



*Research Paper*

## PERFORMANCE OF F<sub>1</sub> POPULATION OF TROPICAL TASAR SILKWORM, *ANTHERAEA MYLITTA* D. (LEPIDOPTERA: SATURNIIDAE) ON DIFFERENT PRIMARY FOOD PLANTS

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### ABSTRACT

The expression of heterosis in economic characters of semi-domesticated tasar silkworm is highly desirable from commercial point of view as well as in genetic improvement. Polyphagous tasar silkworm feeds on a wide range of food plants and expresses extensive phenotypic characters at different ecological niches. The F<sub>1</sub> populations of reciprocal crosses of two wild Sal based ecoraces viz., Raily and Laria, and semi-domesticated Daba crossed with Laria were produced. The performance of the F<sub>1</sub> hybrids on three primary food plants such as Arjun, Asan and Sal was studied and compared with their parent populations. Significant differences ( $p < 0.001$ ) in the performance among the F<sub>1</sub> combinations and the parent populations were recorded with Laria x Daba cross displaying higher heterosis value for fecundity (+ 15.16 %) and higher hatching ( $83 \pm 2.56$  %). Significant variations were recorded in the cocoon yield and cocoon characters during first and second crop as well as among the different food plants involved. Pupal weight and fecundity were recorded higher in *Terminalia* fed tasar silkworms. Arjun and Asan plants have shown prominence in respect of cocoon yield over Sal. The F<sub>1</sub> populations fared better cocoon characters on Sal than other food plants. The results reveal immense potential for utilization of single hybrids (F<sub>1</sub>) of tasar silkworm for boosting tasar cocoon productivity and simultaneous exploitation of the vast Sal flora.

**Key words:** *Antheraea mylitta*, Daba, heterosis, F<sub>1</sub> population, Laria, Raily, reciprocal cross.