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Eri silk worm rearing : An additional income generation to castor farmers

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Eri silk worm, *Samia cynthia ricini* is a non- mulberry silk worm, which can be domesticated and mostly found in Assam and Meghalaya, spreading to nontraditional states like Bihar, West Bengal, Orissa, Tamil Nadu, Kerala, Karnataka and Andhra Pradesh. The Eri silk worm is a polyphagous and multivoltine insect and can be reared throughout the year to a maximum of 6-7 times a year. The larvae feed on various host plants of which castor (*Ricinus communis*) and kesseru (*Heteropanax fragrans*) are the primary food plants.

During 2011-12 the total production of Eri silk worm in the country was 3072 MT out of which 3055 MT were produced by North Eastern states. The Eri silk fibre, which contains fibroin and sericin is the finest and softest fibre among all the silks so that, it can be blended with wool, cotton, synthetic fibres and other silks to produce wide range of attractive and irresistible apparels. The Eri silk can be used to make different products like stoles, furnishings, dyed fabrics, hand bags, caps, jackets etc., Eri silk worm pupae have high nutritional value with 53.3 per cent proteins and the tribal people of North- Eastern states consume the pupae as a delicacy. Eri pupal oil has pharmaceutical and medicinal value while de-oiled pupae are the valuable source of essential amino acids. Eri silk worm litter, excreta and pupa can be used as manure and as substrate in biogas production.

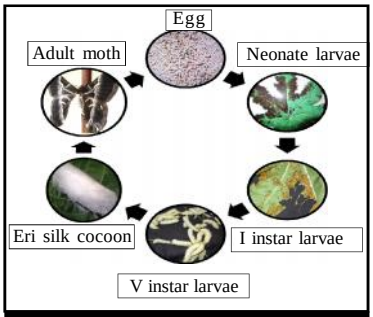

Fig. 1 : Eri silk worm- Life cycle

Eri silk, a Vanya silk is commonly considered as poor man's silk and its production in India is limited to backyard venture. However, there is an enormous scope for eri culture in castor growing areas without hampering castor seed production and it also provides a supportive economy for the small and marginal farmers. It is remarkable for its low investment, high returns which makes it as an ideal agro based industry for rural India.

Eri silkworm rearing :

Rearing house : A well ventilated room with 30 ft length and 16 ft breadth and 12 ft height is suitable for rearing silkworm. A room with cross ventilation and aeration with proper windows can be used for rearing the healthy worms.

Disinfection of rearing room and equipments: The rearing room along with rearing appliances has to be cleaned and washed thoroughly and disinfected with 5 per cent bleaching powder solution or 4 per cent formaldehyde solution @ 800 ml/ 10 sq mt area and then the rearing room has to be kept closed for 36 hours for effective disinfection.

Preparation of Eri disease free layings (DFLs): The eggs have to be disinfected with 2 per cent formaldehyde for five minutes and washed under tap water and dried under shade and kept for incubation at 25°C and 85- 90 per cent RH for 16 hrs under day light conditions and 8 hrs in the darkness. 48 hrs before hatching of the eggs when the black spot appears, they have to be covered with a black cloth for uniform hatching of larvae. After two hours of hatching the neonate larvae have to be offered with tender castor leaves. Then the larvae will crawl on to the leaf and start feeding gregariously. Then these larvae will be transferred into separate rearing trays. The first and second instar worms are called as chalky worms. The requirement of temperature and humidity for different instars of Eri silk worm are given below:

Instar	Temperature (°C)	Relative hmidity (%)	Leaf type
I	26-28	80-90	Tender
II	26-28	80-85	Tender
III	25	70-80	Medium
IV	24	65-75	Old leaf
V	24	65-75	Old leaf

Chalky worms need tender leaves whereas later instar worms require medium to mature leaves. Optimum number of larvae has to be maintained in each tray to avoid overcrowding. 100 DFLs in 5th instar stage....

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