 150 samples were collected and a total of 80 samples would be ultimately used in the study. Primary data formulated with well-defined objectives based on the interview schedule was prepared. In this, all relevant information was furnished to collect data from respondents in the study area. Data was collected on knowledge and adoption levels of bivoltine technologies. To analyze the Adoption, the level was classified as full Adoption (FA), Partial Adoption (PA), and Adoption (NA), and this study used the percentage and mean.

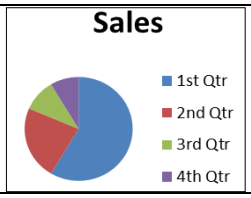
Result and Discussion

The data collected were presented in different tables and discussed below,

A high level of full knowledge was observed for irrigation through drip method (100%), indicating widespread awareness and adoption of efficient water management practices. The same kind of observation was done by Krishnamoorthy *et al*.,2015, who reported that 75% of adoption in udumalpet, was about the drip irrigation method, and Harishkumar *et al*., 2022 [9]. The reported 41.67 % Arsikee taluk of Hassan district (Karnataka).

Similarly, substantial knowledge was recorded for mulberry varieties (V1, MR2, G4) and recommended spacing, with 84.00 per cent of respondents having full knowledge, suggesting effective dissemination of varietal and planting recommendations. The findings were in line with the findings of Beula Priyadarshini and Vijaya Kumari (2013) [1], who reported 100 % Adoption of the mulberry variety in the Chittoor district, and Ravi Kant *et al*., (2023) [21], who reported 66.67 for partially adopted in mulberry variety in Jammu region and Abdul faruk & Balasaraswathi also supported the study 100 percent trained farmers knowledge and adoption of mulberry variety in Coimbatore districts.

Table 1: Analysis of Knowledge Level of Mulberry Cultivation

#	Mulberries Technologies	Sample	Knowledge					
			Full (F)	%)	Partial(P)	%	Non(N)	%
1	Soil Testing and reclamation	80	52	65.00	12	15.00	13	18.57
2	Mulberry variety (V1, MR2, G4)	80	68	84.00	12	16.00		
3	Spacing (4x4,'5+3x2 ', 8x8')	80	68	84.00	12	16.00		
4	Irrigation method -Drip	80	80	100				
5	Pruning (45 days -60 days)	80	67	84.75	50	16.25		
6	INM							
	1. FYM (8-10 MT)	80	70	87.50	10	12.50		
	2.Vermicompost application	80	49	61.25	11	13.75	20	25.00
	3. Bio fertilizers application	80	61	76.25	19	23.75		
	4. Green manure application	80	42	52.50	12	15.00	26	32.50
	5. Chemical fertilizers	80	68	85.00	12	15.00		
	6. Foliar application	80	49	61.25	31	38.75		
	Pooled data	80		56.50		15.83		23.00
7	IWM	80						
	1.Rainwater harvesting set-up	80	52	65.00	18	22.50	10	12.00
	2. Basin storage method	80	24	30.00	37	46.25	19	23.75
	3. Water recharge setup	80	38	47.50	13	16.25	29	36.25
	4. Farm ponds	80	45	56.25	19	23.75	16	20.00
	Pooled data	80		49.70		27.20		23.00
8	IPM	80						
	1. Mechanical Methods	80	47	58.75	26	32.50	7	8.75
	2. Insecticide Application	80	54	67.50	26	32.50		
	3. Biological control	80	18	22.50	16	20.00	46	57.50
	Pooled data	80		49.60		28.33		22.08
9	IDM- Mulberry	80	33	41.25	19	23.75	28	35.00
10	Right time used leaf (Mulberry)	80	43	53.75	17	21.25	20	27.50

In contrast, soil testing and reclamation practices showed comparatively lower full knowledge (65.00%), with a notable proportion of respondents having partial (15.00%) and non-knowledge (18.57%). This highlights a gap in awareness regarding soil health management, which is crucial for sustainable mulberry production.. The findings were in line with the findings of Elumalai and Murugesh (2018) reported in the Dharmapuri district and Harish Kumar *et al*., 2022. The reported Arsikere taluk of Hassan district (Karnataka).

INM practices, application of FYM (8-10 MT/ha) recorded the highest full knowledge (87.50%), followed by chemical fertilizer application (85.00%).This reflects farmers familiarity with conventional nutrient sources. However, relatively lower full knowledge was observed for vermicomposting application (61.25%), foliar application (61.25%), and green manure application (52.50%), with a considerable percentage of respondents falling under partial and non-knowledge categories.. The same studies were analyzed the Choudhury *et al.*, (2017) [3], who reported 56.7 % of adoption of the vermicomposting application.

