



Research Article

Popularization of Bivoltine sericulture among tribal folk of Jammu and Kashmir with special reference to Poonch District

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Abstract

Sericulture is the living culture among the rural and tribal folks of Jammu and Kashmir having world-class quality characteristics. Due to various reasons, silk farming has received an unfortunate decline during the last few years. The current survey study was formularized to evaluate the constraints responsible for the expected yield gap and for formulating future strategies to popularize the concept of silkworm rearing among the tribal folks for strengthening their livelihood. The results depicted the total production to be highest for the year 2019 with 234 kg of cocoon yield followed by 2017 with 221kg of cocoons and least for the year 2015 with 155kg cocoons and the net income and profit to the farmers was reported to be highest in the year 2015 as Rs. 27700 and Rs. 14200 respectively. The survey indicated that the majority of the sericulture farmers belong to the general category constituting 86.6 percent of the total number of farmers followed by schedule caste and schedule tribe both constituting only three percent of the total respondents indicating the need for the popularization of this agro-enterprise among the marginal farmers belonging to various underprivileged communities. Therefore, considering the utmost significance of sericulture in boosting the rural livelihood, an attempt has been carried out to emphasize the role of sericulture among tribal folks hailing in Poonch District, for the revitalization of the bivoltine silk industry in Jammu and Kashmir specifically among marginal farmers.

Keywords cocoons, sericulture, tribal folks, yield

Introduction

India contributes significantly to the world's total raw silk production and ranks in the second position with a strong tradition of silk farming with the remarkable distinction of producing all four varieties of silk viz. Mulberry, Tasar, Eri, and Muga [1]. Sericulture in India is carried out mainly in five traditional states, viz. Karnataka, Andhra Pradesh, Tamil Nadu, West Bengal, and Jammu and Kashmir. These five states collectively account for 97 percent of the raw silk production of the country. Silk farming provides direct employment to approximately 6 million people across the country. Karnataka is the largest producer of silk in the country and account for 9571 Metric Tonnes (MT) during 2016-17.

During the year 2016-17, total raw silk production of mulberry raw silk was recorded to be 192,692 MT in the global context. Indian silk production is 30,348 MT. As per the data presented in the annual report of 2016-17, issued by the Central Silk Board (CSB), it has been demonstrated the requirement of 36,000 MT of raw silk in the Indian silk market. Where the production recorded to be 30348 MT and silk fabric imported as 3000 MT,

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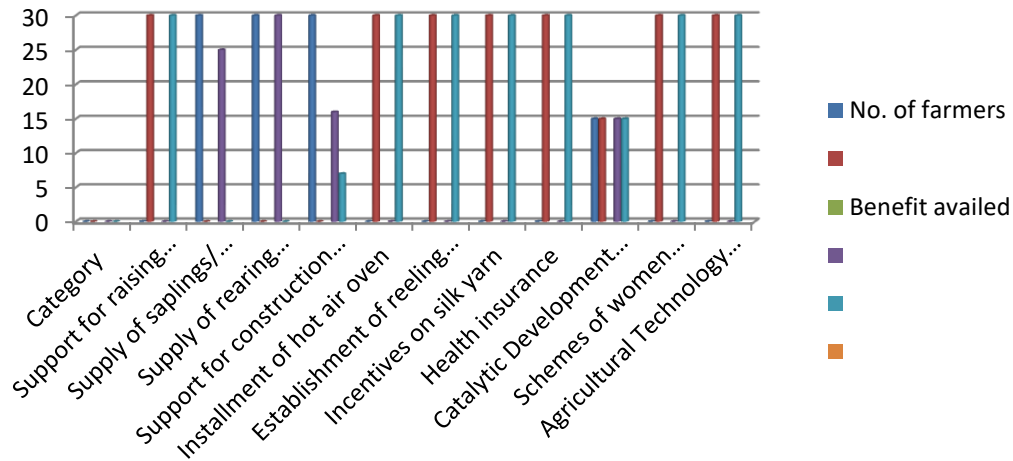


Figure 1. Support of SSDD under various schemes for development of Sericulture

silk export Rs. 2093.42 crore with a notable gap of 6000 MT in production [1]. Jammu and Kashmir union territory (J&K, UT) is world-famous for producing high-quality bivoltine silk of international grade and silk farming is a living culture among the various tribes hailing far-flung and rural areas. Presently more than 30,000 families are associated with this industry in J&K. Annually about 1100MT of the cocoon is produced in-state generating an income of about Rs. 19 crore and annual raw silk production are 146 MT. As per the recent data, sericulture is reported to be operational in approximately 2800 villages of the UT with 7 lakh mulberry trees reported as 53 percent and 47 percent from Jammu and Kashmir regions respectively. UT also holds the record of the annual production of 6,680 quintals of raw silk amounting to Rs. 50 crores. The state is blessed with a conducive atmosphere to produce the bivoltine silk of international quality standards [2, 14].

