

# RUBBER AS A PLANTATION CROP OVER THIRTY-FIVE YEARS IN A LARGE SCALE TRIAL IN NORTH EAST INDIA

M.J. Reju and Umesh Chandra<sup>1</sup>

Rubber Research Institute of India, Kottayam-686 009, Kerala, India

Regional Research Station, Rubber Research Institute of India,

Guwahati-781 006, Assam, India

Received: 18 July 2022 Accepted: 12 November 2022

Reju, M.J. and Chandra, U. (2022). Rubber as a plantation crop over thirty-five years in a large scale trial in North East India. *Rubber Science*, 35(2): 119-129.

Ten clones were evaluated in a large scale trial in Meghalaya, India. Parameters such as immature girth, girth at opening, mature girth, immature and mature girth increments, biomass, clear bole volume, survival and annual attrition rates of the trees, and the rubber yield were utilized to analyse the performance of clones in the trial. Opening girth was highest in PB 235 followed by RRIM 600, RRII 203 and RRII 118. After 35 years of the plantation establishment, among clonal trees that survived the long duration, the highest girth was exhibited in RRII 203 followed by PB 235, RRIM 600, RRII 118 and GT 1. Estimated biomass accumulation was also highest in RRII 203 followed by PB 235 and RRIM 600. High timber yield was also recorded in these clones. The average reduction in girth increment due to tapping was 39 per cent, and the minimum and the maximum were recorded in RRII 203 (35%) and RRII 105 (44%) respectively. The average girth increment of the clones over a period of 35 years was 3.1 cm annually, and the minimum and maximum values were recorded in RRII 105 (2.7 cm) and RRII 203 (3.6 cm) respectively. The survival rate was highest in RRIM 600 followed by RRII 203, PB 86, PB 235 and GT 1. The popular clone from the traditional region, RRII 105 showed poor performance with regard to growth and survival rate, although the yield was on par with RRIM 600. High attrition rate observed in the plantation showed that retaining a plantation for such a long duration as 35 years was not economically viable, although there were clonal variations. Based on reports from other regions including both the traditional and the non-traditional regions, RRII 203 is a clone well adapted to the stressful marginal climatic conditions in India showing performance comparable to the Malaysian clones RRIM 600 and PB 235 which are known for their performance in the marginal areas all over the rubber growing regions in the world. Adaptability of clones RRIM 600, RRII 203 and PB 235 coupled with better yield performance make them suitable for the marginal Indian conditions.

**Keywords:** Adaptability, Attrition rate, Biomass, Clones, Girth, Non-traditional regions, Survival rate, Weather variables

## INTRODUCTION

North East India is a non-traditional area for rubber cultivation in India. The region is sub-tropical, and known for various

environmental constraints. Traditionally, rubber cultivation was limited to the humid tropics within 10° North and South of the equator (Dijkman, 1951). However, on account of increasing demand for Natural