Particularly, green manure application recorded the highest non-

knowledge (32.50%), indicating limited exposure to eco-friendly nutrient management practices. The pooled INM data showed that only 56.50 per cent of respondents possessed full knowledge, while 23.00 per cent had no knowledge, suggesting a need for strengthening awareness on integrated nutrient approaches. The Clear indicates that FYM application trained farmers' adoption level is high Earlier same kind was reported by Mani *et al., (*2006) [14], and Beula Priyadarshini *et al.*, (2013) [1],

IWM practices, rainwater harvesting structures showed relatively higher full knowledge (65.00%) compared to other components. Farm ponds and water recharge setup recorded moderate levels of full knowledge (56.25% and 47.50%, respectively. The basin storage method exhibited the lowest full knowledge (30.00%) and the highest partial knowledge (46.25%), indicating uncertainty and incomplete understanding among farmers. The pooled IWM data revealed that only 49.70 per cent of respondents had full knowledge, while 23.00 per cent had no knowledge, reflecting inadequate awareness of water conservation practices beyond drip irrigation. Rathore and Dhakar (2012) [20] found that (88.00%) of the trainee farmers implemented water management, Tamil Selvi (2019) the study revealed that the training must require farmers for water management techniques. this will help the farmer to cultivate a greater number of crops by using less quantity of water.

The knowledge level on IPM practices was moderate. Insecticide application recorded higher full knowledge (67.50%) compared to mechanical methods (58.75%).However,biological control methods showed very low full knowledge (22.50%) and the highest non-knowledge (57.50%), indicating poor familiarity with eco-friendly pest management options The pooled IPM data revealed that only 49.60 per cent of respondents had full knowledge, while 22.08 per cent lacked knowledge entirely, suggesting heavy dependence on chemical control measures.. The above results are in line with the findings of

Krishnamurthy (2012), Hadimani *et al*., (2017) [7], Choudhury *et al*., (2017) [3], and Elumalai *et al*., (2018), Sandhiya *et al.*, 2019, Ravi Kant *et al*., (2023) [21].

Knowledge regarding IDM in mulberry was comparatively low, with only 41.25 per cent of respondents having full knowledge and 35.00 per cent having no knowledge, indicating a serious gap in disease management awareness. The above results are in line with the findings of Krishnamurthy (2012), Hadimani *et al*., (2017) [7], Choudhury *et al*., (2017) [3] and Elumalai *et al*., (2018) and Ravi Kant *et al*., (2023) [21]. Regarding the right time of mulberry leaf harvesting, 53.75 per cent of respondents had full knowledge, while 27.50 per cent had no knowledge. Since leaf quality directly affects silkworm health and cocoon yield, this finding underscores the need for targeted training.

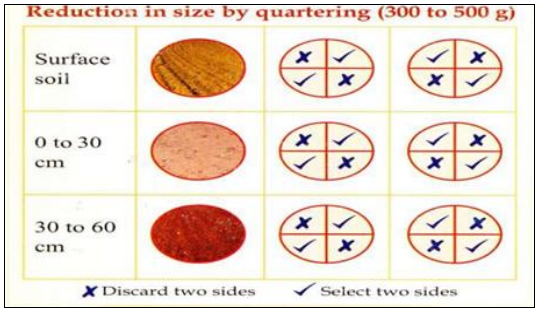


Fig 1: Soil test method

Fig 2: Mulberry plantation

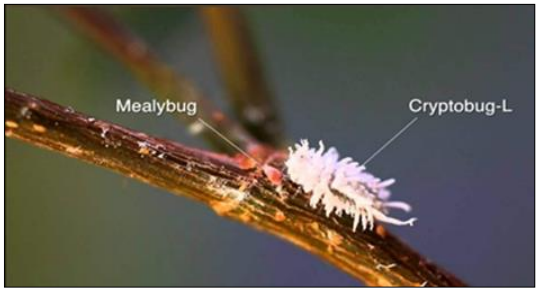


Fig 3: Biological control of (*pseudorendrothrips mori*) for Mulberry thrip

Fig 4: Mulberry parasitoid

Fig 6: Data collection at Hosur

Among the basic cultivation practices, mulberry varieties (V1, MR2, G4) recorded the highest level of full adoption (85.00%), followed by recommended spacing (77.50%) and pruning at 45-60 days interval (80.00%). The high adoption of these practices may be attributed to their direct and visible impact on leaf yield and ease of implementation. In contrast, soil testing and reclamation exhibited relatively low full adoption (52.50%), with a substantial proportion of respondents showing non-adoption (37.50%). This indicates that soil health-based management practices are yet to be fully integrated into farmers' routine management decisions.

