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Status of sericulture farming with special reference to Umarkhed Taluka in Yavatmal district (M. S.)

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Abstract

In India, agriculture is performed over years from ancient times and recently it contributes 20.2% of total country's GDP. Along with agriculture for the continuous income, source farmers prefer sericulture. In India 52360 villages, perform the sericulture for their economy. Sericulture, which is originally started from China, nowadays it is growing in the corners of India. In the background of this Maharashtra is the second rank holder state, as the 9790 farmers has planted mulberry crop for the cocoon production. From these 269 farmers are performing sericulture on the 207-acre land in Yavatmal district. It means that the share of the district in the total development of the sericulture is near about 5-6% in the state. The present study focus on the sericulture farming in the district including all taluka present over here. The primary and secondary data is collected for the better understanding of the current scenario. Primary data is collected by visiting sericulture plants in taluka and the secondary data is collected through reports publish by Divisional office of sericulture, Yavatmal Government of Maharashtra. The article mainly focus on the sericultural activities, features, status of the sericulture farm along with the mulberry planation and problems which are faced by the farmers.

Keywords: Sericulture, Silkworm, Yavatmal, Cocoon

Introduction

Silkworm is the larvae of the adult silk moth, which belongs to the order lepidoptera. Sericulture is art of rearing and producing raw silk from the cocoon by the larvae. Because of the less time consuming, low capital investment and the good returns association with agriculture the farmers in rural areas practices it. Sericulture industry is becoming the backbone of farmers as a secondary business in India. Because of some salient features, it is inclusive development for rural peoples (B.S. Angadi 2017). Sericulture is the cash crop, which provides frequent and attractive returns in tropical area (Dewangan Santosh Kumar 2017). India is the second most after the China which is famous for the production of the raw silk of all types of silk which is Tusar, Mulberry, Muga and Eri (Giridhar et.al. 2010).

Sericulture, practiced in 1,441 villages across 22 districts of Maharashtra (Kalantri and Jadhav, 2006), provides livelihoods for roughly 8 million families. The majority of these families (approximately 80%) reside in rural areas and rely on silk production as an agro-based cottage industry (B .R. Patil et.al 2006). Raw silk production is influenced by several factors, including mulberry plantation density per hectare, as studied in the Parbhani district of Maharashtra (Chaudhari et al., 2020). In addition to mulberry cultivation, favorable climatic conditions are also crucial for successful raw silk (cocoon) production. Ramathulla (2012) emphasizes the importance of proper care during silkworm spinning, noting the impact of temperature and humidity on post-cocoon silkworm parameters. The study also outlines strategies for managing climatic conditions to ensure successful cocoon crops. This study focuses on the Yavatmal district, located in the Vidarbha region of Maharashtra, an area known for its socio-economic development tied to agricultural products. In the district, sericulture was from many years as traditional crop but nowadays technology based farming is carried out in rural areas. Due to low time consuming, low investment and more profit young employees are actively participating in sericulture .Mulberry, Oak, Tasar, Eri, Muga these silk are cultivated in India from these in the district mainly Mulberry silk is taken by farmers. During study, it was observed that in Umarkhed taluka cultivation of silk crop is more comparatively than other places in Yavatmal District. Sericulture is growing agro based industry of India and for this, the production of raw silk from the corners of India have to be increase. The study will influences on the present status of the sericulture in Yavatmal district and what improvement should be done for the better production. The answers of the question like, is the sericulture is helpful to increase farmers income can be revels through the study.

Materials and Methods

The present study conducted in the Yavatmal district and the observations were recorded through primary and secondary data. Primary data collected by visiting the sericulture plants present in Umarkhed taluka and by interacting with the farmers. To find out the present status of crop the data was collected. Secondary data collected from the Yavatmal office of Sericulture Department, Government of Maharashtra. It is use to explain the development of sericulture farming in district and the various plans which were used for the best production.

Study area:

Yavatmal district has a generally hot and dry climate with moderately cold winters. The year can be divided into four seasons: the hot season (March to early June), the southwest monsoon season (June to September), the post-monsoon season (October and November), and the cold season (December to February).

