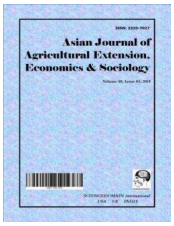

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A Study on the Practice of New Sericulture Technologies Based on Education and Experience

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Authors' contributions

This work has been carried out by author MBP working as a research scholar it is a part of my thesis, data was collected from sericulture farmers from various sericulture villages, wrote the first draft of the manuscript and managed the literature searches. Author NVK research supervisor guided and designed all the work for the manuscript. Both the authors read and approved the final manuscript.

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ABSTRACT

The present study was accomplished in sericulture villages of Chittoor district, Andhra Pradesh during 2011-2013 with an objective to interpret the socio-economic conditions which effecting the adoption of technology among sericulture. The data on two factors such as education and experience were collected, the results acknowledge that the sericulture farmers who had good education and experience have adopted all the improved technologies and were getting higher income. The sericulture farmers who had less education and experience were not adopting improved technologies resulting in poor income.

Keywords: Knowledge; adoption levels; sericulture; improved technologies.

1. INTRODUCTION

Sericulture is an agro-based, labour-intensive industry, which plays a key role for improving the social and economic conditions of the rural poor. Sericulture plays an important role in transformation of rural economy as it assures regular employment and periodic returns round the year [1]. India stands on second position in

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the world raw silk production. In India sericulture is no more a subsidiary occupation and it has become prime lively hood because of the development of new technologies and effective extension services. In India Andhra Pradesh is one of the traditional and major silk producing state next to Karnataka. According to [2] bulk of the silk produced in the Andhra Pradesh state comes from mainly Chittoor and Anantapur districts of Rayalasseema region. Chittoor district is in first position in the production of silk in the Andhra Pradesh Though Chittoor district is first in the production of silk in the state, there are few constraints for adoption of improved technologies which contributes for low yield and there by economic status of sericulture farmers. The constraints may be technical or social. Adoptions of improved sericulture practices play a major role on the productivity, employability and income to the farmers. The present study was undertaken to know the impact of education and experience aspects of the farmers and their adoption of improved and innovative Seri technologies in Chittoor district of Andhra Pradesh.

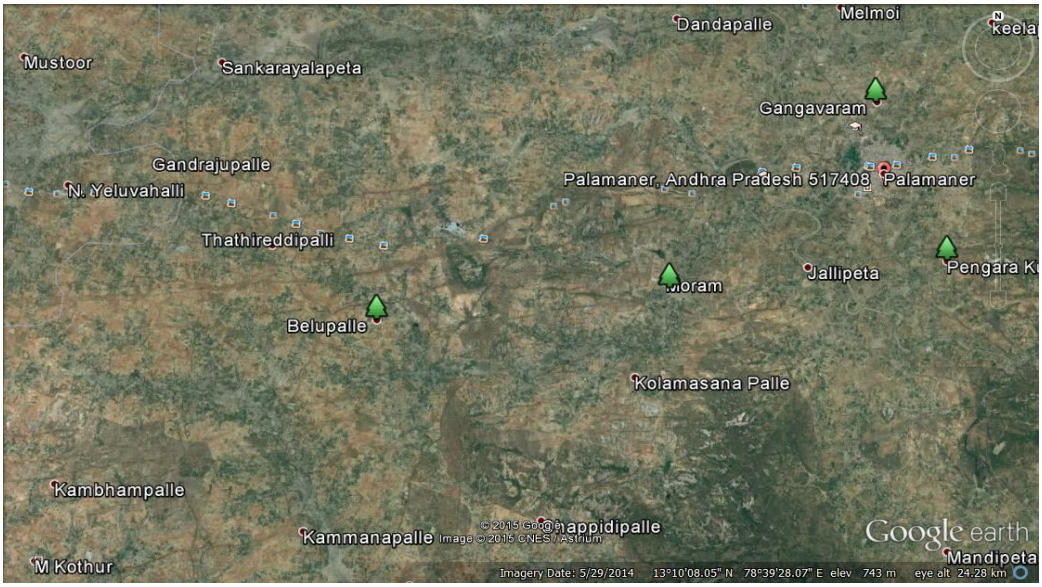
2. METHODOLOGY

In the present study ninety sericulturists from 10 sericultural villages from two mandals of Chittoor district as shown in the two given maps. Map 1 consists the selected villages namely Belupalle, Moram, Pengaragunta, Gangavaram from Palamaneru. Map 2 consists of given villages namely Jakkidonna, Goduguchintha, Tarlabylu, Perumallapalli, Kondakindapalle, Aggichenupalli from Vedurukuppam mandal were selected. Present data was collected through personal interview by following a structured interview schedule on education and experience levels of the farmers on improved sericultural technologies and their adoption percentage of educated farmers and also experience was calculated.