Table 1. General information of the respondents under study

SN.	Category	Criteria	No. of Farmers	Percentage (%)
1. Age (in years)				
a	Young	< 35	02	6.6
b	Middle	35-50	16	53.3
c	Old	>50	07	23.3
2. Education (in standards)				
a	Illiterate		09	30
b	Below 10th		19	76
c	12th		02	6.6
d	Graduate		0	0
e	Post-graduate		0	0
3. Family size (No.)				
a	Big	>4	09	30
b	Medium	4-6	14	46.6
c	Small	<6	07	23.3
4. Belonging to APL or BPL				
a.	APL	14		46.6
b.	BPL	16		53.3
5. Belonging to				
	General	26		86.6
	SC	01		3.3
	ST	03		10
	OBC	0		0
6. Any Govt. employee from family				
	Yes	02		6.6



	No	28	93.3
7. Number of members involved in sericulture			
	>4	08	26.6
	4-6	12	40
	<6	10	33.3
8. Main occupation			
a	Agriculture	-	30 100
b	Agriculture with Sericulture	-	30 100
c	Service	-	02 6.6
9. Average income generated from sericulture			
	>5000	03	10
	5000-10000	09	30
	<10000	19	63.3
10. Annual income			
	>10000	03	10
	10000-30000	25	83.3
	<30000	02	6.6
11. Adopted sericulture as			
	Integrated crop	30	100
	Main crop	0	0
12. Having own land			
	Yes	30	100
	No	0	0
13. Total land			
	>5 Kanals	22	73.3
	5-10 Kanals	04	13.3
	<10 Kanals	02	6.6
14. Type of land			
	Irrigated	0	0
	Rainfed	30	100
	Under cultivation	30	100
	Bared land	0	0
15. Source of irrigation			
	Canal irrigation	Na	-
	micro irrigation	Na	-
	Sprinkler irrigation	Na	-
	Drip irrigation	Na	-

The silkworm seed sector and rearing sector create large-scale employment generation for tribal people. Sericulture with its unique features plays an important role in upgrading the socio-economic conditions of rural or tribal folks and with employment opportunities to educated rural youth and women [5, 8]. Mulberry sericulture solves problems like unemployment, rural migration, and poverty elimination to a considerable extent not only in the irrigated belts but also in dryland areas. As sericulture is a cottage-based agro-enterprise mainly practiced by rural farmers, offers a wide range of entrepreneurial opportunities to tribal folks who can run sericulture as a subsidiary activity along with their main occupation. This will automatically impart positive gain improving their economic conditions. Therefore, considering the utmost significance of sericulture in boosting the rural livelihood, an attempt has been carried out to emphasize the role of sericulture among tribal folks hailing in Poonch District, for the revitalization of the bivoltine silk industry in Jammu and Kashmir specifically among marginal farmers.

Methodology

The current research problem was designed at the Department of Sericulture, Poonch Campus, University of Jammu, and the survey was carried out in Poonch District of Jammu and Kashmir, which was purposively selected based on potentiality for more cocoon production and having the maximum number of beneficiaries, to evaluate the constraints responsible for expected yield gap and for formulating future strategies to popularize the concept of silkworm rearing among the tribal folks for strengthening their livelihood. Due to the pandemic spread of COVID-19, the present investigation was restricted to 25 respondents of a single district only, and data on various parameters were collected by telephonic

conversation and by personal visits where ever possible. The methodology followed for collection of data was in the form of a questionnaire as