The average rainfall in Yavatmal District is 911.34 mm. Recent years have seen a decline in Rabi cultivation, potentially due to inconsistent rainfall patterns. While some areas of the district suffer from insufficient rainfall, others are vulnerable to excessive rain. Heavy rainfall can damage crops, and in the past, it has even forced some villages in the Pusad taluka to abandon cultivation altogether. While the past 12 years have generally seen sufficient rainfall when timed appropriately, the 25-year average distribution is as follows: June (6 inches), July (12 inches), August (8 inches), September (7 inches), October (2 inches), and less than 1 inch in each of the remaining months. Yavatmal District has no weather observatory. While cooler and at a higher elevation than Amravati or Akola, it is not as cool as Buldhana. Pleasant breezes temper the heat, making for cool nights. However, the district has a reputation for prevalent fevers (Yavatmalgovt.in).

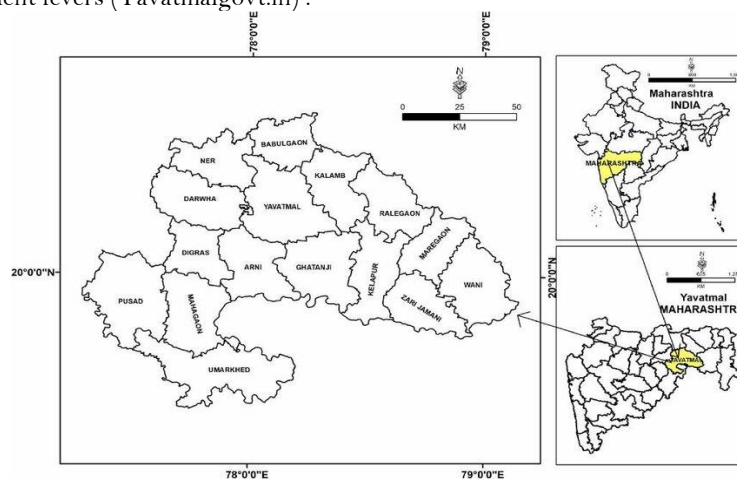


Fig: Map of Yavatmal District

Results and Discussion

According to the study, it was observed that farmers on large scale of cultivated land carry out the sericulture in district. In comparison of 7-8 years at starting mulberry plantation was carried out by less farmers but as the time passes and the knowledge of farming was given at the rural areas the interest was buildup and the plantation was increase in district. In the year of 2018-19 the plantation was more and because of this chawki which was distributed by government was high and it affect on the high production of raw quality of silk that is cocoon. But opposite to this it was observed and studied that at the time of covid pandemic the production was very less due to the factors like lockdown, lack of seeds, no transportation facilities. All this socio-economic factors are responsible for the production of cocoon.

Table No. 1: Year wise data of mulberry plantation, distribution and cocoon production at Yavatmal

Sr. no.	Year	Mulberry Plantation		Chawki Distribution			Cocoon production	
		Farmers	Land in acre	Farmers	Land in acre	Number of Chawki	In Kg	Production Amount in Lakh
1	2015&16	83	156	120	206.5	81300	43960	131.188
2	2016&17	119	135	168	245.5	78250	47051	152.367
3	2017&18	385	471.5	303	376.0	107550	60018	227.39014
4	2018&19	654	736	651	738.5	219250	143581	634.08196
5	2019&20	107	119.5	493	561.5	243200	170000	680.0000
6	2020&21	195	202	470	539.0	202900	100036	256.22085
7	2021&22	124	124.5	385	425.5	170000	98490	433.22387

Source: Divisonal office of Sericulture, Yavatmal

Some Features:

1. Eco-friendly crop: Sericulture is the crop where the grown mulberry plants are used for the feeding of the worm. No hazardous waste are released while cultivating crop rather the remaining waste are use as fertilizer for the another agricultural crop. Mulberry is the perennial crop due to this land is not open and it prevent from soil erosion. As the chemicals, which are used for the disinfection of rearing trays, are not hazardous so it prevent the ecosystem.
2. Less Investment and high Profit: Low cost investment technologies are used for the mulberry plantation such as single bud cutting method, nursery plantation. Moreover, farmers can take the crop for 5-6 times in a year on the plantation of 15- 20 years. Due to this feature the crop is prefer by the farmers in rural areas.
3. Women empowerment: Rearing of the raw silk through sericulture is the processes where the women can participate. Efforts are being made to strengthen women's participation and empowerment in sericulture. Women already make up approximately 60% of the sericulture workforce, contributing to various stages including food plant cultivation, leaf collection, silkworm rearing, reeling, spinning, and weaving. There is substantial involvement of women in this industry (Patil et al., 2009).
4. Easy cultivation: The crop can be cultivated easily only hygienic handling of worm is needed for the diseases free worms and good production.
5. Less time: The crop can be taken in less time, 5-6 batches are taken by the farmers in a year if the conditions are suitable.

Changes seen in the year:

As it is shown in the table in the previous years, the land under cultivation was less so the overall production was less but in the current years the production was comparatively more although the less land was under cultivation. The technologies, awareness in farmers, knowledge of crop, young farmers' interest these are the reasons behind the increase in the crop production. As these are, the some favourable conditions of the crop there are some drawbacks are also seen.

As shown in the years 20-21 the production was become so less as it was the lockdown period (covid period) in India. Low quality of chawki seeds distribution, unfavourable climatic condition, transport restrictions, lack of collective manpower working these some reasons were come out while interacting with farmers about less production.

Taluka Wise Status of Sericulture in the District:

Sericulture is the second most crop after the cotton in the Yavatmal district. In the world of agriculture, the district is well known for the white gold or as "cotton city" but along with this the district is attaining the development in the raw silk production by the help of new technologies. As shown in the table up to 69 villages are participating in silk rearing and uplifting there economy. Sericulture generates 170 man-days in comparison to other crops combinations like soyabean-wheat, cotton-pegionpea, soyabean-gram given by the study conducted in Maharashtra (Hajare, 2008). Some land of district is blessed with the favorable climate for practicing the the silk rearing since domestic demand od raw silk is increasing.

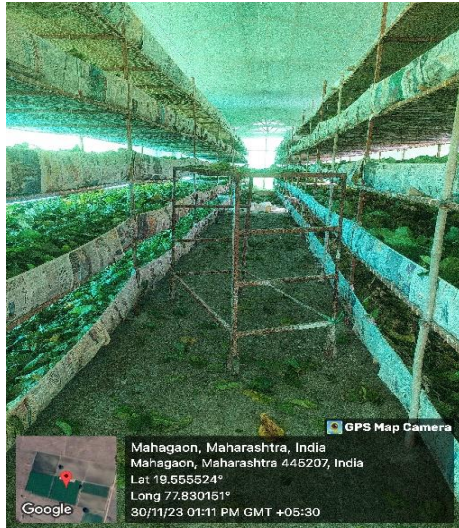
Production in Taluka:

In the district, sericulture is performed by bunch of peoples. Comparatively in Umarched Taluka from mulberry plantation up to the cocoon production rate is high than the other taluka. Up to 96 farmers take the crop in taluka and the contribution of the total production of cocoon of district is high. The climate of taluka is favourable for rearing of silkworm located at 19.60 N 77.70 E having the normal temperature up to 30-35°C while in winter it get reduces and humidity up to 60-70%.

Table No. 2 Taluka wise status of Mulberry, chawki and cocoon production during 2017-18

Sr No.	Taluka	No. of villages	Mulberry plantation		Chawki distribution			Cocoon Production	
			Farmers	Land in acre	Farmers	Land in acre	No. of Chawki	In Kg	Production amount in lakh
1	2	3	4	5	6	7	8	9	10
1	Yavatmal	10	28	46	18	33.5	5600	2759	9.6044
2	Umarched	10	96	118	87	108	42250	25503	100.4147
3	Mahagaon	4	32	40	31	39	12250	8087	33.77265
4	Pusad	11	59	76.5	78	95.5	16800	7064	25.36356
5	Digras	1	21	25	0	0	0	0	0
6	Ner	12	49	53	29	32	12150	5520	18.7803
7	Babulgaon	8	49	51	36	36	10100	6667	23.4419
8	Ralegaon	9	30	39	19	27	7700	4123	15.0062
9	Kalamb	4	21	23	5	5	700	295	1.0064
		69	385	471.5	303	376	107600	60018	227.3901