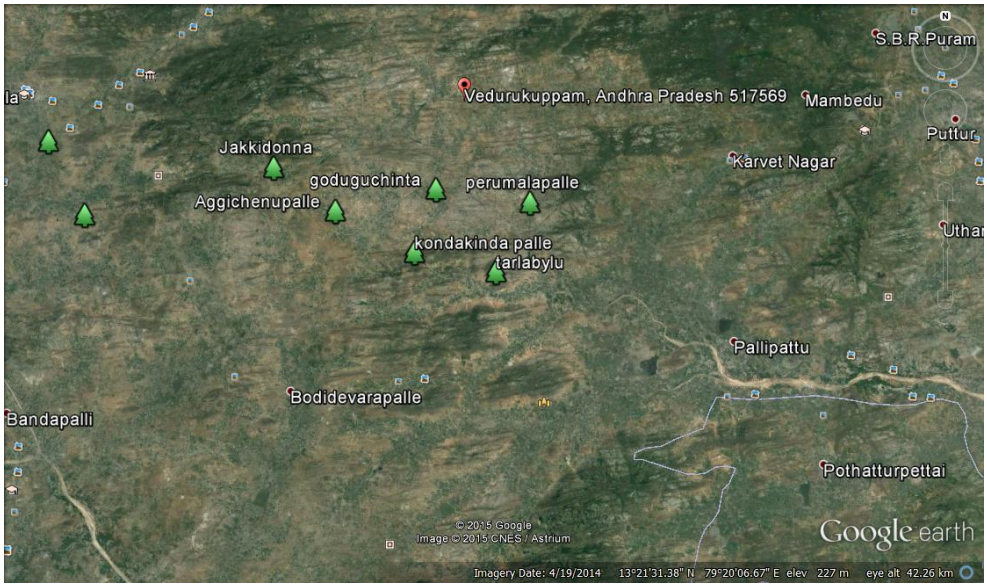
The level of adoption of different technological practices was given in simple tabular forms. The productivity depends upon the extent of which farmers adopt new sericultural innovation. Totally eleven individual practices in sericulture and six of the mulberry cultivation technology practices, five of silkworm rearing technologies were considered and adoption level of farmers based on their education and experience were analysed.

3. RESULTS AND DISCUSSION

The data collected was presented in different tables and discussed as below, the farmers who adopted all the recommended practices fully were considered as full adopters (FA), those who are practicing few practices were considered as partial adopters (PA) and those who were not adopting all the practices are as non-adopters (NA).



Map 1. Map showing sericulture villages of palamaneru in Chittoor district



Map 2. Map showing sericulture villages of vedurukuppam in Chittoor district
Sources of the maps: Collected from google earth

Table 1 reveals that the education levels of the farmers on different mulberry cultivation practices and was categorised into graduate farmers, higher secondary farmers, primary educated farmers and illiterates. Graduate farmers had full adoption about mulberry variety & spacing because of their higher education and farmers had the ability to adopt all the improved technologies in sericulture. For the application of FYM and for the plant protection measures 83.33% of farmers have shown full adoption and 16.66% of the farmers are partial adopters. For the practice of fertilizer application and for drip irrigation 66.66% are adopting fully and 33.33% are partially.

Higher secondary educated serifarmers had full adoption for mulberry variety and high adoption for spacing 87.5% and 12.5% partially and shows less adoption for the fertilizer application practice i.e.,62.5% fully and 6.25% partially. Primary educated farmers because of their less education they shows higher adoption in mulberry variety practice 86.95% fully, 10.34% for partial adoption and for the practice of drip irrigation they had less adoption 41.37% fully, 27.58% partially and 31.03% for non-adoption. Coming to the illiterate farmers they are following their own methods and because of their belief in traditional practices they showed less adoption when compared to the all above categories, farmers showed higher adoption in mulberry variety and spacing 73.91% fully, 13.04% partially and 13.04% for non-adoption. Graphical representation of adoption index percentage of mulberry cultivation based upon education levels was shown in Fig. 1.

