Research Article

ADOPTION LEVEL OF IMPROVED PRACTICES AMONG SERICULTURE FARMERS OF KOLAR AND CHIKKABALLAPUR DISTRICTS IN KARNATAKA

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Abstract: Sericulture is one of the promising enterprises supporting agriculture. It is a labour intensive, employment creating and income generating agro based industry providing gainful employment to 8.51 million mostly rural people. The present study was conducted in Siddlagahatta and Srinivasapur taluks of Chikkaballapur and Kolar districts of Karnataka during 2017-18. It is reported that, 51 percent of sericulture farmers possessed medium overall adoption followed by 32 percent had high adoption and 17 percent had low overall adoption level of improved sericulture practices. Ten independent variables fitted in Multiple regression and indicated that 61. 30 percent of the variation in the adoption of sericulture practices.

Keywords: *Sericulture, Tree type mulberry and improved practices*

Academic Editor / Reviewer: Saikia Monimala

Introduction

India occupies second in global silk production of 0.31 lakh metric tons after china with 1.42 lakh metric tons. Whereas Karnataka has got highest area and production in India. This study was undertaken to study the knowledge level of improved cultivation practices in tree mulberry and to study the training needs and advantages of cultivating tree mulberry to farmers. The present study was conducted in Siddlagahatta and Chintamani taluks of Chikkaballapur district and Bangarpet and Srinivasapur taluks of Kolar district of Karnataka during 2017-18. Total sample for the study was 120 respondents from both the Districts. The statistical tools used were Frequency, Percentage, Mean, Standard deviation, Correlation and Multiple regression analysis. The results of the study reported that a greater number of sericulture farmers had medium overall knowledge level followed by high and few were having with low level of overall knowledge of improved sericulture practices. All the sericulture farmers had correct knowledge on mulberry variety. Suitable month for planting, kind of soil, ideal age of mulberry cutting, method of pruning, time of application of FYM, method of planting and spacing in mulberry. Training needs as expressed by sericulture farmers in mulberry production were pest and disease management, calculation of NPK fertilizers and spacing in mulberry. Where as in silkworm rearing includes leaf preservation and pest and disease management. Correlation and regression tests indicated that education, income, mass media participation, and extension participation of sericulture farmers had positive and significant relationship with their knowledge level and independent variables had contributed 76 percent of change in their knowledge level. Majority of the sericulturists expressed reasons for shifting to tree type mulberry cultivation over row system includes drought tolerant, less labour requirement, less chemical fertilizer requirement and high-water use efficiency. Hence, farmers can be educated on improved practices including wider spacing through on farm trainings in large scale to raise tree type mulberry under dry land conditions. So, that farmers can learn to survive under rain fed conditions in sustainable manner.

Objectives of the study

To study adoption level of improved practices among sericulture farmers in Kolar and Chikkaballapur districts.

To study the profile and relationship between adoption level of improved practices of Sericulturists and their socio-economic characteristics

Material and methods

Research design: Based on the objectives of the study ex-post-facto research design will be adopted for the study Locale of the study: The study was planned to conduct in the Chikkaballapur and the Kolar districts because sericulture is the major occupation of the majority of farmers. Selection of the sample: The present study was conducted in Siddlagahatta taluk of Chikkaballapur district and Srinivasapur taluk of Kolar district during 2017-18. These taluks were purposefully selected for the study. A list of all the mulberry growing villages in each taluk was prepared in consultation with the respective sericulture extension officers of the state department of sericulture. From this list 6 villages from each taluk were selected based on the largest area under mulberry cultivation. Further 10 sericulturists from each village were randomly selected as respondents for the study. Thus, a total sample for the study was 120 respondents from both the taluks.

Results and Discussion

Table-1 *Categorization of sericulture farmers according to their overall adoption level of improved cultivation practices*

Category	Sericulture farmers	
	No.	Percent
Low	20	17
Medium	61	51
High	39	32
Total	120	100

Overall adoption level of farmers regarding improved sericulture practices
It is seen from the [Table-5] that 51 percent of sericulture farmers possessed medium overall adoption followed by 32 percent had high adoption and 17 percent had low overall adoption level of improved sericulture practices.

