

Research Paper :

Studies on the performance of castor genotypes on rearing cocoon of eri silkworm

S. CHANDRASHEKHAR AND R. GOVINDAN

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SUMMARY

Castor, *Ricinus communis* L. is an important non-edible oil seed crop, the leaves of which also serves as a primary food for the eri silkworm, *Samia cynthia ricini* Boisduval. A study was undertaken to evaluate the different castor genotypes for their suitability in eri silkworm rearing. Eight castor genotypes were evaluated by providing leaves of these genotypes throughout the larval stage. Eri worms nourished with leaves of DCS-85 genotype registered significantly higher ERR of 92.00 per cent while, it was lower with GCH-4 (83.33%). Similarly, DCS-85 genotype recorded higher cocoon weight (27.78 g/10), cocoon yield (250.5 g/100 worms and 75.14 kg/100 DFLs), shell weight (3.415 g/10) and shell yield (9.237 kg/100 DFLs) and these traits were lower with GCH-4 (24.50g 200.1 g, 60.02 kg, 2.715 g and 6.651 kg, respectively). The eri worms fed on leaves of DCS-85 were found superior in respect of shell ratio (12.29%), silk productivity (4.879 cg/day) and fibroin (78.25%) and sericin (21.55%), while these were inferior with GCH-4 (11.08%, 3.620 cg, 72.10% and 27.65%, respectively). Eri pupae formed by the worms nourished with leaves of DCS-9 registered higher pupal weight of 25.90 g/10 and the same was lower with GCH-4 (21.76 g/10). However, fecundity was more with DCS-85 genotype (340 eggs/laying) and it was least with GCH-4 (275 eggs). Further, egg hatching ranged between 95.00 to 98.00 per cent.

See end of the article for authors' affiliations

Correspondence to :

S. CHANDRA SHEKHAR

Department of Entomology, College of Agriculture, U.A.S., BIJAPUR (KARNATAKA) INDIA

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A part from the marvelous mulberry silk, which is quite popular world over, there are few other varieties that are equally attractive. They are collectively termed as 'Vanya Silks' comprising of Tasar, Eri and Muga silks. Also known as non-mulberry or wild silks, they infact represent finest facets of India's richest culture and tradition. Among them, eri silk is becoming popular in recent years. In India, ericulture has got great potentiality since the castor leaves are available abundantly in nature and castor cultivation is also done for commercial seed production. Among different host plants, castor is the primary host plant of eri silkworm and castor also plays an important role in oilseed production in the country. The factors like abundant availability of castor, multivoltine nature of silkworm, low cost of rearing, assured crop and simple traditional spinning devices have encouraged rearers to take up ericulture as a commercial proposition.

The quality of leaves provided to the worms for feeding has been considered as the prime factor influencing the production of good cocoon crop (Ravikumar, 1988). It has been

observed that growth, development and cocoon yield are influenced by the castor genotype and quality of leaves fed to the worms. Castor is rich in varietal composition and many local and high yielding varieties / hybrids are widely grown in Assam and other parts of the country (Sannappa, 1997). The selection of castor genotypes is an important factor for better growth and development of eri silkworm for higher productivity in terms of cocoon yield. In this context, the present study was undertaken to find out the suitable castor genotypes for dual purpose of ericulture and seed production.

MATERIALS AND METHODS

An experiment on the performance of castor genotypes in respect of economic traits of eri silkworm, *Samia cynthia ricini* Boisduval was carried out during 2005-06. The castor varieties viz., 48-1, Kranti and Local – green non-powdery and hybrids viz., DCS-9, DCH-177, GCH-4, DCH-32 and DCS-85 were procured from the Directorate of Oilseeds Research, Hyderabad and Directorate of Research, University of Agricultural Sciences, Dharwad. The seeds of eight castor genotypes

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