Data on adoption status of the respondents on new technologies under mulberry cultivation are given in Table 2. The data revealed that the educated farmers had full adoption by having well established rearing house and for the practice of shoot rearing practice adoption was 100%. For the practice of disinfection and for the usage of mountages, serifarmers had high adoption 83.33% fully and 16.66% partially.

The farmers who had higher secondary education they showed higher adoption in shoot rearing 96.87% fully and 3.12% partially and for the disinfection method they showed less adoption 75% fully, 15.62% partially and 9.37% for non adoption.

Graphical representation of adoption index percentage of silkworm rearing cultivation practices based upon experience levels was shown in Fig. 2.

The given Table 3 reveals that the adoption levels of the farmers who had experience in various mulberry cultivation practices and was categorised into three types high experience, medium experience and less experience. Highly educated farmers showed higher adoption that is fully in mulberry variety and spacing and showed lower adoption 73% fully, 27% partially for the drip irrigation method.

Table 1. Adoption index (%) of mulberry cultivation practices based upon education levels

Sl. no	Education levels of the Serifarmers	Adoption index(%) of mulberry cultivation technologies																	
		Mulberry variety			Spacing			FYM			fertilizers			Plant protection sprayers			Drip irrigation		
		F	P	N	F	P	N	F	P	N	F	P	N	F	P	N	F	P	N
1	Graduates	100	0	0	100	0	0	83.33	16.66	0	66.66	33.33	0	83.33	16.66	0	66.66	33.33	0
2	Higher Secondary	100	0	0	87.5	12.5	0	75	25	0	62.5	31.25	6.25	75	18.75	6.25	65.62	21.85	12.5
3	Primary	89.65	10.34	0	82.75	17.24	0	65.5	20.68	13.79	58.62	17.24	24.13	65.51	17.24	17.24	41.37	27.58	31.03
4	Illiterates	73.91	13.04	13.04	73.91	13.04	13.04	60.86	17.39	21.73	52.17	13.04	34.78	60.86	13.04	26.08	13.04	30.43	56.52

F: Full adoption, P: partial adoption, N: Non adoption

Sources of the Table: Gathered from sericulture farmers by direct interviewing based on a questioner

Table 2. Adoption levels of silkworm rearing practices of serifarmers based on their Experience

Sl. no	Education levels of the Serifarmes	Adoption index(%) of silkworm rearing practices														
		Rearing house			Shoot rearing			Disinfection			Vijetha			Mountages		
		F	P	N	F	P	N	F	P	N	F	P	N	F	P	N
1	Graduates	100	0	0	100	0	0	83.33	16.66	0	100	0	0	83.33	16.66	0
2	Higher Secondary	93.75	6.25	0	96.87	3.12	0	75	15.62	9.37	90.62	9.37	0	81.25	18.75	0
3	Primary	89.65	10.34	0	86.2	13.79	0	72.41	10.34	17.24	86.20	13.79	0	75.86	13.79	10.34
4	Illiterates	73.91	8.69	17.39	73.91	8.69	17.39	65.21	8.69	26.08	73.91	8.69	17.39	69.56	13.04	17.39

F: Full adoption, P: partial adoption, N: Non adoption

Sources of the Table: Gathered from sericulture farmers by direct interviewing based on a questioner

Table 3. Adoption level of mulberry cultivation practices based on experience of the Seri farmers

Sl. no	Experience of the Serifarmers	Adoption index(%) of mulberry cultivation practices																	
		Mulberry variety			Spacing			FYM			Fertilizers			Plant protection sprayers			Drip irrigation		
		F	P	N	F	P	N	F	P	N	F	P	N	F	P	N	F	P	N
1	High	100	0	0	100	0	0	84.61	15.38	0	77	23	0	84.61	15.38	0	73	27	0
2	Medium	100	0	0	88.46	11.53	0	77	23	0	72.72	27.27	0	72.72	27.27	0	69.23	23.07	7.69
3	Less	84.61	15.38	0	80.76	15.38	3.84	73.07	19.23	7.69	61.53	26.92	11.53	69.23	19.23	11.53	46.15	19.23	34.61