Drip irrigation is a well-known water-saving technology, only 52.50 per cent of the respondents had fully adopted it, while 32.50 per cent partially adopted and 15.00 per cent had not adopted the practice. The moderate adoption level may be due to high initial investment costs and maintenance issues. INM components, chemical fertilizer application and FYM application (8-10 MT/ha) showed the highest full adoption levels (85.00% and 83.75%, respectively), reflecting farmers' reliance on conventional nutrient sources. Bio-fertilizer application also recorded a reasonably high adoption level (72.50%), suggesting increasing awareness of supplementary nutrient inputs. Some kind of results supported the Krishnamurthy 2012, and Elumalai, 2018.

However, lower full adoption was observed for vermicomposting application (55.00%) and foliar application (53.75%), with notable non-adoption levels of 36.25 per cent and high partial adoption (46.25%), respectively. Green manure application recorded the lowest adoption, with only 43.75 per cent full adoption and nearly 48.75 per cent non-adoption, indicating limited practice of on-farm organic nutrient recycling. The pooled adoption data for INM revealed that 65.63 per cent of respondents had fully adopted INM practices, while 17.10 per cent had not adopted them, suggesting moderate overall adoption but with clear scope for improvement.the studies also supported by Hadimani 2009, Hiriyanna,2017.

The adoption level of IWM practices was comparatively low. Rainwater harvesting structures showed moderate full adoption (60.00%), followed by farm ponds (52.50%). In contrast, basin storage methods and water recharge structures recorded very low full adoption (21.25% and 32.50%, respectively), with more than half of the respondents not adopting water recharge structures (56.25%).The pooled data indicated that only 41.56 per cent of the respondents had fully adopted IWM practices, while 37.20 per cent remained non-adopters. This reflects inadequate emphasis on long-term water conservation measures despite increasing water scarcity.

Among IPM practices, insecticide application recorded higher full adoption (65.00%) compared to mechanical methods (52.50%). However, biological control measures showed extremely low adoption, with only 15.00 per cent of respondents fully adopting the practice and 75.00 per cent not adopting it at all. The pooled IPM adoption data revealed that 44.20 per cent of the respondents had fully adopted IPM practices, while 31.70 per cent had not adopted them, indicating heavy dependence on chemical pest control methods. Some kind findings given by Sreenivasulu Reddy, 2010 [18].

Adoption of integrated disease management (IDM) in mulberry was relatively poor, with only 36.25 per cent full adoption and 46.25 per cent non-adoption. This low adoption level may be due to inadequate knowledge regarding disease identification and preventive measures. Similarly, adoption of the right time of mulberry leaf harvesting was moderate, with 47.50 per cent of respondents fully adopting the practice, while 35.00 per cent had not adopted it. Improper leaf harvesting practices may adversely affect silkworm growth and cocoon productivity. Some kind of reported that the ovais Ahmed Hajam, 2021 [16]. abdul faruk and Balasaraswathi, 2024.

Conclusion

The study revealed that mulberry growers possessed high knowledge and adoption of basic and yield-yield mulberry practices such as recommended mulberry varieties, spacing, pruning, drip irrigation knowledge, FYM application, and chemical fertilizer use. However, a clear gap between knowledge and adoption was observed in several critical areas, particularly soil testing and reclamation, IWM, IPM, green manuring, vermicomposting, and IDM

While awareness of drip irrigation and INM was relatively high, their complete adoption remained moderate, indicating the influence of economic, technical, and operational constraints.The No knowledge and adoption levels were recorded for biological control measures, water recharge structures, and IDM practices, highlighting limited exposure to eco-friendly and preventive technologies.

