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PROSPECTS FOR PROMOTION OF ERI CULTURE IN NON-TRADITIONAL AREAS OF INDIA - A REVIEW

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ABSTRACT : Eri silk produced by silkworm, *Samia ricini* Donovan is polyphagous in nature and mainly feeds on annual crops (Castor and Tapioca) and perennial trees (*Heteropanax fragrans* (Roxb.) Seem., *Ailanthus* sp.). Eri silk is whitish in colour and due to discontinuous fiber filament, it is spun like cotton. As Eri silk is processed without killing the silkworm, it is called as "Ahimsa Silk". Due to higher pupal protein content (150-160 g/kg; 10.3% higher than an edible insect, *Acheta domesticus* (L.), the eri pupae could be a potential source of protein for human and animal (fish, poultry) consumption. Despite continuous treads in Research and Developmental activities, the vertical expansion of eri silk production has yet to reach expectations and hence, there is a need to explore the non-traditional states to meet the horizontal expansion in eri silk production, especially the castor and tapioca growing areas. This could be possible by developing eri silkworm breeds/hybrids with climate resilience, disease and pest resistance, early and easy disease detection tools, and application of artificial intelligence in pre- and post-cocoon sectors. Apart from textile uses, eri silk products are to be explored for non-textile purposes *viz*., fibroin, sericin, pupae, and pupae oil for cosmetics, nutraceutical, pharmaceutical, and human consumption. The eri silk is found to be a profitable livelihood business enterprise in India. In recent days, the ericulture has been introduced in other parts of the country, but much more effort is needed to make the value chain stakeholder's friendly and economically viable enterprise through product diversification and utilization of by-products.

Key words : Eri culture, Ahimsa silk, India, non-traditional areas, pupae, castor, tapioca.

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INTRODUCTION

Sericulture is an agro-based cottage industry in India. It is highly labour-consuming, needs less investment, and in turn, generates more employment and profit. India produces all types of silk *viz*., Mulberry, Muga, Eri, Tasar, and Oak Tasar. The silk-producing states of India are depicted in Fig. 1. During 2021-22, India produced silk with a 3.19% CAGR of 34903 MT in comparison to 2011-12, whereas eri silkworm production with 8.27% CAGR of 7364 MT. Eri silk production from 1951-52 to 2021-22 is shown in Fig. 2. Among total silk production, eri occupies nearly 21% and 70% of total non-mulberry silk production (CSB, 2022 and Kumaresan, 2022). The silk production comparison across the last decade is shown in Fig. 3. Eri spun yarn price has risen from Rs. 1000/- in 2013-14 to Rs. 3000/- in 2021-22, the same is shown in Fig. 4. The commonly and commercially exploited non-mulberry silk-producing species are *Antheraea mylitta* Drury, *A. pernyi* Guérin-Meneville, *A. assamensis* Helfer, and *Samia ricini* Donovan (Jolly, 1985) belonging to the family Saturniidae, whereas, mulberry silkworm belonging to the family Bombycidae.

The word 'Eri' is derived from the Sanskrit term "Erranda", which refers to the castor plant, *Ricinus communis* Linnaeus (Euphorbiaceae), which is the primary host plant of eri silkworm (Patil and Savanurmath, 1994; Saratchandra, 2003). Eri silk is also known as endi or errandi in India. Ericulture is one of the oldest cultures

of pesticidal properties that can be widely explored in agriculture and related fields. Promotion of eri culture in non-traditional states (Gujarat, Rajasthan, Tamil Nadu and Kerala) would generate additional income for the farmers, spinning millers, employment generation and considerable foreign exchange/ revenue to the nation.

CONCLUSION

The eri silk is found to be a profitable livelihood business enterprise in India. In recent days the ericulture has been introduced in other parts of the country, but much more effort is needed to make the value chain stakeholder's friendly and economically viable enterprise through product diversification and utilization of by-products. Strengthening of existing infrastructure, encouragement of Public Private Participation for quality seed production supported by adequate R & D coupled with effective management of seed production, and rearing activities including post cocoon technologies coupled with diversification of products to create marketing opportunities both at national and international levels will not only improve eri raw silk production but also act as a sustainable source of income for the grass root level stakeholders. The additional income obtained through ericulture is enough to support the farmers to meet the cost of production, which is indirect like in the net profit to the tapioca growers. A rate fluctuation of agricultural produce is common in India and hence the additional income through ericulture supports the livelihood of farmers if tuber or castor oil rates are slashed.

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