Eri Silk in Telangana: Weaving Sustainable Livelihoods and Empowering Rural Communities

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Abstract

Eri silk, produced by the polyphagous silkworm *Samia ricini*, is gaining prominence as a sustainable and ethical alternative in India's silk industry. Feeding on a diverse range of host plants, including annual crops like castor (*Ricinus communis*) and tapioca (*Manihot esculenta*), as well as perennial trees such as *Heteropanax fragrans* and *Ailanthus* species, Eri silkworms yield a unique, creamy-white fiber with a cotton-like texture due to its discontinuous filament structure. Revered as "Ahimsa Silk" because it is harvested without killing the silkworm, Eri silk embodies compassion and sustainability. Additionally, the protein-rich pupae (150–160 g/kg) present a high-value resource for animal feed and human nutrition exceeding the protein content of commonly consumed edible insects like *Acheta domesticus*.

Introduction

Telangana, located in the Deccan Plateau, offers a conducive environment for the expansion of ericulture. The state's semi-arid climate and prevalent cultivation of castor make it an ideal region for Eri silk production. Districts such as Mahabubnagar, Narayanpet, Nagarkurnool Nalgonda, Rangareddy, and Medak, where castor is predominantly grown as a rainfed crop, present significant potential for integrating ericulture into existing agricultural practices.

Eri Silkworm Biology and Host Plants:

The Eri silkworm (*Samia ricini*) is polyphagous, feeding on various host plants. Primary hosts include castor and kesseru (*Heteropanax fragrans*), while secondary hosts encompass tapioca, borpat (*Ailanthus grandis*), borkesseru (*Ailanthus excelsa*), and payam (*Evodia flaxinifolia*). Tertiary hosts such as *Ailanthus glandulosa*, *Ailanthus tryphysa*, *Carica papaya*, and *Gmelina arborea* also support its growth. Among these, castor stands out as the most significant, especially in Telangana, due to its widespread cultivation and suitability for the region's climate.

Economic and Nutritional Potential

Eri silk production offers multiple economic benefits. The silk itself is in demand for its unique texture and ethical production process. Moreover, the pupae left after silk extraction are rich in protein, making them suitable for animal feed and potential human consumption. This dual-purpose use enhances the profitability of ericulture. Studies have shown that integrating ericulture into castor farming does not significantly affect seed yield, allowing farmers to diversify their income sources without compromising existing agricultural outputs.

Challenges and Opportunities in Telangana

Telangana has strong potential for ericulture, but several key areas require attention to fully realize its benefits:

1. **Castor Plant Development:** Current breeding efforts primarily target seed and oil yield. There is an opportunity to develop castor varieties with increased leaf biomass, which is more suitable for feeding Eri silkworms.
2. **Adaptation to Climate:** Enhancing the climate resilience of Eri silkworm breeds will help ensure consistent production across Telangana's varied weather conditions.
3. **Infrastructure and Capacity Building:** Setting up appropriate rearing facilities and offering training programs—particularly aimed at women and small-scale farmers—can support wider adoption of ericulture.
4. **Market Support:** Strengthening market linkages for Eri silk and related products will help maintain consistent demand and offer fair pricing to producers.

Conclusion

Eri silk production presents a valuable opportunity for rural development in Telangana. With strategic focus on research, farmer support, and market development, ericulture can become an important part of the state's agricultural landscape and contribute to livelihood enhancement in rural communities.

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