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Jammu and Kashmir silk industry: Problems and prospects

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Abstract

Sericulture is an agro industry, suits rural farmers, artisans and entrepreneurs requiring less investment with high returns. Sericulture is an art rather than a science which deals with the rearing of silkworms for the production of cocoons, a raw material for the silk production. India has a rich and complex history in silk production and its silk trade dates back to 15th century. Sericulture industry provides employment to approximately 9.18 million persons. India is the only country in the world with monopoly of producing all the four commercially known silks viz., Mulberry, Tasar, Eri and Muga. Sericulture is an enterprise which plays an important role in sustaining Jammu & Kashmir (J&K) UT's economy. The UT produced about 800 MT of cocoons during 2019-20 with income generation of about Rs 25.00 crore under pre-cocoon sector and an estimated Rs 30.00 crore under post-cocoon/yarn production excluding value additions in silken fabric/products sales. There is a vast scope of technology adoption, capacity building of the cultivators and implementation of global best practices. 70% cocoon crop produced in the UT is sold to people from outside the UT. Establishment of adequate silk reeling facilities and infrastructure related to forward linkages will add tremendous value to the existing value. Emphasis should be led on up gradation of knowledge and skill of the development/extension workers and farmers through need based training programmes. Facilitate transfer of technology to silkworm rearers and explore new areas especially with the involvement of women folk are the major steps to be taken to revive this age old industry.

Keywords: Sericulture, industry, Jammu, Kashmir

Introduction

Sericulture being an agro industry, suits rural farmers, artisans and entrepreneurs requiring less investment with high returns (Ganie *et al.*, 2012) [7]. Industry plays a vital role in enhancing the rural economy of our country. Execution of innovations and novel approaches by different research institutions pertaining to mulberry as well as cocoon production has made the people to take sericulture as main occupation.

Sericulture is an art rather than a science which deals with the rearing of silkworms for the production of cocoons, a raw material for the silk production (Kamili and Masoodi, 2000) [9]. Silk cocoon is the only cash crop which gives returns in a minimum period of 30 days having squat gestation period ensuring a rapid rehearsal of resources (Chouhan *et al.*, 2016) [4].

Status of Indian silk industry

Silk is the most luxurious fabric in the world with unprecedented glory, legitimate lustre, and intrinsic empathy for dyes, high absorbance, light weight, mushy touch and high in durability. Because of these distinctive qualities silk is known as the "Queen of Textiles" and "Fabric of Heaven" over the world. On the other hand, it provides livelihood opportunity for millions, owing to its high employment promise, less capital prerequisite and well paid nature of its production. The very nature of this industry with its rural based on-farm and off-farm activities and enormous employment generation potential has attracted the attention of the planners and policy makers to recognize the industry among one of the most appropriate avenues for socio-economic development of a largely agrarian economy of India. Silk has been intermingled with the life and culture of the Indians. India has a rich and complex history in silk production and its silk trade which dates back to 15th century. Sericulture industry provides employment to approximately 9.18 million persons in rural and semi-urban areas in India (Anonymous 2020) [1]. India is the only country in the world with monopoly of producing all the four commercially known silks viz., Mulberry, Tasar, Eri and Muga, out of these muga silk also

known as golden silk is only produced in India. India is the second largest producer of raw silk after China and the biggest consumer of raw silk and silk fabrics. Among the four varieties of silk produced in 2019, Mulberry accounted for 70.21% (25,384MT), Tasar 9.32% (3,370MT), Eri 19.80% (7,157 MT) and Muga 0.66% (240 MT) of the total raw silk production of 36,152 MT (Anonymous, 2020) [1].

