

DETERMINING YIELD POTENTIAL DURING EARLY MATURE PHASE OF *HEVEA* CLONES

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Yield data from eight clone evaluation trials, both small-scale and large-scale, were used for yield correlations in the early years with the overall yield. Irrespective of the trial, clones, years of planting and varying duration of yield recording, significant association was noticed between yield in the initial and later years. Yield of clones as early as in the third year in some trials and in the fourth year in all the trials showed strong association with the overall yield. Yield over the first four years of tapping and the BO-1 panel yield were significantly correlated with the overall yield. Yield in the third and the fourth years, entire BO-1 panel yield and the overall yield showed similar pattern in yield variations. Hence it is assumed that yield of clones in the fourth year of tapping is an indication of the overall yield performance of a clone. Thus it is possible that in a regularly tapped clone trial, even if the yield data recording is skipped or missed in the first couple of years, yield recorded in the third and the fourth years may be sufficient to identify clones for yield performance. Moving averages of the annual yields showed that the high yielding clones in the trials were top performing clones in the earlier years also, although there were annual variations. The study showed that promising high yielding clones can be identified from the fourth year of tapping.

Keywords: BO-1 panel, Clones, Correlations, Early yield, Yield pattern

INTRODUCTION

Hevea brasiliensis, a perennial deciduous tree crop with a laticiferous system is the major source of natural rubber (NR). NR extracted from the bark of rubber tree in the form of latex contains rubber particles. Coagulated and dried latex represent commercial yield of rubber. Yield of rubber varies from clone to clone and also from tree to tree due to intrinsic (clone-specific) and environmental (prevailing weather conditions) reasons. Genotype-environment interactions are also major source of yield variations in *Hevea* (Tan, 1995; Costa *et al.*, 2000; Goncalves *et al.*, 2003; Meenakumari *et al.*, 2011). Yield

in *Hevea* shows annual, monthly, and even daily variations. Factors such as the planting material, the environment and their interactions determine quantum of yield in rubber (Mildford *et al.*, 1969; Shangpu, 1986; Paardekoopar, 1989; Ortolani *et al.*, 1998; Reju *et al.*, 2001). Clonal yield variation on account of environmental reasons (annual yield of clones and trials) is the focus of the present study. In order to determine yield potential of a clone, data of many years are needed because of variations in the yield pattern. Hence, identifying early years' yield, especially in the BO-1 panel, corresponding very close to the overall yield of a clone would be beneficial