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Research Article

STABILIZATION OF SECOND COCOON CROP BY TECHNOLOGY SUPPORT IN PATHANKOT

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ABSTRACT
Since ages, silk and silk fabrics have attracted mankind and have found their place among the most valued and elegant human fabrics. India is the world's second largest producer of raw silk (18,500 MT/yr), However, because of high domestic demand (25,000 MT/yr), the country imports more than 8,500 MT/yr. By the year 2025 domestic demand is expected to increase to 45,000 MT/yr. Therefore, silk production has tremendous growth potential in India, which could provide additional employment opportunities for up to 4 million rural families. The predicted demand growth for silk could generate self-employment and remunerative livelihood opportunities for the most disadvantaged sections of society, especially for small and marginal farmers and the landless poor through silk worm raring, reeling of yarn, weaving of fabric, and value-addition as non-farm activities.

Keywords: *Cocoon, Rearers, Crops, Vijetha and Sericulture*

INTRODUCTION
Punjab is growing in sericulture production, but cocoon production has been decline and now State Government took many initiatives for its production. To make sericulture a more viable and more profitable venture and to improve the Socio Economic condition of silkworm rearers in Punjab there are an earnest need to raise more than one cocoon crop per year. Keeping in view, it is observed that rearers in Sujanpur Division in District Pathankot of Punjab are reluctant to undertake second bivoltine crop in autumn season i.e. September-October months, due to fear of cocoon crop failures, which they attribute mainly to unsuitable environment climatic conditions for rearing during these months. Rearing of young age silkworms rearing up to 2nd moult is called as "*chawki* rearing" which usually lasts up to 10 days, and is a vital aspect of sericulture industry. In addition to this they also apprehend mulberry leaf shortage for subsequent spring rearing, in case mulberry leaf is consumed in autumn rearing Impact of chawki rearing, use of bed disinfectants, pruning technique and adoption of new hybrids have been studied through REC Sujanpur over the year. It is over the Years. It is observed that there is an increase of 15% in cocoon yield and 22% in shell ratio by these technologies at rearers' level during autumn season.

Since ages, silk and silk fabrics have attracted mankind and have found their place among the most valued and elegant human fabrics. India is the world's second largest producer of raw silk (18,500 MT/yrs.). However, because of high domestic demand (25,000 MT/yrs.), the country imports more than 8,500 MT/yr. By the year 2025 domestic demand is expected to increase to 45, 000 MT/yr. Therefore, silk production has tremendous growth potential in India, which could provide additional employment opportunities for up to 4 million rural families (Benchamin and Kshama, 2005**).**
Systematic transfer of improved technologies in Sericulture at rearers' level plays a vital role in the increase of cocoon production (Sinha, 1989). Punjab is growing in sericulture production, but cocoon production has been decline and now state government took many initiatives for its production. To make sericulture a more viable and more profitable venture and to improve the socio economic condition of silkworm rearers in Punjab there are an earnest need to raise more than one cocoon crop per year. Keeping in view, the division of sericulture adopted silkworm rearers in different zones of Punjab under the transfer of technology programme to raise second commercial crop in Punjab State (Shashi, 2014). In Punjab State, Pathankot division is major contributor to the cocoon production. It has a still higher potential for cocoon production which could be achieved by way of introducing improved methods in

silkworm rearing besides establishing an additional crop during autumn season i.e. September-October months of the year (Shashi, 2013). Rearing of young age silkworms rearing up to 2nd moult is called as 'chawki rearing' which usually lasts up to 10 days, and is a vital aspect of sericulture industry. RSC recommends a number of technologies to be followed through its REC's (Shashi, 2013). In the Present Study, it is observed that following technologies namely

1. Supply of chawki reared worms to the rearers used of vijetha as bed disinfectant.
2. Shoot harvesting technology and rearing of season specific silkworm hybrids were stressed upon (Shashi, 2013).