Overall, the findings emphasize the need for targeted extension strategies, capacity-building programmes, and on-field demonstrations focusing on sustainable and resource-conserving mulberry technologies. Strengthening farmer knowledge-adoption linkages will be crucial for improving productivity, leaf quality, and long-term sustainability of mulberry cultivation

References

1. Beula Priyadarshini, Vijakumari. Study on the knowledge and adoption level of improved sericulture practices by the farmers of Chittor district. International Journal of Agricultural Science and Research,2013:3(2):43-46.
2. Bhattacharyya D, Alam K, Bhuimali A, Saha S. Perspectives of sericultural farming for sustainable development. Ecology, Sustainability and Technology: The Paradigm Shifting, 2019:79-101.
3. Choudhury, Das, Ahmed. Studies on knowledge and adoption level of sericultural technologies among the farmers of Aizawl district of Mizoram. Imperial Journal of Interdisciplinary Research,2017:3(5):1573-1578.
4. Deepa P, Sujathamma P. Information source and consultancy pattern of different sericultural technologies at field level and technology adoption in semi-arid condition of Chittor district in Andhra Pradesh. Indian Journal of Sericulture,2007:46(1):86-88.
5. Elumalai K, Murugesh KA. Knowledge and adoption level in sericulture: A study in Dharmapuri district of Tamil Nadu, India. Journal of Entomology and Zoology Studies,2019:7(1):1641-1649.
6. Government of Tamil Nadu. Policy Note of Department of Handlooms, Handicrafts, Textiles and Khadi. Government of Tamil Nadu, 2022-2023.

7. Hadimani M, Ashoka, Manjunath. Impact study on sericulture production technologies adopted by farmers of Bidar district in Karnataka, India. International Journal of Current Microbiology and Applied Sciences,2017:6(10):2368-2371.
8. Hiriyanna, Kumaresan P, Mahadeva Murthy T, Suma AS, Quadri SMH. Technological impact on productivity and profitability in mulberry silk cocoon production. Journal of Agricultural Extension Management,2009:10(2):77-86.
9. Harishkumar J, Akarsha MR, Kishore Kumar B. The knowledge and adoption level of improved sericultural technologies by the farmers: A case study. International Journal of Research in Engineering and Science,2022:10(11):263-267.
10. Krishnamoorthy R, Radhakrishnan. Knowledge and adoption of new sericultural technologies among small mulberry farm size holders of Udumalpet and Krishnagiri areas of Tamil Nadu. Indian Journal of Sericulture,2012:51(1):50-58.
11. Kumaresan P, Geetha Devi RG. Factors discriminating the adoption of separate silkworm rearing houses in South India. Indian Journal of Sericulture,2009:48(1):49-55.
12. Kumar GA, Reddy BS, Goudappa SB, Hiremath GM, Patil SS. Growth performance of silkworm cocoon production in Karnataka, India. International Journal of Current Microbiology and Applied Sciences,2019:8(11):674-682.
13. Meenal, Rajan. Knowledge and adoption of bivoltine sericulture technologies by farmers. Indian Journal of Sericulture,2006:45(2):188-191.
14. Mani L, Lakshmanan, Bala Saraswathi, Quadri. Adoption of new sericultural technologies at farmers' fields in Erode district of Tamil Nadu: An empirical analysis. Indian Journal of Sericulture,2006:45(1):55-57.
15. Mohammed MK, Baldeo Singh. Correlates of adoption of improved sericulture practices. Indian Journal of Extension Education,2003:39(1-2):51-57.
16. Hajam OA, Qadri FI, Malik Dar MA, Malik FA. Knowledge and adoption level of improved sericulture technologies by the farmers of Kothar area of Anantnag district of Kashmir. Journal of Entomology and Zoology Studies,2021:9(1):267-271.
17. Sandiya Balakrishnan T, Jayasankar R. Knowledge level of sorghum farmers trained under ATMA scheme in Dindigul district of Tamil Nadu. Pramana Research Journal,2019:9(2):587-594.
18. Sreenivasulu Reddy, Sujatha B, Kasireddy, Rao TVS, Vinay Naidu B, Satyanarayana. Knowledge and adoption of bivoltine sericultural technologies by farmers of Anantapur, Chittoor and coastal districts of Andhra Pradesh: A comparative study. Indian Journal of Sericulture,2010:49(1):70-75.
19. Tripp R, Wijeratne M, Hiroshini V. What should we expect from farmer field school? A Sri Lanka case study. World Development,2005:33(10):1705-1720.
20. Rathore R, Dhakar S. Impact of KVK training program on knowledge and adoption of guava crop technologies in Chittorgarh district of Rajasthan. Indian Research Journal of Extension Education,2012:12(2):123-124.
21. Ravi Kant, Bali K, Gupta RK, Sharma R, Singh P, Jeelani MI. Adoption of various mulberry plantation and silkworm rearing technologies in Jammu region. The Pharma Innovation Journal,2023:SP12(8):40-48.
22. Lakshmanan S, Geetha Devi RG. Knowledge and adoption levels of farmers of bivoltine and cross-breed sericultural technologies. Indian Journal of Sericulture,2007:46(1):72-75.