



## SPRING REARING PERFORMANCE OF BIVOLTINE HYBRID NB<sub>4</sub>D<sub>2</sub> × SH<sub>6</sub> OF SILKWORM, *BOMBYX MORI* L. UNDER SUB-TROPICAL CLIMATIC CONDITION

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### ABSTRACT

The silkworm rearing was conducted during the month of April-May at department of Sericulture, Govt. Degree College, Poonch. The bivoltine hybrid *viz.*, NB<sub>4</sub>D<sub>2</sub> × SH<sub>6</sub> reared first time at the department during spring season showed better performance at the laboratory condition. The data revealed that single cocoon and shell weight on an average of three replications was found to be ((1.82, 1.78, 1.74 & 0.383, 0.377, 0.375) respectively. The other traits studied also showed better performance in the rearing.

**KEY WORDS:** Bivoltine, hybrid, season, spring rearing.

### INTRODUCTION

The common silkworm *Bombyx mori* Linnaeus (Lepidoptera: Bombycidae) spins valuable silk fiber, making it one of the most beneficial insects to mankind, and is becoming an attractive multifunctional material for both textile and non textile uses (Tsukada, 2005). Almost all-commercial silk is made from cocoons spun by silkworms of the genus *Bombyx* (Lee, 1999). 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 (Data, 2002). The newly evolved bivoltine hybrids at various institutes are capable of producing higher cocoon yield with 2A to 3A grade silk and are popular among the farmers. The state of Jammu and Kashmir produces high grade quality bivoltine silk from hybrids. It ranks 5<sup>th</sup> in the country cocoon production and is leader in high quality bivoltine silk (Mukherjee and Gautam, 1993). Normally single rearing is conducted in Jammu during March-April in sub-tropical areas. Now-a-days efforts are being made to enhance the cocoon crop production by introducing an additional commercial crop for autumn. From time to time various bivoltine silkworm

hybrids have been recommended for commercial exploitation (Rajalakshmi *et al.*, 1998; 2000; Nirmal Kumar *et al.*, 1999; Naseema Begum *et al.*, 2000; Malik *et al.*, 2001; Sudhakara Rao *et al.*, 2001; Ramesh Babu *et al.*, 2002) but the performance of these hybrids varies with varying atmospheric conditions. In this context, present was carried to study the spring rearing performance of bivoltine hybrid NB<sub>4</sub>D<sub>2</sub> × SH<sub>6</sub> of silkworm, *Bombyx mori* L under sub-tropical climatic condition.

### MATERIAL & METHOD

The silkworm rearing of bivoltine hybrid NB<sub>4</sub>D<sub>2</sub> × SH<sub>6</sub> was carried out in spring season on local variety of mulberry during the months *i.e.*, April to May, 2011. The disease free laying was obtained from the State Sericulture department, Poonch (J&K). Recommended silkworm rearing method was adopted as suggested by (Rajan and Himantharaj, 2005). The hybrid was reared in three replications each of one disease free laying (Dfls). The data of the economically important traits such as single cocoon weight, single shell weight, shell %, good cocoon % and larval weight (10 larvae in gm) were collected and results are presented in the form of overall mean performance in graphs form 1-3.

### RESULT & DISCUSSION

From the data depicted in Fig-1, it is clear that the average single cocoon and shell weight was (1.82, 1.78, 1.74 & 0.383, 0.377, 0.375) and shell percentage was (21.04, 21.18 & 21.55) of three replications for rearing conducted during spring season. The data with regard to good cocoon percentage on an average of three replications was (89, 86 & 84). The good performance of this hybrid in the spring season due to suitability and congenial atmospheric condition prevailing while commencing the silkworm rearing. The results pertaining to V<sup>th</sup> age larval weight showed no difference in all the three replication, whereas

the larval weight of 10 larvae during final instar in the final days was (49, 47 & 76 gm) of three replications.

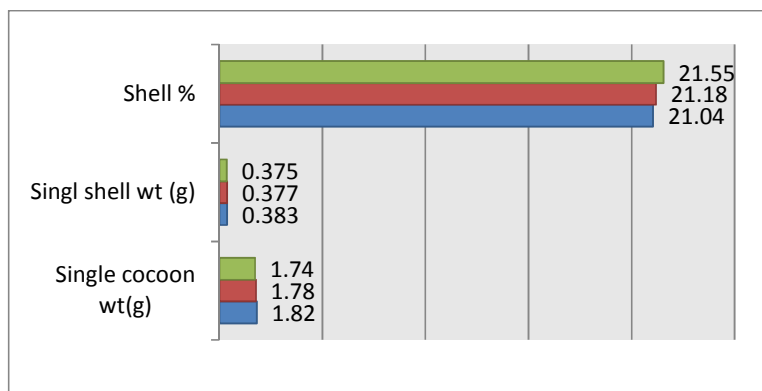


FIGURE 1. Average spring rearing performance of three replications on single cocoon, shell and shell percentage.

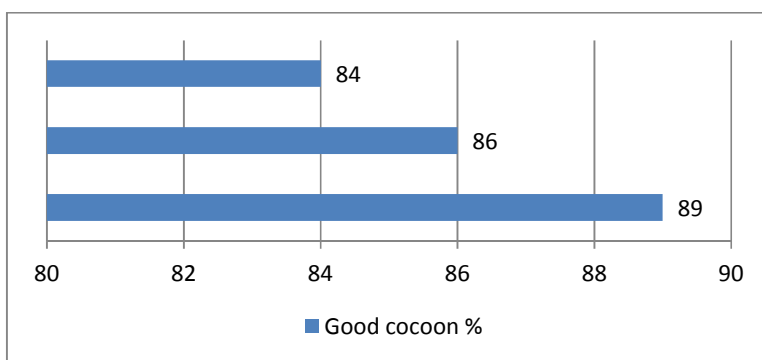


FIGURE 2. Average spring rearing performance of three replications on good cocoon percentage.

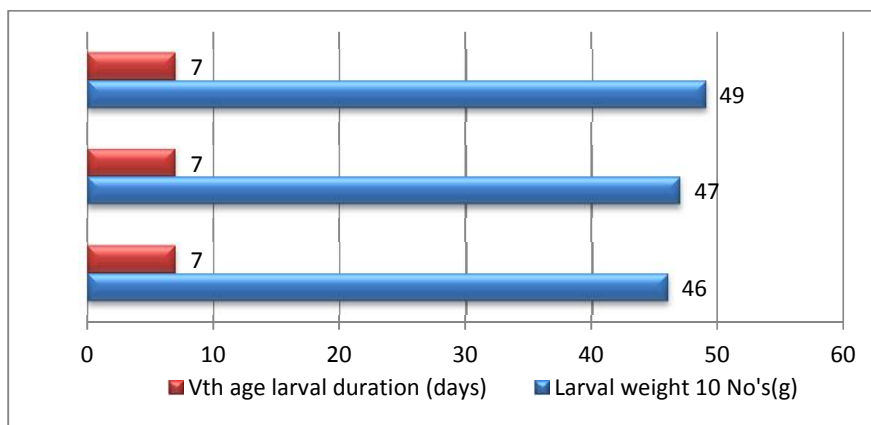


FIGURE 3. Average spring rearing performance of three replications on V<sup>th</sup> age larval duration and weight.

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