

INCREMENTAL ECONOMIC WORTH OF THE FIRST HIGH YIELDING INDIAN HYBRID CLONE, RRII 105 OVER RRIM 600

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The successful release of RRII 105, the first high yielding Indian hybrid clone in 1980 was a game changer in the Indian rubber plantation sector. Until then the Malaysian clone RRIM 600 has been the ruling clone in India. RRII 105 could yield $369 \text{ kg ha}^{-1} \text{ yr}^{-1}$ more than RRIM 600. Large scale expansion of rubber cultivation in India during the 1980s using RRII 105 made India a significant rubber producing country, productivity ranking the highest in the world and meeting almost the entire demand for rubber from domestic production for several years. The production-consumption gap started to widen with the current price decline from the beginning of this decade.

The present analyses show that during the period between 1991 and 2017, the total economic value of the incremental yield produced by RRII 105 (over RRIM 600) in India was to the tune of USD 6635 million. This translated into maximum incremental revenue of Rs. 28,000 per grower per year in 2011-12 when the number of growers was as high as 1.2 million. Bringing such a substantial economic benefit to a large number of farmers as a result of just one innovation, namely RRII 105 has no parallel in Indian agriculture.

To avoid the risk of extensive monoclonal planting more number of high yielding, climate-resilient “smart clones” with fast growth rate, high timber yield and pest/disease tolerance should be released in quick succession. The present rubber breeding cycle of 25 years is too long. Towards achieving the objective of shorter breeding cycle, advanced breeding tools such as molecular breeding, marker assisted selection and genetic engineering should be adopted.

Key words: Economic worth, High yielding clones, Incremental yield, RRII 105, RRIM 600

INTRODUCTION

Experimental planting of natural rubber (NR) in India was initiated as early as 1873 at the Botanical Gardens, Calcutta, but was a failure due to climatic reasons (Prain, 1914; Dean, 1987). Later in 1878 it was introduced as a forest crop in South India with rooted cuttings imported from Royal Botanic Gardens, Heneratgoda, Ceylon (Royal Botanic Gardens,

1898) where the original Wickham collection was conserved. But it was the large scale introduction of NR seeds during the early years of the 20th century and subsequently hybrid clones from countries like Ceylon, Malaya, Java *etc.* that established viable commercial NR plantations in India (Jacob *et al.*, 2013). Long before selections and hybrid clones were developed through breeding and selection research, high quality