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## **Economics of Sericulture Units in Sengaon Tahasil**

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### **Abstract:**

*Traditional farming methods and ignorance of importance of side business along with the simple farming are not known to a commonest farmer. Sericulture in one of the important side businesses in being carried by few farmers but is being ignored by most others. The animal reared during the business is Bombyxmori. The present study deals with the economic turn overs of some farms in the Tehsil through frequent field visits. The rate of raw cocoons sold in the market is lesser than the fixed prices of government, suggesting that there is an emergent need of development in field of sericulture along with development of silk processing industries in the region.*

**Keywords:** *Traditional farming, Sericulture, Bombyxmori, cocoons.*

### **1. Introduction**

Sericulture and apiculture are the unique practices in general entomology as they contribute to technical bases of development for use of insects as a bio resource for human life (Yamashita and Yaginuma 1991). Sericulture word is obtained from Greek word 'sricos' means silk. It is nothing but a skill to obtain silk from silk producing organisms. Sericulture involves the plant cultivation named Mulberry *Morusrubra*, also called Shaituk in Marathi. Mulberry leaf is commonly used for sericulture in almost all parts of world (Shristava et al 2009). More than 1000 different varieties of silk worms are being used in different ways for world over (Yamashita and Yaginuma 1991). Of these species *Bombyxmori* is mainly used at 95% and the silk obtained is known as Mulberry silk. *Bombyxmori* is amongst few genetically well-characterized insects next to the fruitfly, *Drosophila* (J. Nagraju, 2002). The silk obtained is called queen of textile as it is one of the costliest threads sold world over. Various fabric materials like dupions, plain silk, deluze, satins, chiffon, chinons, crepe and brocades are woven from mulberry silk.

First authentic reference to silk is found in the Chronicles of the Chou King of China (2200 B. C.) (Vainker, Shelagh, 2004). The discovery of silk from cocoons is historic and sudden. King Chou King of China reported that the worms were destroying mulberry trees in his garden. His queen tried to gather the cocoon of the moth. One of the cocoons suddenly fall in to hot tea cup and she found that cocoons was yielding a fine thread, industry of silk came in to existence thereafter. It was initially cultivated only members of Royal family. Later the silk rearing got spread to Korea, then to Tibet and India at the end.

Item	Mulberry sericulture	Sugarcane	Turmeric
Total input costs	48,659	30,575	29,610
Gross returns	96,132	60,200	55,317
Net returns	47,476	29,625	25,707
CB ratio	1:1.98	1:1.97	1:1.02
Crop period	1 year	1 year	4 – 5 months

*Table 1: Cost: Benefit analysis of mulberry sericulture and other competing crops.*

*Note: Data in Rs/acre/annum*

*D. Gangopadhyay 2008*

India ranks second in world's silk production after China from last 7 years. India produced around 28,708MTs (metric tons) in the year 2014, whereas it was 146,000MTs in China (International Sericulture Commission).

Country	2008	2009	2010	2011	2012	2013	2014
Bangladesh						24	26
Brazil	1177	811	770	558	614	550	560
Bulgaria	7.5	6.3	9.4	6	8.5	8.5	8
China	98620	84000	115000	104000	126000	130000	146000
Colombia	0.6	0.6	0.6	0.6	0.6	0.6	0.5
Egypt	3	3	0.3	0.7	0.7	0.7	0.82
India	18370	19690	21005	23060	23679	26480	28708
Indonesia	37	19	20	20	20	16	10
Iran	180	82	75	120	123	123	110
Japan	96	72	54	42	30	30	30
North Korea	-	-	-	300	300	300	320
South Korea/	3	3	3	3	1.5	1.6	1.2
Philippines	1	1	1	1	0.89	1	1.1
Syria	0.4	0.6	0.6	0.5	0.5	0.7	0.5
Thailand	1100	665	655	655	655	680	692
Tunisia	0.08	0.04	0.12	3	3.95	4	4
Turkey	15	20	18	22	22	25	32
Uzbekistan	770.5	780	940	940	940	980	1100
Vietnam	-	-	550	500	450	475	420
Madagascar	15	16	16	16	18	18	15
<b>Total</b>	<b>120396</b>	<b>106170</b>	<b>139118</b>	<b>130248</b>	<b>152868</b>	<b>159718</b>	<b>178039</b>

Table 2: The global silk production scenario is  
Courtesy: International sericulture commission.

Maharashtra State ranks eleventh in Total silk production of India, with plantation of 3744 ha of mulberry plants.