Adoption level farmers regarding improved mulberry cultivation practices
An examination of [Table-6] indicates majority of farmers adopted mulberry variety (98.3 %), kind of soil (89.10%)), ideal age of mulberry cuttings (89.16%)),suitable month and method of planting (84.16%)), spacing and method of pruning (83.3%)), quantity of FYM to apply (79.16%)), and time of application of FYM (75%)).The improved cultivation practices which were partially adopted by large number of farmers was fertilizer dose of NPK

Adoption level farmers regarding improved silkworm rearing practices
It is seen from the [Table-6] that majority of farmers adopted kind of silkworm rearing house (91.66%)), direction of rearing house (91.60%)), disinfection of rearing materials (91.60%)), method of silkworm rearing (91.60%)), method of feeding to 2nd instar (91.60%)), number of feeds in each instar (91.60%)), method of marketing cocoons in average yield per 100 DFLs (90%)). Further majority of farmers did not adopt silkworm rearing practices like ideal moisture content for leaf preservation and recommended size of nylon mesh for bed cleaning (90).

Table-2 *Adoption level of sericulture farmers regarding improved cultivation practices, (n=120)*

Improved mulberry cultivation practices	Full adoption		Partial adoption		Non-adoption	
	No.	%	No.	%	No.	%
Kind of soil	107	89.1	0	0	13	10.83
Mulberry variety	118	98.3	0	0	2	1.6
Ideal age of mulberry cuttings	107	89.16	0	0	13	10.83
Suitable month for planting	101	84.16	0	0	19	15.83
Method of planting	101	84.16	0	0	19	15.83
Spacing in mulberry	100	83.3	1	0.8	19	15.83
Method of pruning	100	83.3	10	8.33	10	8.33
Quantity of FYM application	95	79.16	15	12.5	10	8.33
Time of application of FYM	90	75	17	14.16	13	10.83
Fertilizer dose NPK	22	18.33	82	68.33	16	13.33
Method of irrigation mulberry	89	74.16	21	17.5	10	8.33
Method of controlling of weeds	63	52.5	42	35	15	12.5
Disease in mulberry	60	50	32	26.66	28	23.33
Pest in mulberry	58	48.3	40	33.33	22	18.33

Table-3 *Adoption level of sericulture farmers regarding improved Silkworm rearing practices, (n=120)*

Improved mulberry cultivation practices	Full adoption		Partial adoption		Non-adoption	
	No.	%	No.	%	No.	%
Kind of silkworm rearing house	110	91.66	5	4.16	5	4.16
Type of rearing house	102	85	10	8.33	10	8.33
Size of rearing house	100	83.33	8	6.66	12	10
Direction of rearing house	104	86.66	10	8.33	6	5
Disinfection of rearing house	110	91.6	5	4.16	5	4.16
Disinfection of rearing materials	110	91.6	7	5.83	3	2.5
Breeds of silkworm to get high yield	108	90	5	4.16	7	5.83
Method of silkworm rearing	110	91.6	6	5	4	3.33
Method of feeding chawki worms	109	90.8	5	4.16	6	5
Method of feeding 2nd instar worms	110	91.6	6	5	4	3.53
No. of feedings in each instar	110	91.6	5	4.16	5	4.1
Diseases of silkworms	54	45	50	41.66	16	13.33
Pests of silkworms	107	89.16	6	5	7	5.85
Ideal moisture content for leaf preservation	10	8.33	0	0	110	91.66
Recommended size of nylon mesh for bed cleaning	10	8.33	2	1.66	108	90
Hormone for uniform maturity of silkworm	40	33.33	10	8.33	70	58.33
Method of marketing cocoons	108	90	5	4.16	7	5.83
Ideal material for packing cocoons	98	81.66	10	8.33	12	10
Time for transporting cocoons to the market	110	91.66	5	4.16	5	4.16
Type of cocoons fetches higher rate	103	85.83	5	4.16	12	10
Average yield of cocoons	108	90	5	4.16	7	5.83

An examination of [Table-4] projects the profile of sericulture farmers
Age: It is seen from the table that 44 percent of the sericulture farmers belonged to middle age group where as 32 percent belonged young age and 24 percent belonged to old age group.

Education: It is seen from the table that 38 percent of the sericulture farmers belonged to high education level followed by medium education 35 percent and low education level 27 percent.
Land holding: Majority of sericulture farmers (58%) possessed medium level of land holding followed by (28%) low level and high(14%) land holding.
Annual income per annum: Majority of sericulture farmers (58%) possessed medium level of income per annum followed by (28%) low level and high (14%) income per annum.
Mass media Participation: Majority of the sericulture farmers (38%) belonged to medium level of Mass media participation followed by low (32%) and high (30%) level of mass media participation.
Social participation: As high as 46 percent of sericulture farmers had high social participation followed by (37%) with low level and 17 percent with medium level of social participation.
Extension Participation: Majority of sericulture farmers (38%) had medium level of extension participation followed by (37%) medium and low (25%) level of Extension participation.
Low level of aspiration: Regarding level of aspiration 40 percent of the sericulture farmers had low level of aspiration, 32 percent with medium and 28% with high level of aspiration.
Risk orientation: An appraisal if table explaining the fact that many had medium risk orientation followed by high (29%) and low (13%) risk orientation.
Economic Motivation: The data of the table indicates that 42 percent of sericulture farmers had high economic motivation followed by a (40%) having medium and (18%) of sericulture farmers had low level of economic motivation.

