

RUBBER YIELD AND BIOMASS WITH SPECIAL REFERENCE TO RRII 400 SERIES CLONES AS POTENTIAL PARENTS FOR RECOMBINATION BREEDING

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Twenty-one clones including 15 from the RRII 400 series and five other clones were evaluated in large scale trials in comparison with RRII 105 as check. After 28 years of growth, and undergoing regular tapping for 20 years, the highest girth and timber yield were recorded in PB 330 followed by RRII 52. Among the popular RRII 400 series clones, the maximum girth was recorded in RRII 417 followed by RRII 414, RRII 429, RRII 422 and RRII 430. The ratio of rubber yield to total biomass, an indicator of yield potential was the highest (22 %) for RRII 430 which recorded the highest yield output (157 kg) too. Potential high yielders such as PB 330, RRII 414, RRII 417, RRII 429, RRII 52, RRII 410, RRII 402 and RRII 407 had a high proportion of standing biomass to the extracted biomass (latex). A positive association was also recorded between the standing biomass and the extracted biomass indicating higher yields in these clones to be a function of high standing biomass apart from the inherent yield potential of these clones. The yield potential (proportion of extracted biomass to the total biomass) and the yield output (quantum) of clones when plotted in a scatter diagram revealed high yielding clones useful for recombination breeding. Clones with high yield potential and high yield output, clones with high yield output with relatively low yield potential as well as the poor performers could be delineated by this technique. Clones suitable for use as female and male parents in recombination breeding are suggested based on the results of this study.

Keywords: Biomass, Clones, Quantum yield, Recombination breeding, Scatter plots, Yield potential

INTRODUCTION

A clone with superior performance for economic traits is the major objective of crop improvement programs in *Hevea*. Clones with high yield output are essential to improve rubber production in the country. Apart from yield, secondary attributes such as vigorous growth, disease tolerance, and climate resilience in view of climate changes are also important breeding objectives in this

perennial species. Clones with such traits are identified in clone evaluation trials. Such clones are often used as parents for the next generation clones. Hence, identifying ideal clones for use as parents is imperative for clone evaluation programmes.

RRII 400 series clones were evolved through hybridization programs of the Rubber Research Institute of India. Performance of the 400 series clones was