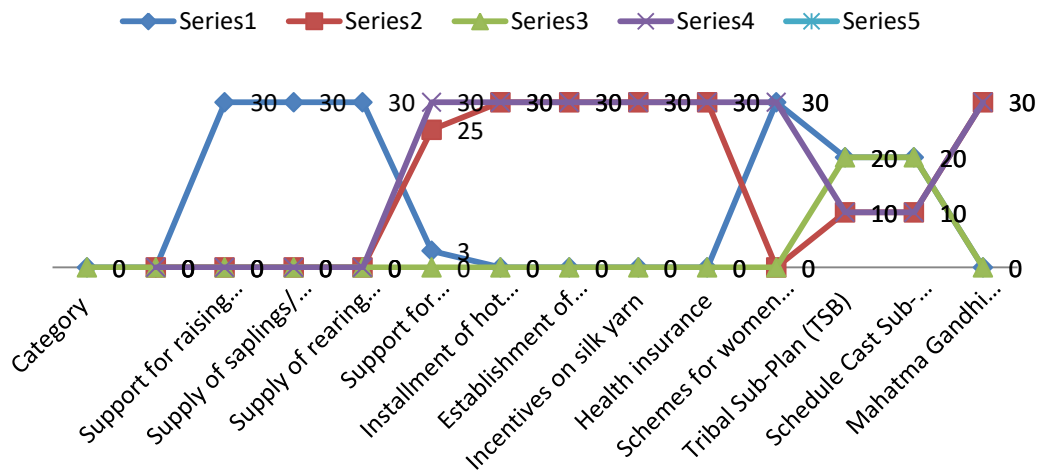


Figure 2. Support of CSB under various schemes for development of Sericulture

presented in the results section and the data thus obtained was analyzed by using Statistical tools like average and standard deviation for recorded variables to validate the results statistically.

Results and Discussion

The study on the personal profile of the respondents demonstrated that maximum farmers were found to be illiterate or below the 10th standard which depicted a very low literacy level among the selected respondents. The low literacy rate among the sericulture farmers has been found to pose a negative impact on the adoption of the latest technologies as they face difficulty in operating various machines as earlier reported by [9,16]. In addition to education, experience in sericulture specifically in silkworm rearing, and less participation of family members in silkworm rearing was recorded to be one of the most important parameters resulting in the ultimate fate of the crop [Table-1 and Table 2S1]. As less experienced in silkworm rearing recorded among the respondents, accounted for low yield and this finding lies in close conformity with the results obtained by Chauhan et al., [16] who elaborated the production trend in J&K and strongly emphasized the importance of education in improvement of sericulture. The current study also suggested that all the respondents were recorded to have enough irrigated land area for agriculture and sericulture practices and could be utilized for improving the productivity status as reported by K. Fatima [10] who also described that area is the basic requirement for sericulture industry. The most common problem identified among the studied respondents was the unavailability of separate chawki garden, poor quality of the mulberry leaf, improper supply of chawki worms, lack of separate rearing house, insufficient rearing appliances, the poor practice of disinfection techniques, transportation of chawki worms during the day time, long distance from the nearby cocoon market and fluctuation in cocoon price (Table-2S1). All these obstacles hinder the development of sericulture as earlier reported by the studies conducted by Khan et al.,[11], K. Fatima, [10] and Dar et al.,[17], who attempted to examine the performance of the silk industry in Jammu and Kashmir.

The present study revealed poor knowledge and skill level of the farmers on the latest technological aspects of mechanization in sericulture. The reason can be attributed to less participation of the farmers in training and awareness programs as described in Table 2S1 and Table 3S2. Among the selected 25 respondents, only 01 farmers have attended field trips organized by the State Sericulture Development Department (SSDD) which represents the drawback of the extension services of the Central Silk Board

(CSB) and SSD ([Table 4S3](#), Figure 1 and 2). The respondents were also observed to have minimum interaction with the extension servants and have been recorded to possess very occasional interaction sessions in programs organized by SSDD and CSB showing minimum exposure to mass media and extension

