



Full Length Research Article

TO IMPROVE THE BIVOLTINE DOUBLE HYBRID SILKWORM REARING TECHNOLOGIES THROUGH IVLP PROGRAMME

*¹Muniswamy Reddy, P. M., ¹Ramesh, M., ²Ravi Naik, B. and ³Jayaprakash, P.

¹Silkworm Seed Production Centre, NSSO, Central Silk Board, Madanapalli-517325, A.P

²Department of Sericulture Govt. of Andhra Pradesh Madanapalli- 517325, A.P

^{3b}National Silkworm Seed Organization, Central Silk Board, Bangalore-560068

ARTICLE INFO

Article History:

Received 21st February, 2016

Received in revised form

14th March, 2016

Accepted 28th April, 2016

Published online 31st May, 2016

Key Words:

IVLP, Bivoltine,
Double Hybrids,
Silkworm Rearing,
Mulberry.

ABSTRACT

Sericulture is one of the most important rural industries practiced since several decades. It has certain inherent advantages of bivoltine double hybrids rearing in Madanapalli area through Institute Village Linkage Programme in field level will be implemented during the current 12th plan period for 100 farmers per each programme. The programme has been introduced at central silk board and state DOS level to educate sericulturists, still a wide gap exists between the recommended technology and actual adoption by sericulturists. To plan a suitable intervention strategy, to bridge this gap, it is necessary to understand the present knowledge and adoption level for improved technologies, so also existing mulberry leaf yield and silk cocoon production level. To maintain the mulberry garden package of practices and to produce good quality of mulberry leaf and silkworm rearing technologies disease and pests' management and control the disease to maintain hygienic condition in silkworm rearing house and good quality of cocoons harvesting practices in sericulture industry. It is, therefore, present study was conducted to know the extent of adoption of improved practices at farmer's level in selected areas under Madanapalli Cluster of B- Kothakota, PTM, Thambalapalli, Mulkalachruvu, covering five locations with purpose of finding whether or not by adopting the improved sericultural technologies are transferred meticulously and adopted sincerely. A gain to the extent of 65Kgs to 70 Kgs in cocoon yield over the adaptation of new technologies and better cocoon price. Therefore this IVLP programme has a positive impact on their adoption of improved technologies and their knowledge level. Through this they can earn for their better livelihood and look after their families by increasing their annual income through bivoltine double hybrid silkworm rearing.

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INTRODUCTION

Silkworm has a large role in rural life in India being an insect of economic importance. The common silkworm *Bombyx mori* Linnaeus (Lepidoptera: Bombycidae) spins valuable silk fibre, making it one of the most beneficial insects to mankind, and is becoming an attractive multifunctional material for both textile and non textile uses. Almost all-commercial silk is made from cocoons spun by silkworms of the genus *Bombyx*. Bivoltine silkworm rearing is a very complicated process, which requires various technical aspects, specific management skills, due understanding and experience. The practice of sericulture consist of two major activities viz., cultivation of mulberry plants for producing disease free crop leaf to the

silkworm larvae and the rearing of silkworm larvae to produce the cocoons, which is the raw material for the silk reeling industry. Silkworm is an economical and helpful insect and is reared by many farmers throughout world. It is an important economic insect since it is the producer of silk. Success in sericulture depends largely on major factors like, breed, seed and feed. The silkworm breeds play an important role for high cocoon yield and silk quality. If the cocoons, which form the basic raw material for raw silk, are from bivoltine will definitely be superior with high silk content. Introduction of tropical bivoltine rearing practices in India is revolutionizing the bivoltine silk production in South India.

MATERIALS AND METHODS

The Institute Village Linkage Programme will be implemented during the current 12th plan period for 100 farmers per each

*Corresponding author: Muniswamy Reddy

Silkworm Seed Production Centre, NSSO, Central Silk Board, Madanapalli-517325, A.P

programme. Central Office, Bangalore has fixed a target of one programme for the Institute which will be implemented through Andhra Pradesh of Madanapalli areas, Chittoor District (B-Kothakota/ PTM / Molakalacheruvu/ Thamballapalli). Selection of villages, farmers and bench mark survey has already been completed in association with local State Govt. Department of Sericultural (DOS). (Pande, 2012).