Grant Head	Grant Amount in Rs
Shade building	100000
Mulberry crop	25000/acre
Equipment's (Nets, Trey, Building wires. etc.)	40000
Total	165000

Table 3: Details of Grant in Hingoli District  
ATMA, Director, Hingoli District.

## 2. Material and Methods of Study

A total of 20 farmers from Hudi and Wad Hiwara of Sengaoon Tahasil were chosen for the present study. The GPS location of the villages are:

Hudi 19°42'N and 76°51'E, elevation 449m.

Wad Hiwara 19°43'N and 76°50'E, elevation 446m.

The farmers were interviewed for different questions in a questioner printed systematically. The questions were:

- Name of the farmer
- Educational qualification
- Area of farm being used under cultivation and quality of soil under cultivation
- Pre-construction expenses for consecutive years.
- The grant allotted for cultivation of plants and insects.
- Expenditure incurred for maintenance of plants.
- Expenditure for maintenance of insects (Including expenses for eggs and disinfection).
- Size of the silk worm rearing unit room and its approximate expenditure.
- Number of times the crop needed to be watered.
- Possible effect of changes in atmospheric conditions.
- Names of diseases and preventive measures taken.
- Willing ness of farmers for cultivation of crop in the next year.
- Income incurred from the crop through the sale of cocoons (during the current year and recent years).
- Transportation expenditure for the cocoons in the nearest market.

Ten farmers with extremities were interviewed and following results have been obtained.

## 3. Result

Details of Expenditure incurred by comparative businesses:

Different villages from the Sengaon Tehsil of district have been visited during the study. Interviews of 50 farmers working in the field have been taken on questionnaire sheet. It has been found that to start the business it takes one acre of area and a registration with District Sericulture office and fees of rupees one thousand to be a member of it followed by grants for mulberry crop sufficient to be cultivated in one acre and grants money to construct a house to build house for silk worm rearing.

The cost of silk worm is Rs 100/ 150 eggs. In the initial years of cultivation, the culture taken has been lesser (50 egg pouches) than in the peak period (150 egg pouches) which is after two years of construction. The average cultivation charge for the farm was Rs 10000/ acre, whereas the average expenditure for rearing of the moth was Rs 6000/year including the cost of disinfectants and medicines.

Initially crop of Mulberry *Morus rubra* planted in the field and on growth of plant up to two feet the eggs of silk worm are purchased from District Sericulture Department. It takes approximately The capital cost of each sericulture buildings were around 20000 rupees as it long lasted for five years without any significant maintenance in the same.

Once the shade is built, and fine trays are made ideal for cocoon rearing larva are supplied by the district sericulture department and are reared in trays. Initially the larvae are voracious feeders and are with the green leaves of mulberry thrice a day for initial eight days at consistent timings. Then the larvae are moult and now become less in feeding. Now the larvae are fed twice a day. The larva moults four times and then goes in cocoon stage. The cocoons are now ready to be sold.

The market prices for these cocoons are higher at Bangalore compared to those provided by Maharashtra Government. The rate of silk varies according to the market at which it is sold. The average value of the silk cocoon is 250Rs/kg and it also varies depending on the quality of silk. Yearly income of the silk is around 0.75 Lakh to 1.0 Lakh per year.

The quality of silk basically depends on cleanliness of the environment in which the silk worm is reared. The disease commonly occurring in the area is grasserie. It occurs because of lowered temperature and increased moisture. The ideal temperature for silk rearing is between 20- 28 degrees and humidity should be less than 70%. The mulberry barks generally get infected after two generations and the room has to be disinfected then. The commonest disinfecting medicine suggested on the disease grasserie is VetcareVijeta along with use of calcium carbonate.

#### 4. Discussion

In present study we have found that most of the farmers who were educated above matriculation preferred to undertake this practice of sericulture. Approximately one acre of land was cultivated with mulberry crop. Sericulture has significant turn over in the income of the farmers in SengaonTahasil but lacks significant knowledge of the cultivators in terms of quality of silk and market places to be searched. There is a desperate need of frequent workshops of farmers based on increasing quality of silk to get better market prices. There is a lack of cleanliness in the sericulture units, making silk worms more prone to diseases.

#### 5. Conclusion

We suggest that the buyback rates to the silk cocoons provided by the Government of Maharashtra are lesser than by Karnataka Government as a consequence farmer in the Tehsil and District sell most of their yield at Bangalore. Increasing awareness of farmers for health of worms and better quality of silk is needed immediately. We suggest the need of development of Silk Processing factories by the government under Make in Maharashtra Scheme in the district.

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