

Economic analysis of the production of mulberry silkworm cocoons in Mandya district of Karnataka

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Abstract

The present study was conducted in the Mandya district of Karnataka during 2024-2025 in the view to assess the economics of the production of mulberry silkworm cocoons. The data was collected personally by rearing silkworm by taking the land for lease. The total cost of cocoon production was accounted for ₹49,985 for 100 disease free laying (dfls), of which ₹47,485 (94.9%) was incurred on variable costs and ₹2,500 (5.00%) on fixed costs. Out of the total cost, the expenditure on mulberry leaves (42.71%) formed the major component followed by the cost of human labour (30.00%). The yield obtained was 97 kg per 100 DFLs with 9 Kg of Jelly cocoon yield. The net income obtained by farmers was accounted for ₹12,149/100 DFLs with a gross income of ₹62,134/ 100DFLs.

Keywords: Economics, DFLs, cocoon production, expenditure, total cost, net income.

1. Introduction

The word “sericulture” is derived from the Greek word “serikos” meaning “silk” and “culture” meaning “rearing”. Sericulture is a labour oriented, low investment, agrarian, small scale industry which suits both marginal and small land holders because of its high returns, short gestation period and it creates opportunity for women employment. Silk is the “Queen of textiles” no other fibre is a match to important role in natural silk. Among the four varieties of silk produced in 2023-24, Mulberry silk accounts for 76 per cent (29,892MT) of the total raw silk production of in India (38,913MT). Mulberry raw silk production is mainly distributed in Karnataka, Andhra Pradesh and Tamil Nadu in the tropical belt, and West Bengal and Jammu and Kashmir in the sub-tropical and temperate zones respectively. Sericulture includes growing mulberry, rearing silkworms, reeling silk thread from cocoons, weaving the silk yarn, and further processing to produce the silk fabric (Kumar *et al.*, 2019). The cultivation of mulberry and rearing of silkworms are farm-based activities managed by the silkworm cocoon producers. Sericulture plays a vital role in the socio-economic development of the rural sector. It is an indoor activity that gives frequent periodicity of economic returns throughout the year. It is also well suited for the womenfolk of the rural sector. Sericulture has been an important income-generating cottage-based industry in the country. This industry has been providing sustainable income for different strata of people in rural society. Sericulture is providing employment opportunities to nearly 9.47 million people in the country. It is being one of the important enterprises undertaken by the farmers of Karnataka in the general and southern part of Karnataka in particular.

2. Materials and Method

1. Malavalli taluk of Mandya district was selected as study area.

2. Data was collected by self rearing of silkworm of 100dfl's by taking the land for lease.
3. The ruling double hybrids (FC1XFC2) were used for the present study.

3. Results

Table 1 revealed that the cost structure of the farmers in cocoon production, where the total cost was accounted for ₹49,985/100DFLs, of which ₹47,485 (94.9 %) was incurred on variable costs and ₹2,500 (5%) on fixed costs (including rearing house). Out of the total cost of silkworm rearing, the expenditure on mulberry leaves (42.71 %) formed the major component followed by the cost of human labour (30.00 %). The expenditure on DFLs was 14 percent, and hiring of mountages was 4.32 per cent. However, we were using our own mountages but the majority of the farmers were hiring the mountages. So the imputed cost of mountages was taken under depreciation separately in fixed costs and average hiring charges under variable costs.

Table 1: Total cost for the production of mulberry silkworm cocoon (Unit: ₹/100 DFLs)

Sl. No.	Particulars	Cost for 100dfl's	Percentage of total cost
A Variable costs			
1.	Costs of dfl's	7,000	14.00
2.	Human labour		
	1. Family labour	9,000	18.00
	2. Hired labour	6,000	12.00
	Total labour	15,000	30.00
3.	Disinfection		
	• Liquid disinfection	250	0.50
	• Petrol + Oil	240	0.48
	• Bed disinfectant	300	0.60
	• Lime	85	0.17
	• Bleaching powder	250	0.50
4.	Paraffin paper	200	0.40
5.	Uzi trap	550	1.10
6.	Newspaper	100	0.20
7.	Mulberry leaves	21,350	42.71
8.	Hiring of mountages	2160	4.32
	Sub total	25,485	50.9
B.	Fixed cost		

1.	Depreciation of rearing house and equipments	2,500	5.00
C.	Total cost (A+B)	49,985	99.9~100

Table 2: Yield and Returns per 100 dfls

Sl. No.	Particulars	Unit	Price (per unit)	Quantity (per 100 DFLs)	Returns (₹/100 DFLs)
1.	Cocoon yield	kg	622	97	60,334
2.	Jelly cocoon yield	kg	200	9	1,800
3.	Gross income	₹	-	-	62,134
4.	Total costs	₹	-	-	49,985
5.	Net income	₹	-	-	12,149
6.	Cost of production	₹/kg	-	-	515.3
7.	B: C Ratio	-	-	-	1.20 : 1

3.1 Returns from silkworm cocoon production

Table 2 shows that the cocoon yield obtained by was 97 kg of good cocoons and 9 Kg of Jelly cocoon per 100 DFLs. The net income obtained by silkworm cocoon production was ₹12,149/100 DFLs with a gross income of ₹62,134/100 DFLs. The total cost of production was ₹515.3 per kg of cocoons with B: C ratio of 1.20:1. By which one can have a profit of ₹1.20 per rupee invested.

4. Conclusion

Sericulture is an agro-based avocation which provides employment opportunities for lakhs of people and also in up liftment of rural society. As most of the rural people are depended on farming, sericulture is one of the best crop which provides good income compare to other crops. In this study it is concluded that the cocoon yield obtained by farmers was 97kg of good cocoons and 9Kg of Jelly cocoon per 100 DFLs. The net income obtained by silkworm cocoon production was ₹12149/100 DFLs with a gross income of ₹62134/100 DFLs. The total cost of production was ₹515.3 per kg of cocoons with B: C ratio of 1.20:1. By which one can have a profit of ₹1.20 per rupee invested.

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