In the present study the beneficiary farmers were compared before and after the intervention of new technologies introduced the IVLP programme.

Technologies to be implemented in the selected project area

- Maintenance of Mulberry Plantation
- Pruning / leaf harvesting, Leaf transportation and preservation techniques
- Disinfection of rearing house
- Chawki/ late age rearing technologies
- Use of Bed disinfectants
- Integrated management of mulberry pest and diseases
- Silkworm disease management:
- Cocoon harvesting and transportation techniques for better price

RESULTS AND DISCUSSION

The productive bivoltine double hybrids had resulted in a linear improvement of cocoon yield and quality of raw silk. However, these productive hybrids could make much impact to the selected farmers who could able to provide required input and adopted new technologies and managerial skills, which were essential to realize the maximum, potential of these double hybrids silkworm rearing. But whenever, there is an improvement in quantitative characters in double hybrid survivals significantly increasing trend. Although, the survival is comparatively more than the cross breed race, in the present investigation, the IVLP farmers practiced both sericulture and agriculture crops for earning their livelihood and to increase the socio-economic conditions in their family (Geethaet. al. 2001).

Impact of technological interventions

It could be inferred from the data presented in Table -1 that there was significant improvement in adoption rate of bivoltine double hybrid silkworm rearing technologies/practices by the farmers after appearing IVLP programmes, when compared with before and after IVLP status of technology adoption.

Table 1. Impact of IVLP Programmes on Technologies Adoption of the Farmers

SL. No.	Technologies / Practices	Technologies Adoption Level			
		No. of participants	Before IVLP(%)	After IVLP(%)	Improvement (%)
1	Maintenance of Mulberry Plantation	100	45.0	66.4	47.5
2	Disinfection of rearing house	100	36.5	62.7	71.7
3	Pruning / leaf harvesting, Leaf transportation and preservation techniques	100	42.6	57.2	34.3
4	Chawki / late age rearing technologies	100	48.2	78.5	62.8
5	Use of Bed disinfectants	100	44.3	72.4	63.4
6	Integrated management of mulberry pest and diseases	100	22.6	35.4	36.1
7	Silkworm disease management	100			
8	Cocoon harvesting and transportation techniques for better price	100	43.1	65.4	51.7



IVLP PROGRAMME PHOTOGRAPHS

The higher rate of technology adoption (71.7 %, 63.4% and 62.8%) was observed in case of maintenance of mulberry plantation, bed disinfectants and chowki and late age rearing respectively. It was observed that due to technological interventions mulberry plantation, leaf yield was increased by adopted wider spacing, high yielding mulberry variety of V₁ in 3'x3'x5 (paired raw system) spacing was one of the reasons for increased quantity and quality of productivity. Significantly increase in cocoon yield also observed which may be attributed due to quality leaf obtained from high yielding mulberry variety. Thus, the programme was successful in increasing the overall cocoon yield (55kgs -65kgs). The acreage under mulberry was also increased by adopting new technologies and study tour programmes arranged Karnataka progressive farmers it is well suitable mulberry gardens and rearing houses which was due to intrinsic motivation of the farmers themselves after getting sustainable benefit through the IVLP programme (Chowdhury *et al* 2002 and Hiriya *et al.* 2008, Pande, 2012).

Impact of technologies adopted by the selected farmers in each village would be assessed based on the knowledge they have before and after IVLP. For assessing the quality, effectiveness and impact of the IVLP, regular evaluation will be done. The present programme was improvement in the mulberry leaf yield as well as cocoon productivity. Farmers received a good remuneration from this improvement. The gross and net income from silkworm rearing was increased a lot which indicated their improvement in economic standard. The disinfectants/ chemicals, study tours and group discussions support under IVLP has enlightened the farmers and now they could handle the enterprise confidently with ensured application of technological inputs which is reflected from their income earning status from this avocation. Hence, similar type of programme should be emphasized for the overall sericulture development of the country (Geetha, G. S. *et al* 2001 and Qadri *et al* 2010).

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