An Empirical Study of Cocoon Production in Jammu and Kashmir

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Abstract

Sericulture is agro-based labour intensive and cottage industry best suited for small land holdings which require little investment for production. Sericulture involves two distinct activities, cocoon and raw silk production. The important contributing factor for cocoon production is mulberry leaves, disease free layings, labour and disinfected charges on pests. The focus of this paper was on the input-output relation of cocoon production. For this purpose Cobb-Douglas production was used and result states that all coefficients were found significant both at 1% and 5% level of significance. However, it is disease free layings and mulberry leaves which contributes more in cocoon production than others factors like labours used for rearing and disinfected charges on pests.

Keywords: Cobb-Douglas, Production, Cocoon, Labours, Disease free layings, inputs.

Introduction

Sericulture industry has occupied a prominent place in the industrial development in Jammu and Kashmir. Sericulture industry in Jammu and Kashmir having glorious history in the past but still is not having bright name in silk production and export. In spite of having suitable agro-climatic conditions for the development of silk industry, Jammu and Kashmir produces negligible amount of silk products every year *(Fatima 2011).*

The climate of Kashmir is temperate congenial and suitable for rearing both Multivoltine and bivoltine silkworm species for cocoon production. State is known for producing bivoltine silk since the beginning of the rearing of silkworm. These cocoons are superior to the Multivoltine ones produced in the rest of the country, and are comparable to international quality. Sericulture helps in improving the economic condition of the landless farmers and weaker sections of the society and providing employment opportunities especially for women during pre and post cocoon activities. Sericulture supplements the income of the farmers in addition to their returns from the other crops. With the increased economic needs due to changing social status and unpredictable market trend of different kinds of produces by the farmers of the state, sericulture has assumed special significance as an important subsidiary occupation. Presently about 29300 rural families generating income worth Rs.2026 lakh *(J&K Economics Survey 2011)* annually & 1 lakh working days in private reeling sector are associated with this profession *(Ganie, et al., 2012).*

History of Sericulture in Jammu and Kashmir:- During the medieval period under Mughal regime, Kashmir attained great progress under the reign of king Zain-ul-Abbid, because they were the great lovers of silken cloths *(Fatima 2013).* The writings of the medieval like Mirza Haider in his 'Tarikh-i-Rashidi' and 'Aini- Akbari' contain some references to the silk industry and

large number of mulberry trees among the 'wonders of Kashmir'. Kashmir shawls and woven silks were quite popular in the Emperor Akbar's court *(Ahmad 1997)*.

The artistic skills of the traditional handloom in Jammu and Kashmir weavers are second to none. Silk weaving was introduced in Kashmir by Maharaja Pratap Singh in the late 19th century. The small silk industry in and around Srinagar produces exclusive superfine quality silk-chiffon, tabby, chinon, crepe, satin, charmose satin and habutti silk *(Yousuf, et al., 2013)*.

Objective:

To examine the cocoon production in relation of factor input and output in the state of Jammu and Kashmir.

Hypothesis
H_o= There is no significant impact of different cocoon inputs on cocoon production
H_1= There is significant impact of different cocoon inputs on cocoon production

Methodology

The present study is purely based on primary data analysis, which has been collected from eight districts from the state of Jammu and Kashmir. Purposive sampling method was used in the selection of districts and four districts from Kashmir division and four from Jammu division were selected. However out of four districts two districts were small silk producing district (*Jammu, Doda and Shopian, Kulgam*) and two were high silk producing districts (*Udhampur, Rajouri and Anantnang, Kupwara*) respectively from Jammu and Kashmir divisions. Then at village level random sampling was used to collect data from respondents and the Respondents was divided into two categories first category was large rearers whose cocoon production was above 30 Kg during last year and the other category was small rearers who produced less than 30 kg of cocoon during last year. Finally 320 respondents were interviewed in order to collected sufficient data from them. In order to examine the influences of factor inputs on cocoon production, Cobb-Douglas production function was used in line with *Nirmala and Subramaniyan 2001; Reddy and Reddy 2013; Hajkova and Jaromir 2007;* Rani *2011; Lakshmanan and Geethadevi 1995-96; Mane et al., 2012* and the function is fitted as under:

$$Y_i = A_0 X_{1i}^{\beta_1} X_{2i}^{\beta_2} X_{3i}^{\beta_3} X_{4i}^{\beta_4} X_{5i}^{\beta_5} u_i$$

$$l_n Y_i = l_n A + \beta_1 l_n X_{1i} + \beta_2 l_n X_{2i} + \beta_3 l_n X_{3i} + \beta_4 l_n X_{4i} + \beta_5 l_n X_{5i}$$

Where Y=Output (cocoon production)

X_1= Labours involved in cocoon production
X_2= Disease free layings brought
X_3= Price of Cocoon
X_4= Disinfected charges on Pests
X_5= Fertilizer Cost
U_i = Error Term
β_1 ....β_5 are the regression coefficients
A = Efficiency parameter or total factor productivity

the regression coefficients of the above mentioned variables along with R^2 and 'F' values are presented in the table 1.1.

Result and Discussion

It is evident from the table 1.1 that the all the regression coefficients are significant and have positive influence on cocoon production in the state of Jammu and Kashmir. All the regression coefficients are significant and have positive influence on cocoon production like Fertilizer cost (0.003), labour cost (0.002), price of cocoon (0.033), number of disease free layings (5.422) and disinfected charges (0.003) has found significant at 5% level of significance. Therefore we reject the null hypothesis and conclude that there is significant relationship between cocoon production and input factors. The result is consistent with the studies of *Marihonnaiah (1986), Kulkarni (1992) and Sumanta Behera (2004), Neelakantasastry (1982)*, they identified that DFLs, human labour and disinfectants had positive and significant relationship with cocoon production. The multiple correlation coefficient shows 97 per cent of variation is explained by these four variables and the remaining 4 per cent is unexplained variation which may be due to other factors like price of raw silk and area under mulberry cultivation, climatic conditions etc which has been taken constant in this model. F-value was also calculated as 2184.046 and was found significant at 1% level of significance.

Table 1.1: The Influence of Input Factors on Silk Cocoon Production in the State of Jammu and Kashmir

Model	Un standardized Coefficients		Standardized Coefficients	t- statistics	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	25.956	1.917		**13.540**	.000
Fertilizer Cost (x_1)	0.003	.001	0.453 (β_1)	**3.555**	.000
Labour Cost (x_2)	0.002	.000	0.642 (β_2)	**29.359**	.000
Price of Cocoons(x_3)	0.032	.002	0.164 (β_3)	**16.100**	.000
Number of disease-free layings (x_4)	5.422	.531	0.239 (β_4)	**10.214**	.000
Disinfected charges on Pests(x_5)	0.003	.002	0.059 (β_5)	**5.267**	.000
F-Value	**2184.046**				.000

Source: Primary Survey 2015

Conclusion

The analysis reveals the most influential factor for cocoon production is disease free layings. It was due to fact that most of times these layings were deficit in supply with relation to demand that is why it's showed efficient and highly contributing factor in cocoon production. Therefore government should either increase the supply of seed grainages or to give licence for rearing for the supply of disease free layings. So that supply seeds increase to increase cocoon production. The other factors are least important as the empirical study reveals, therefore it is necessary to provide information centres for proper utilisation of inputs in cocoon production or to provide them

financial assistance, rearing facilities etc so that the cocoon is produced efficiently in the state of Jammu and Kashmir.

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