Table-4 *Profile of the sericulture farmers, (n=120)*

S	Characteristics	Category	No.	%
1	Age	Low	38	32
		Medium	53	44
		High	29	24
2	Education	Low	33	27
		Medium	42	35
		High	45	38
3	Income	Low	34	28
		Medium	70	58
		High	16	14
4	Land holding	Low	33	28
		Medium	70	58
		High	17	14
5	Mass media participation	Low	39	32
		Medium	45	38
		High	36	30
6	Social participation	Low	44	37
		Medium	21	17
		High	55	46
7	Extension participation	Low	30	25
		Medium	46	38
		High	44	37
8	Level of aspiration	Low	48	40
		Medium	38	32
		High	34	28
9	Risk orientation	Low	16	13
		Medium	69	58
		High	35	29
10	Economic motivation	Low	22	18
		Medium	48	40
		High	50	42

Relationship between adoption level and personal socio-psychological characteristics of sericulture farmers
The correlation coefficient (r) presented in the [Table-5] indicates that the variables namely education, mass media participation, social participation, Extension participation and Risk orientation were significantly related to sericulture farmers. Whereas variables like age, income, Land holding, Level of aspiration and Economic motivation were not significantly related to adoption level. Multiple regression analysis indicated in the [Table-6] that all the ten independent variables fitted together in the regression model contributed to 61.30 percent of the variation in the adoption of improved cultivation practices of the sericulture farmers.

Table-5 Relationship between adoption level and personal socio-psychological characteristics of sericulture farmers

S	Variables	r' values
1	Age	0-.049 NS
2	Education	0.220*
3	Income	0.045 NS
4	Land holding	0.074 NS
5	Mass media participation	0.260**
6	Social participation	0.418**
7	Extension participation	0.350**
8	Level of aspiration	0.135 NS
9	Risk orientation	0.269**
10	Economic motivation	0.135 NS

**Correlation is significant at the 0.01 level
*Correlation is significant at the 0.05 level; NS=Non Significant

Table-6 Multiple regression of adoption level of sericulture farmers with different Characteristics

S	characteristics	Regression coefficient	R2 values
1	Age	0-.015NS	0.613
2	Education	1.725**	
3	Income	0.006NS	
4	Land holding	-1.064NS	
5	Mass media participation	0.106NS	
6	Social participation	1.474**	
7	Extension participation	1.314**	
8	Level of aspiration	0-.210NS	
9	Risk orientation	0.667**	
10	Economic motivation	0.532NS	

**Correlation is significant at the 0.01 level
*Correlation is significant at the 0.05 level; NS=Non Significant

Conclusion

The study would help to know the adoption level of improved practices among sericulture farmers. The critical practices like optimum dose of fertilizers, ideal moisture content for leaf preservation in mulberry, recommended size of nylon mesh for bed cleaning and hormone for uniform maturity of silkworm were found to be less adopted. In this line technical advisory service from extension agency would be very much required in motivating the sericulture farmers to realize importance of these practices in order to increase cocoon yield and quality levels, increase the income by stable prices in the markets in sericulture etc. Hence farmers can be educated on improved practices by organizing large scale training programmes to sericulture farmers including wider spacing to raise mulberry under dry land conditions. So, these farmers can learn to survive under rainfed conditions in sustainable manner

Application of research: Study helps to find out specific area where sericulture farmers required training to improve their knowledge level in order to increase production, productivity in sericulture.

Research Category: Sericulture

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University: University of Agricultural Sciences, Bangalore, 560 065, Karnataka
Research project name or number: To study the knowledge gap and adoption level of improved practices among farmers sericulture in Eastern Dry Zone of Karnataka

Author Contributions: All authors equally contributed

Author statement: All authors read, reviewed, agreed and approved the final manuscript. Note-All authors agreed that- Written informed consent was obtained from all participants prior to publish / enrolment

Study area / Sample Collection: 6 villages in Srinivasapur Taluk of Kolar district and 6 villages in Sidlagatta Taluk of Chikkaballpur

Cultivar / Variety / Breed name: Mulberry

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.
Ethical Committee Approval Number: Nil

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