MATERIALS AND METHODS

Before the start of the demonstration a survey regarding the cocoon yield obtained by the rearers under department of sericulture was undertaken. The study was conducted in Pathankot district with the rearers covered by REC Sujanpur during autumn season with effect from 2011- 14 (Sreenivasa, 2014).

After Conducted thorough disinfection with formalin and bleaching powder, the package included.

i) Rearing of chawki reared worms fed on S-146 variety supplied by REC, Sujanpur.
ii) Feeding of worms with shoots from the plants pruned during July because due to the practice of pruning in spring season, the leaf available for autumn rearing becomes.

a. Over –mature
b. Besides, 50% of this over- nature is unfair due to the infestation of different diseases and pests.

The technique involves middle harvesting of primary branches during autumn rearing by clipping only the apical one meter approximately This Portion bears the health leaf of about 50-70 days and as such is fit for rearing (Kawakami, 2001). The shoots thus harvested could be utilized for rearing either by chopping or as such, depending upon the stage of worms (Kawakami, 2001).

iii. Use of Vijetha as bed disinfectant as per the following schedule (Shutao, 2011).

Precaution should be taken not to cover the bed with paper and not to dust vijetha powder on the hatched larvae at the time of brushing or on the larvae under moult.

iv. Newly evolved autumn specific hybrids i.e., Rsj3* Rsji with Sh6 * NB4D2 as control (Singh *et al.*, 2005; Jayaswal *et al.*, 2001).

RESULTS AND DISCUSSION

The average yield recorded for autumn season is given in table- I and the survey conducted with DOS rearers reveals that level of their adoption is very poor expect for superficial disinfection conducted before rearing and partial/ improper use of Vijetha (Ramakrishnan, 2001).

Table 1: Seed Distribution / Cocoon Production (MT) Sujanpur Division only seed dustribution/cocoon production

Year	Total (oz)	Spring	Autumn	Spring	Autumn	Total
2010	16520	16117	403	474	NA	474
2011	17592	17592	-	605	--	605
2012	15317	15317	--	488	--	488
2013	16845	16445	400	521	--	521

Performa of the farmers adopted under REC Sujanpur for the said technologies for yield, Shell ratio and larval period is given in table 2.

Table 2: Comparative Rearing Data during Autumn Season at Sujanpur of Year 2009-2012

Year	Silkwrom	Qty. Of seed reared (oz)	Avg.yield /oz (kg)	Shell (./.)	Avg. Rate of cocoons (rs)	Larval period
2010	RSJ3 * RSJI SH6*NB4D2	03.00-05.00	41.900-33.700	20.64-16.27	65.00-61.00	30 DAYS-31DAYS
2011	RSJ3*RSJI SH6*NB4D2	05.00-11.25	49.500-40.995	21.70-19.04	50.00-48.00	25 DAYS-27 DAYS
2012	-RSJ3*RSJI SH6*NB4D2	10.00-	43.340-	19.72-	52.00-	30DAYS
20013	RSJ3*RSJI SH6*NB4D2	07.00-3.00	46.948-43.070	22.84-16.87	55.00-46.60	26 DAYS-27DAYS
Total	RSJ3*RSJI SH6*NB4D2	25.00-19.25	45.422-39.255	21.22-17.39	55.00-52.00	----------
GAIN %			15.71	22.02		

Types of quality cocoon found (Ramakrishnan, 2001)

1. Stabilisation of cocoon crop and increase in yield.
2. Improvement in quality of cocoons.
3. Control over disease spread.
4. Reduction in rearing expenditure.
5. Distribution of labour for other works.

The rearing performance data of the farmers reveals that.

i. Based on the average yield as recorded by state Sericulture Department as conspicuous impact reflected in yield with a gain to a tune 400/ through adoption of these technologies (Ramakrishnan, 2001).

ii. The extent of gain by adopting rearing of the new hybrids average to an increase of 15% in cocoon yield and 22% in shell contact.

iii. There is a decrease in larval period to an extent of 1 to 3 days by adopting the rearing of new hybrid Rsj3*RSJI under field condition (Kumaresan *et al.*, 2002).

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