Mulberry foliage is the only food for the silkworm (*Bombyx mori* L.) and is grown under varied climatic conditions ranging from temperate to tropical. Mulberry leaf is a major economic component in mulberry silk production since the quality and quantity of leaf produced per unit area has a direct bearing on cocoon harvest. In India, most states have taken up mulberry silk production as an important agro-industry with excellent results. The total acreage of mulberry in India is around 282,244 ha. The details of the area under mulberry cultivation in different states and UT's in India are shown in the table 1 (Anonymous, 2020b) [2]:

Table 1: Area under mulberry cultivation in different states & UT's in India

S. No.	State	Area (HAC)
1.	Andhra Pradesh	38,084
2.	Assam	22,813
3.	Jammu And Kashmir	34,717
4.	Karnataka	1,66,000
5.	Kerala	1,164
6.	Madhya Pradesh	62,043
7.	Manipur	25,975
8.	Tamil Nadu	9,491
9.	Uttar Pradesh	5,665
10.	West Bengal	1021,358
11.	Others	4,934

Status of Jammu and Kashmir Silk industry

Sericulture is an enterprise which plays an important role in

sustaining Jammu & Kashmir (J&K) UT's economy. It has been since time immemorial as recorded in ancient history literature that sericulture originated from Kashmir. The origin of sericulture in Kashmir is evident from Mirza Muhammad Haider's book "Tarikhi Rashide". The great king of Kashmir Sultan Zain-ul-Abideen who is founder of industrial Kashmir gave special attention to this industry by introducing better techniques. As per reports Europe was the first continent with which Kashmir had started its silk trade. The reports show that in the year 1855, Kashmir was in a position to supply 25000 oz of silkworm seeds to Europe (Baqual, 1995) [3]. The history of sericulture in Jammu & Kashmir state reveals that the silk industry was demonopolised in 1988. Jammu and Kashmir enjoy the best climate for bivoltine silkworm rearing with Kashmir valley being very congenial for bivoltine cocoon production (Hussain, 2002) [8], which is ideal for producing international grade silks of 3A and above; which is majorly required by power looms and export-oriented units. Out of the total mulberry silk production in the country, the bivoltine silk production constitutes only 16%, while rest of the mulberry silk production is multivoltine in nature which is relatively inferior in yield and quality in comparison to bivoltine silk. Currently, sericulture is a subsidiary source of income which is practiced by about 27000 families in all the Districts of the newly created Union Territory of Jammu and Kashmir (Anonymous, 2020b) [2]. Majority of these families belong to economically weaker sections of the society such as Schedule castes, Scheduled Tribes, landless and other low-income rural people with majority of womenfolk. Udhampur, Rajouri, Kathua, Anantnag, Bandipore, Baramulla and Kupwara are the major Cocoon producing districts (Dar *et al.*, 2020) [5]. The UT produced about 800 MT of cocoons during 2019-20 with income generation of about Rs 25.00 crore under pre-cocoon sector and an estimated Rs 30.00 crore under post-cocoon/yarn production excluding value additions in silken fabric/products sales (Table 2).

Table 2: Production statistics in Jammu and Kashmir (Anonymous, 2020b) [2]

Year	Cocoon Production (MT)	Income Generation (Lac Rs.)	Average Price of cocoons/Kg	Productivity Per Oz (Kg)	Silkworm Rearers
2008-09	738	455.67	192.00	32.00	19700
2009-10	810	800.00	300.00	35.00	22800
2010-11	860	1100.00	410.00	35.00	25500
2011-12	917	963.00	350.00	37.00	27000
2012-13	901	1193.00	397.00	37.00	28000
2013-14	1022	2026.00	630.00	39.00	29390
2014-15	1032	1907.50	625.00	37.00	30894
2015-16	944	2020.00	650.00	37.00	30894
2016-17	973	2200.00	700.00	38.00	27115
2017-18	1084	2110.00	750.00	38.00	-
2018-19	990	2300.00	800.00	39.00	-
2019-20	950	2250.00	850.00	42.00	-