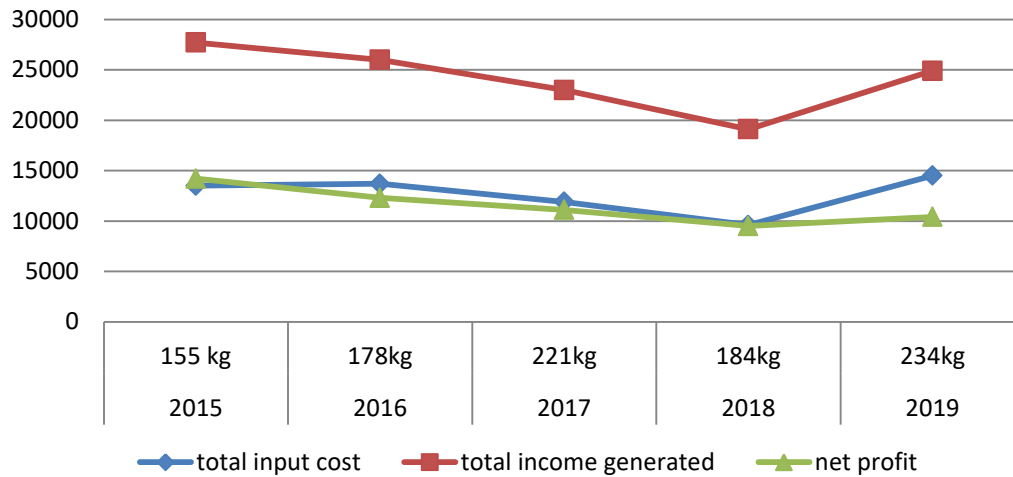


Figure 3. Status of silkworm rearing of last 5 years in the Poonch districts

services ([Table 5S4](#)). Similar results have been also reported by Khan et al., [7] where they highlighted the significance of cluster promotion program which resulted in wider acceptability and adoption of silkworm rearing among the farmers of Bandipora district of UT of J&K, and similar findings have also been made by Girish et al., [5].

The main focus of the present study was to create awareness of the importance of sericulture among the tribal folk who primarily depend on animal and cattle farming for sustaining their livelihood. The results showed the utmost requirement of strengthening the extension services for the promotion of sericulture in rural and far-flung border areas of the Poonch district. Singh et al., [8] and Sreenivas [3-4] supported that emphasis should be made on improving the technical skills of the farmers in terms of silkworm rearing, mulberry cultivation, and feeding management to ensure good quality cocoon crop harvest. The scenario of cocoon crop productivity of last five years in terms of yield, total input cost, and net gain in district Poonch represented an increasing trend in the net productivity over the years. The total production in the studied district was recorded to be highest during the year 2019 with 234 kg of cocoon yield followed by 2017 with 221kg of cocoons and least production was recorded for the year 2015 as 155kg and the net income and profit to the farmers also highest in the year 2015 as Rs. 27700 and Rs. 14200 respectively ([Table 6S5](#) and Figure 3). This finding supports the observations of Sharma et al., [1], Langerodi et al., [12], and Ahmed et al., [13].

Results obtained from the current survey indicated that the majority of the sericulture farmers were recorded to belong from the general category constituting about 86.6 percent of the total number of farmers followed by schedule caste and schedule tribe(SC and ST) both constituting about three, three percent of the total respondents. Therefore, it has been concluded that no doubt Poonch district is having enough potential to contribute significantly to the overall productivity of the state but the farmers belonging to SC and ST communities were found to have less association with sericulture, which represents a contrary picture when compared to other sericulture districts. The current observation lies in close conformity with the results presented by various researchers [6, 9, 15-16]. The survey indicated the keen interest of tribal farmers in silk farming but due to lack of knowledge, facilities, and scientific support they could not yield full of their potential. The tribal folk generally constitute the marginal farmers with limited land and resources. Thus sericulture could serve as an additional source for generating income for the farmers with no land or fewer



resources. Therefore, it has been suggested to pay attention to the popularization of sericulture among the tribal folk of the Poonch district to enhance the promotion of sericulture and strengthen the socio-economic status of sericulture farmers across the UT of Jammu and Kashmir.

Conclusion

Results obtained from the current survey indicated that the majority of the sericulture farmers were recorded to belong from the general category constituting about 86.6 percent of the total number of farmers followed by SC and ST both constituting about three, three percent of the total respondents. Therefore, it has been concluded that no doubt Poonch district is having enough potential to contribute significantly to the overall productivity of the state but the farmers belonging to SC and ST communities were found to have less association with sericulture, which represents a contrary picture when compared to other sericulture districts. The tribal people hailing the Poonch district generally hold good skills, work capability and the favorable environmental conditions serve ideal circumstances for the adoption of sericulture among them. Therefore, it is suggested that the extension functionaries should take adequate steps to organize timely extension programs, training camps, and workshops or Kisan meals to familiarize the sericulture as a skill development-oriented field among the young youth particularly belonging to tribal folk of the district. As the study indicated the strong need for the creation of awareness among the tribal folk mainly on rearing practices which could help farmers to yield gainful returns. As sericulture is an agro-based rural enterprise and tribal farmers are generally observed to have limited land or no land at all. Under such circumstances of limited resources, sericulture offers them the opportunity to yield gainful returns from silkworm rearing. Moreover, the farmers were observed to have a very strong interest in silkworm rearing but due to lack of awareness and facilities, they could not achieve the output as per the expectations. Therefore, if extension services will be extended to them in terms of Kisan Melas, farmers meet or awareness and training programs then the target of sericulture promotion could be made possible which helps the tribes to strengthen their economic status as well. This would help not only to improve the farmers' yield realization but also increase their income through sericulture which can attribute to the elevation of socio-economic status of the farmers by the concept of low investment and high returns in a comparatively shorter period of time.

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