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Research Paper

HETEROBELTIOSIS IN INDIAN TROPICAL TASAR SILKWORM, *ANTHERAEA MYLITTA* DRURY (LEPIDOPTERA: SATURNIIDAE) IN ASSOCIATION WITH CROP REARING SEASONS

R. Manohar Reddy[1*], M. Ramesh Babu[2] and P. Jayaprakash[2]

[1]P_2 Basic Seed Farm, National Silkworm Seed Organization, Central Silk Board, Parigi 515261, India.

[2]National Silkworm Seed Organization, Central Silk Board, Bengaluru 560068, India.

[*]E-mail: dr.manohar1959@rediffmail.com

ABSTRACT

The semi-domesticated and wild ecoraces of tropical tasar silkworm, *Antheraea mylitta Drury* (Lepidoptera: Saturniidae) contributes for vanya raw silk production in India. Presently, the commercial tasarculture depends on two semi-domesticated (Daba & Sukinda) ecoraces, and there is an imperative need for hybridization to exploit heterobeltiosis to make tasar activity more feasible. The viability of various general (parents with non-specific traits) and specific (parents with specific traits of commercial importance) F1 hybrid combinations developed among Daba (semi-domesticated), Jata and Raily (wild) ecoraces were evaluated during seed (July-August) and commercial (September-December) crop rearing seasons to assess the impact of rearing environment on extent of heterobeltiosis in commercial traits. The Jata x Daba general hybrid combination has shown relatively better performance among all the hybrids during both crop rearing seasons indicating their compatibility to varied environment over Raily x Daba general as well as specific hybrid combinations, which could only record better in shell weight and shell percentage. The heterobeltiosis was higher in all the hybrid combinations for larval span, shell weight and shell percentage than larval, cocoon and pupal weight, irrespective of the crop seasons. Higher heterobeltiosis in the larval span and silk related traits apart a little improvement in cocoon weight was recorded in Jata x Daba general hybrid combination in commercial crop rearing season followed by the same hybrid combination of seed crop season. The study infers that, there is scope to exploit the hybridization for heterobeltiosis in relation to the crop rearing seasons in tasar silkworm genotypes to augment silk yield through superior phenotypes for making tropical tasarculture commercially more sustainable.

Key words: *Antheraea mylitta*, ecoraces, F1 hybrid combinations, heterobeltiosis, rearing seasons.