YIELD FATIGUE IN *HEVEA* CLONES: AN ASSESSMENT OF DECADAL TRENDS IN COMMERCIAL YIELD OF SELECTED CLONES IN THE TRADITIONAL REGIONS OF INDIA

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This paper is a preliminary attempt to understand the decadal trends in the yield of selected *Hevea* clones in the traditional regions based on time series data on commercial yield of three popular clones *viz.*, GT 1, RRIM 600 and RRII 105, from the organized large estates. The trends in average yield (kg ha^{-1}) of the three clones for the first 10 years of tapping during different decades was assessed and inter- decadal growth rates in yield were estimated. Trends in other yield related variables *viz.*, planting density and tapping systems followed were also considered. The analysis revealed a steady decline in the ten year average yield of clones planted during different decades, except an aberration in the case of RRIM 600 during the 1970s. Although the decadal trends in yield fatigue has been reversed to certain extent by the higher yield of high yielding (HY) clones like RRII 105, the trends in yield of the same underline the inherent limitations. The observed changes in planting density and tapping systems are not expected to be yield depressing. Hence, the observed yield fatigue are construed to be the cumulative effect of depleting soil organic content and fertility as well as climate change.

Keywords: Decadal trends, *Hevea* clones, Traditional region, Yield fatigue

The achievements of India's rubber plantation industry in production and productivity of natural rubber (NR) over the past one century had been commendable for the unique policy interventions and the outcomes. In retrospect, three cardinal elements in India's widely acknowledged achievements in the production sector had been: (i) proactive institutional interventions from propagation of planting materials to marketing of rubber; (ii) a highly receptive farming community; and (iii) the successful adoption of high yielding clones and improved agro-management practices. The evolution of the NR sector under various socio-economic, political, technological and institutional contexts had been well documented (George, *et al.*, 1988a; Burger, *et al.*, 1995; George, 1999). The popularization of high yielding (HY) clones of planting materials played a pivotal role among the different schemes launched for enhancing productivity and production since independence (George, *et al.*, 1988b). The transformation from the use of unselected seedlings with an average yield of above

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