F: Full adoption, P: partial adoption, N: Non adoption

Sources of the Table: Gathered from sericulture farmers by direct interviewing based on a questioner

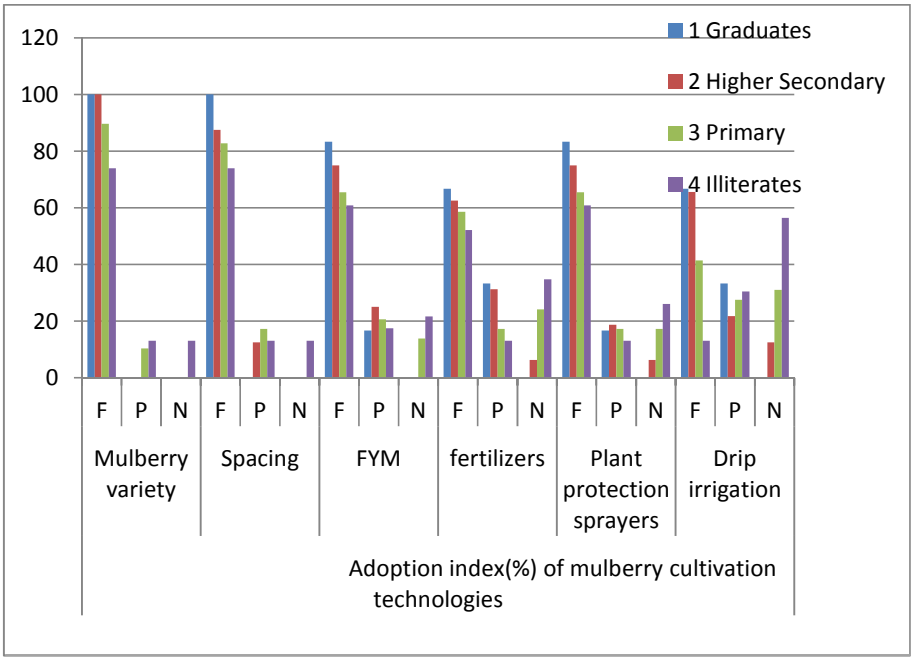


Fig. 1. Graphical representation of adoption index (%) of mulberry cultivation practices based upon education levels

Sources of the graph: Gathered from sericulture farmers by direct interviewing based on a questioner

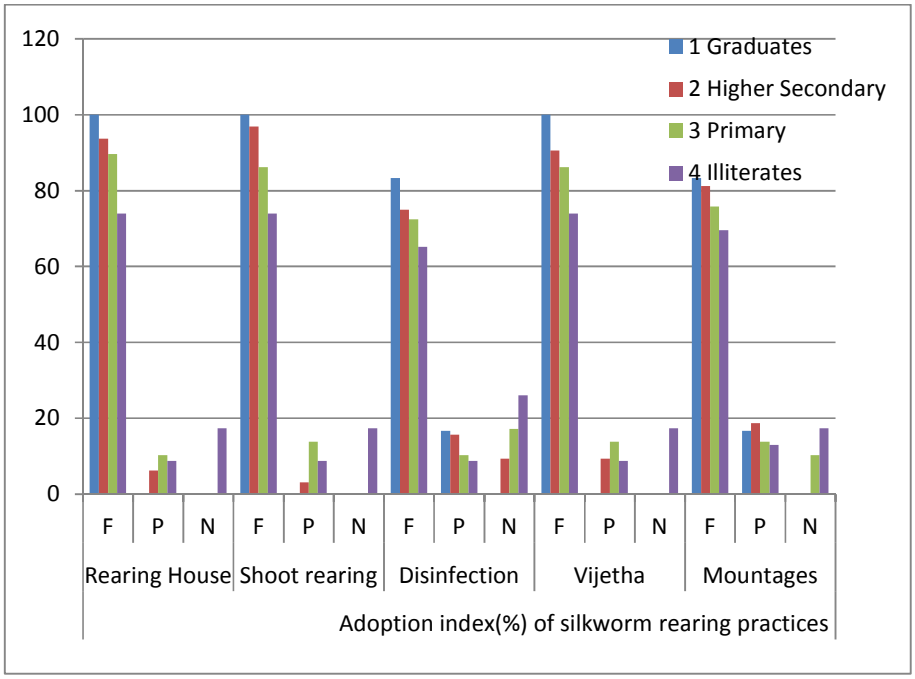


Fig. 2. Graphical representation of silkworm rearing technologies based on education levels

Sources of the graph: Gathered from sericulture farmers by direct interviewing based on a questioner

The table gives the information about the adoption of medium experienced farmers and showed higher adoption in mulberry variety fully 100%, and for the practice of drip irrigation the

respondents showed lower adoption 69.23% fully, 23.07% partially and 7.69% for non adoption.