Jammu and Kashmir is the only UT of the country which is at the same altitude in which leading bivoltine sericulture countries of the world lie. Also, Jammu and Kashmir has variable agro-climatic zones and cradles diverse mulberry genetic resources. It is estimated that about 35% of the available 65 lakh mulberry trees in Jammu and Kashmir comprise of the local/wild genotypes. There are four indigenous species of mulberry viz *Morus indica*, *M. alba*, *M. laevigata*, and *M. serrata*. Jammu and Kashmir have the privilege of possessing all the four indigenous species of mulberry. Because of its adaptability to cross-pollination with no inter-specific reproductive barriers a vast range of diversity

in the genetic stocks has crept in thereby rendering it highly heterozygous plant species, as a result, every plant being different from other in the natural population.

Opportunities

- India imports about 4000 MT of raw silk from China to cater its power looms – Jammu and Kashmir as a unique bivoltine UT can fill this gap and can become a leading silk producing UT.
- Sericulture involves a number of processes right from mulberry plantation through silkworm rearing, reeling, weaving and marketing and thus engaging large number

of people including women. Once promoted on a larger scale with value addition, sericulture has the potential to provide gainful employment to lacs of people of the UT.

- There is a vast scope of technology adoption, capacity building of the cultivators and implementation of global best practices.
- 70% cocoon crop produced in the UT is sold to people from outside the UT. Establishment of adequate silk reeling facilities and infrastructure related to forward linkages will add tremendous value to the existing value.

Future Priorities for J & K

- Focused approach to evolve region / season specific cost effective technologies with the main aim to address the constraints and improve the production / productivity.
- Development of appropriate package of practices for constant up gradation of productivity of mulberry and silkworm races.
- Undertake programme to promote and develop participatory approach for effective adoption of technologies by the users and encourage such ideas through 'Cluster Approach' by establishing Cluster Development Centers in potential areas and encourage implementation through SHGs, NGOs, or Co-operative Societies, etc.
- To conduct research in identified priority areas viz. soil science, disease forecasting and forewarning and establishment of farmers field schools.
- With the help of meteorological data and bionomical studies strengthen the pest and disease forecasting and forewarning system, in order to provide timely messages to the farming community for undertaking effective advocated /needed measures to minimize the crop loss.
- Emphasis on up gradation of knowledge and skill of the development/extension workers and farmers through need based training programmes.

Problems of Sericulture in J & K state

In spite of strengths, there are still problems in promotion of sericulture in J & K state. Important problems are enumerated below –

- Silkworm seeds are distributed more than the requirement, which lead to leaf shortage in the later stages of rearing.
- Farmers conduct rearing in dwelling houses without proper ventilation and do not have separate rearing houses.
- Farmers are reluctant to disinfect their houses properly as they themselves live in the same houses.
- Unhygienic methods of rearing leading to disease outbreak.
- Most of the farmers are supplied incubated seed only and not the chawkie worms.
- Farmers use neither stands nor trays for rearing silkworms and rear them either on floors or temporary shelves under crowded conditions.
- Poor quality of mulberry leaf leading to prolonged larval life.
- Monocropping and low leaf production from age old plants of inferior genetic stock.
- Spinning of cocoons is not done properly and sun drying of cocoons is very common affecting the reliability and quality of silk.

- Due to these defects, farmers are unable to get remunerative price for their cocoons.
- Weak sericulture extension mechanism.
- Marketing facilities are not adequate.

Steps to be taken for revival and boosting of silk industry in J & K

- Enrich the Mulberry wealth in Jammu and Kashmir by carrying out massive plantation drives.
- Strengthen the rearing Infrastructure.
- Facilitate Transfer of Technology for silkworm rearing and cocoon production.
- Ensure capacity building and enhancement of skills of the rearers and field functionaries through effective training programs.
- Promote women participation in sericulture activities.
- Create a thriving post-cocoon sector in the UT.
- Introduce sericulture in unexplored areas (Dar, *et al.*, 2020) [6]
- Promote intercropping of various crops with mulberry plantation.
- Introduce sericulture as a component in integrated Farming.

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