Rubber Science, **28**(1): 40-51, 2015 RESEARCH ARTICLE

PERFORMANCE OF NEW GENERATION CLONES OF *HEVEA BRASILIENSIS* UNDER THE DRY SUB-HUMID CLIMATE OF NORTH KERALA

T. Meenakumari, Radha Lakshmanan*, J. Rajeswari Meenattoor, Annakutty Joseph, T. Gireesh and Kavitha K Mydin

Rubber Research Institute of India, Kottayam-686 009, Kerala, India
* Regional Research Station, Rubber Research Institute of India, Padiyoor, Kannur- 670 703, Kerala, India

Received: 12 September 2014 Accepted: 20 January 2015

Meenakumari, T., Lakshmanan, R., Meenattoor, J.R., Joseph, A., Gireesh, T. and Mydin, K.K. (2015). Performance of new generation clones of *Hevea brasiliensis* under the dry sub-humid climate of North Kerala. *Rubber Science*, **28**(1): 40-51.

A large-scale clone evaluation trial incorporating 12 popular clones including the new RRII 400 series clones was laid out in Padiyoor, in Kannur district of North Kerala. Overall performance in terms of growth during immature and mature phase, dry rubber yield over seven years of tapping, disease incidence and secondary traits was studied. The highest percentage of tappable trees was recorded in PB 217 (82%) followed by RRII 430 (76%). Growth performance of RRII 400 series clones was superior to RRII 105 in the immature phase and comparable to RRII 105 in the mature phase. RRII 430 was the highest yielder during the entire tapping period of seven years with a mean yield of 60.98 gt^{-1} t^{-1} and was significantly superior to that of RRII 105. The yield of RRII 414, RRII 417 and RRII 422 was comparable to that of RRII 105 which recorded 51.14 g t^{-1} t^{-1}. RRII 422 recorded the maximum summer yield (41.11 g t^{-1} t^{-1}). Seasonal yield behaviour of RRII 430 was very distinct from other clones. RRII 430 and RRII 417 recorded relatively high drc (39%). Observations on abnormal leaf fall disease under sprayed conditions, the RRII 400 series clones showed high leaf retention above 80 per cent of which the lowest retension was observed in RRII 422. Pink disease incidence was the lowest in RRII 430, while disease incidence in RRII 414, RRII 417 and RRII 422 was comparable to that of RRII 105. The suitability of RRII 400 series clones to the prevailing dry sub-humid climatic conditions of the region is discussed.

Keywords: Dry sub-humid climate, Growth, *Hevea brasiliensis*, RRII 400 series clones, Yield

INTRODUCTION

The release of clone RRII 105 three decades ago, apart from its high yield potential provided added advantage to the growers in terms of high adaptation to the traditional rubber growing tracts of Kerala and Kanyakumari district of Tamil Nadu. In the context of climate change and unpredictable weather conditions, identifying high yielding clones with consistency in yield performance and desirable secondary attributes remains a challenge for *Hevea* breeders in the 21st century. Rubber cultivation in the northern

Correspondence: T. Meenakumari (Email: meena@rubberboard.org.in)