Finally less experienced farmers because of not having much experience in various mulberry cultivation technologies they had higher adoption in mulberry variety 84.61% fully, and 15, 38% partially. For the practice of drip irrigation the Seri farmers had lower adoption 46.15% fully 19.23% partially and 34.61% for non-adoption. Graphical representation of adoption index percentage of mulberry cultivation practices based on experience was shown in Fig. 3.

Table 4 reveals the detailed explanation about the experience of the seri farmers among various rearing practices of sericulture. High experienced farmers had higher and full adoption in shoot rearing 100%. For the practice of disinfection highly experienced farmers had lower adoption 80.76% fully, 19.23% partially.

Medium farmers showed higher adoption 95.45% full and 4.54% partial for the shoot rearing practice and for the application of vijetha and showed lower adoption for the practice of disinfection.

The Seri farmers who had less experience for the sericultural practices showed higher adoption 90% fully and 10% partially for the practice of shoot rearing, and showed lower adoption for the practice of disinfection. Graphical representation of adoption index percentage of silkworm rearing practices based on experience was shown in Fig. 4.

Effect of education & experience on the income of sericulture farmers (average acre/year) was carried out in the present study and it was showed in the tabular form which was located in Table 5. This gives the information about the sericulture farmers, the farmers who are not adopting all the improved sericulture practices are getting less yield of both mulberry leaf and cocoon and are getting eighty thousand five hundred twenty rupees. The farmers who are adopting all the improved sericulture technologies are getting more yield of leaf and cocoon with good quality from which they are getting an income of three lakhs thirty seven thousand and five hundred rupees which is four times more than income from non adoption of improved seri practices.

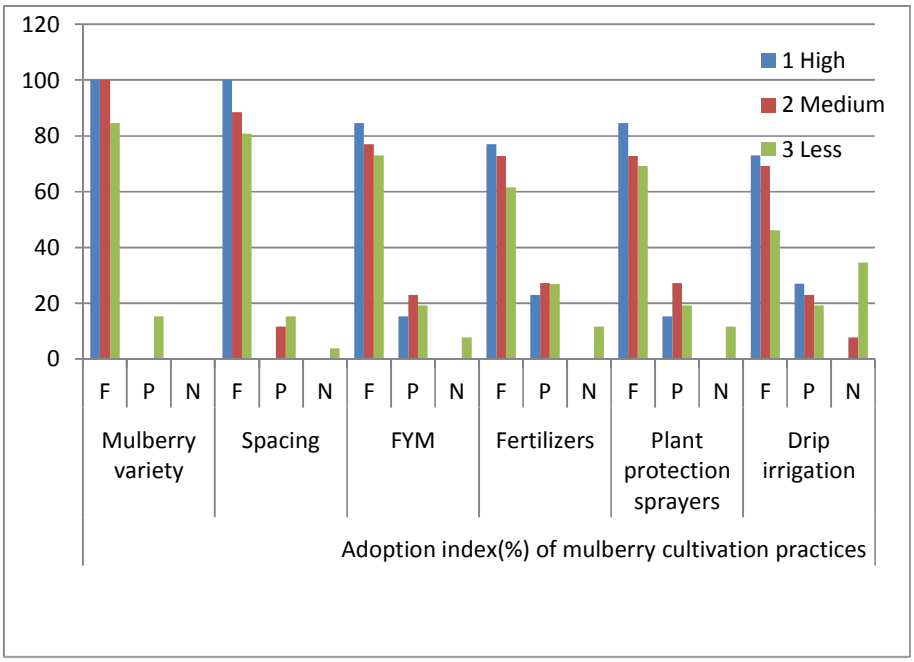


Fig. 3. Graphical representation of mulberry cultivation practices based on experience
Sources of the graph: Gathered from sericulture farmers by direct interviewing based on a questioner

