PERFORMANCE OF CERTAIN PIPELINE CLONES OF *HEVEA BRASILIENSIS* IN CENTRAL LARGE-SCALE AND SATELLITE ON-FARM TRIALS

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Under the Participatory Clone Evaluation programme (PCE) Phase 2, fourteen pipeline clones and three check clones were simultaneously planted during 2010 in a Central Large Scale Trial (CLST) and an on-farm trial (OFT), for evaluation of their growth, yield and other secondary traits. Regarding girth in the opening year, pipeline clone P 044 (56 cm) performed on par with RRII 414 (57 cm) and RRII 430 (56 cm). P 080 and P 070 attained girth of more than 50 cm. Regarding mature girth in CLST, P 044 showed on par performance with P 080 and better than RRII 414 and RRII 430. P 044 had a girth increment on par with highest girthing clone RRII 414. In OFT, P 044 recorded highest girth, which was comparable with RRII 430 and RRII 414. In CLST, P 070 had a tappability which was comparable with RRII 430. P 044 and P 080 along with RRII 414 possessed more than 70 per cent tappability. In the OFT, P 070 followed by P 044 and P 027 showed better tappability. In the CLST, P 044 and P 099 recorded highest yield performing on par with RRII 430 and RRII 414. In the OFT, P 044 registered highest yield followed by RRII 430. P 070 gave a yield which was comparable with RRII 105 and RRII 414. In the CLST, in the 3rd year of tapping, P 019 had the highest leaf retention after abnormal leaf fall disease. In the 8th year of tapping in the CLST, P 080 and P 019 were found to be most tolerant. In the OFT, P 019, P 080, P 070, P 054 and P 044 had more than 50 per cent LR. Regarding TPD in the CLST, P 064 had the highest incidence of TPD while P 044 had the lowest TPD. In the OFT, P 092 had maximum TPD while P 044 had the lowest TPD. Regarding genetic parameters, yield over five years indicated moderate genetic control (broad-sense heritability; H^2=0.55). Based on growth, yield and prevalence of TPD in both CLST and OFT, pipeline clone P 044 emerged as a superior selection with up to 23 per cent yield improvement in yield over RRII 105. Another pipeline clone P 070 showed on par yield performance with RRII 414, RRII 430 and RRII 105 in the OFT and also possessed high level of tolerance to ALF disease. Based on the present study and based on results on previous appreciable performance of these clones in other small scale and large scale trials, the hybrid clone P 044 (86/29; RRII 105 x PR 107) and the open-pollinated half-sib progeny P 070 (HS PB 252/132) were selected and recommended for upgradation in planting recommendation for growers.

Keywords: Abnormal leaf fall disease, Breeding, *Hevea*, Large scale trial, On-farm trial, Participatory clone evaluation, Selection, Tapping panel dryness, Yield

INTRODUCTION

Of the ten reported species of the euphorbiaceous genus *Hevea*, breeding has focused mainly on genetic improvement of *H. brasiliensis* due to its copious latex production in the entire plant kingdom (Wycherly, 1969; Schultes, 1977; George and Panikkar, 2000). Ever increasing demand for

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