

GROWTH AND YIELD PERFORMANCE OF *HEVEA* CLONES IN KARNATAKA

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Fourteen *Hevea* clones were assessed for their growth and yield performance in a large scale trial planted in 1989 in Dakshin Kannada district in Karnataka state in southern part of India. Clone RR II 203 had the highest girth after 13 years of tapping (101 cm) which was significantly higher than that of the reference clone RR II 105. Annual girth increment during the immature period was also the highest for RR II 203 (6.4 cm year⁻¹) and this was significantly higher than that of RR II 105 (5.5 cm year⁻¹). Analysis of bole volume of 29 year old trees revealed that RR II 203, PB 255, KRS 25 and RR II 308 were significantly superior to RR II 105. Among the clones tested, RR II 203 recorded the highest (62.9 g t⁻¹ t⁻¹) and significantly higher mean yield over 13 years of tapping than that of RR II 105 (44.9 g t⁻¹ t⁻¹). Clones PB 255 and KRS 25 also had superior growth and yield, as well as tree stand, compared to that of RR II 105. Among the tested clones, PB 255, RR II 203, KRS 25, RR II 308 and reference clone RR II 105 had yield-stability index (YS_c) greater than the mean YS. Based on long term growth and yield performance, RR II 203, KRS 25 and PB 255 were selected for further on-farm evaluation prior to release for commercial cultivation.

Keywords: Clone evaluation, *Hevea*, Growth, Yield performance

INTRODUCTION

Identification of varieties suitable for agro-climatic conditions of various regions is crucial for successful commercial cultivation of any crop. Crop improvement programmes aim to identify characters important for economic utilisation of the crop, and the incorporation of the desired characters in the varieties intended for commercial cultivation. Crop improvement in *Hevea* started when early breeders started growing unselected seedlings and made critical examination of the population (Djikman, 1951). Later, the practice of selection of mother trees for

collection of seeds and the standardisation of bud grafting technique brought improvement in latex yield. Subsequently, intensive breeding through various techniques like recombination, polycross breeding and ortet selection led to substantial increase in the latex yield of *Hevea* clones. Natural rubber is obtained from the latex collected by controlled wounding or tapping of the bark of the rubber tree. Tapping is usually initiated once 70 per cent of the trees in a plantation attain 50 cm girth at 125 cm height from the bud union which is achieved by 6-7 years in the traditional region (Rubber Board, 2012) and 8-9 years