Table 4. Adoption levels of silkworm rearing practices of seri farmers based on their Experience

Sl. no	Experience of the Serifarmes	Adoption index (%) silkworm rearing practices														
		Rearing house			Shoot rearing			Disinfection			Vijetha			Mountages		
		F	P	N	F	P	N	F	P	N	F	P	N	F	P	N
1	High	92.30	7.69	0	100	0	0	80.76	19.23	0	100	0	0	84.61	15.38	0
2	Medium	91	9	0	95.45	4.54	0	77.27	22.72	0	95.45	4.54	0	81.81	18.18	0
3	Less	80	20	0	90	10	0	70	20	10	80	20	0	75	25	0

F: Full adoption, P: partial adoption, N: Non adoption

Sources of the Table: Gathered from sericulture farmers by direct interviewing based on a questioner

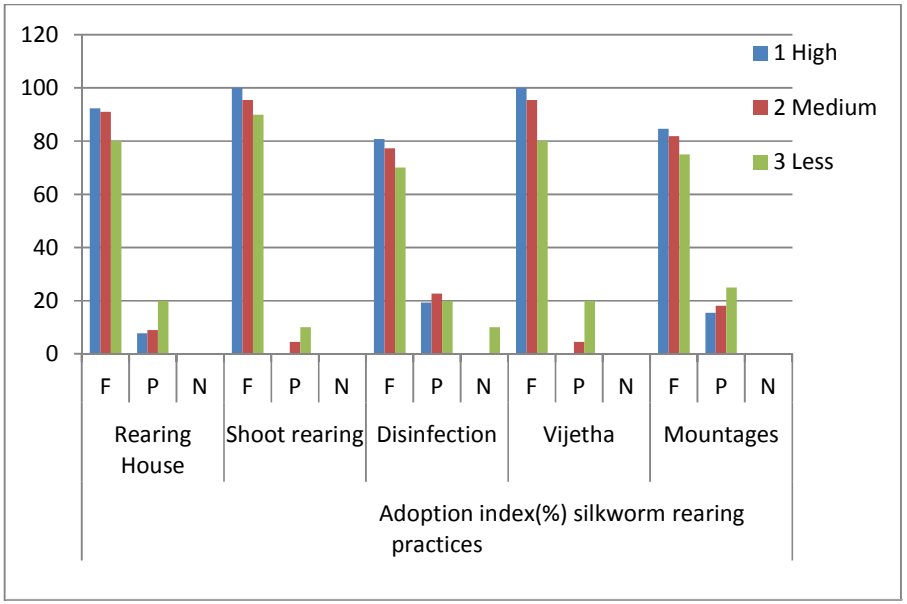


Fig. 4. Graphical representation of silkworm rearing practices based on experience

Sources of the graph: Gathered from sericulture farmers by direct interviewing based on a questioner

Table 5. Effect of education & experience on the income of sericulture farmers (Average acre/year)

Sl. no	Category	Mulberry leaf yield (kg/acre/year)	Cocoon yield in Kgs/acre/year	Cost of cocoons/kg	Total income (Rupees)
1	Non-adoption	9167 kg	366 kg	220	80,520
2	Adoption	18750 kg	1125 kg	300	3,37,500

4. CONCLUSION

From the present study, it can be concluded that the farmers who were adopted all the improved technologies were getting higher income i.e. three lakhs thirty seven thousand and five hundred rupees, when compared with non adopted farmers who were getting less income i.e., eighty thousand five hundred twenty rupees only. By the above study we can say that technology adoption is essential for the success of the sericulture farmers to get higher returns in sericulture. Hence, there is a need to implicate extension activities like group discussions, demonstrations, training programs, field visits and also interactions with progressive farmers. It is necessary to enhance the knowledge of the sericulturists in their particular areas to get good quality and quantity of mulberry and also cocoon production. This lacunae has to be filled by the extension officers to reach the sericulture farmers to aware, educate and also expertise the farmers for the adoption of all the recommended technologies. We can conclude that sericulture is an excellent house hold activity which brings consequential change both in social and economic conditions of the rural and semiurban areas by adopting all the necessary improved sericulture technologies.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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