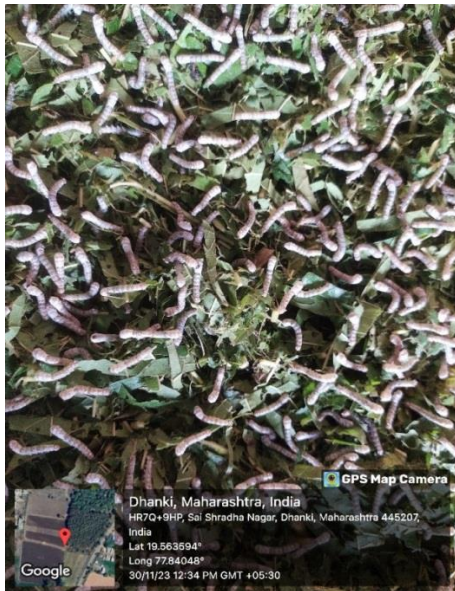
Source: Divisional Office of Sericulture, Yavatmal (status during 2017-18)



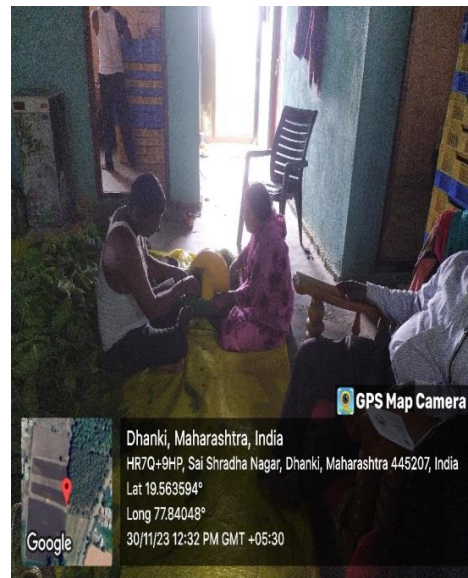
Rearing of silkworms



Shed of reared worms



Silk Worms



Collection of mulberry leaves



Mulberry Plantation in Umarchhed



Reeling Silk threads from Cocoons



Cutting of leaves to feed the silkworms

Recommendations:

1. In the district, sericulture is practice at large area but should be practice as an entrepreneur mode.
2. While interacting with farmers it was found that the transport facilities of the raw cocoon should be increased or to defeat this problem the market of cocoon should be at nearby places. Till date Bangalore is the nearest market for the farmers which is still not located in Maharashtra itself.
3. Along with this it is observed that seri farmers are not getting good price for there raw cocoon they are always uncertain about there crop. Therefore the state should take some initiative for fare cocoon market.
4. Government institutions should arrange the more seminar, conferences for the farmers to take there crop technology based.
5. There is the option to purchase the reeling machine from the government but it is recommend that the price of that machine should be less that the farmer can start there own business.
6. Climate change is the major problem which faced by the farmers in agriculture sector so the season wise varieties of mulberry and silkworm is needed. And the seeds of worm which is provided at chawki center by government should be of good quality.
7. Last but not the least the current major problem of seri farmers is the Uzi fly so the remedy should be invented against this.

Conclusion and Discussion:

Sericulture is the growing agro industry in India and Maharashtra for the ideally development of rural economy. About 69 villages and 385 farmers in district are practicing this crop for the better upliftment of economy. But still sericulture has many challenges as there are fluctations in the production like during covid period. Priyanka et.al. (2021) focus on the scenario of the sericulture in India during covid. Challenges like the market establishment, old methods of rearing, lack of fund to the reeling sector, transport facilities etc. But still there are hopes and opportunities and scope. There is need of various facilites and the proper planning based seri farming is necessary was given by Hiware (2016). Therefore there is need of proper plan for development of sericulture and silk farming including the good plans and by increasing the participate of the young farmers.

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Nil.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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