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INFLUENCE OF AGE AND GIRTH AT OPENING ON GROWTH AND PRODUCTIVITY OF *HEVEA*

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Influence of different girth at opening for tapping (40, 45, 55, 60 and 65 cm) of *Hevea brasiliensis* trees belonging to three clones *viz.*, GT 1, PB 217 and PB 235 on growth, yield and physiological function were studied over a period of ten years in South Eastern Cote d'Ivoire. Opening girth of 40-50 cm for the clone GT 1 and 50 cm for PB 217 and PB 235 was observed to be ideal. This girth achieved at six years after planting corresponded with the physiological maturity of *Hevea*.

Key words : Girth, *Hevea brasiliensis*, Physiology, Tapping, Tapping Panel Dryness, Yield.

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INTRODUCTION

There exists an antagonism between the biomass production through vegetative growth of *Hevea brasiliensis* and exploitation of the trees for crop production by tapping (Wycherley, 1976; Sethuraj, 1981; Gohet, 1996). Thus higher initial yield may lead to lower vegetative growth and future yield potential and productivity (Templeton, 1969; Ouattara, 1998). A good balance between annual girth and yield has to be maintained in the initial years of tapping (Templeton, 1969) so that the primary biomass production is least affected (Raghavendra, 1991). This will ensure proper physiological functioning of the trees. The girth at opening is of significance in this context and lower girth is an indication of slower growth and maturity (Campagnon, 1986; Obouayeba *et al.*, 2000). This study was aimed at analyzing the effect of girth at opening on growth and yield in three *Hevea* clones grown in south eastern region of Cote d'Ivoire.

MATERIALS AND METHODS

Three clones of *H. brasiliensis* widely cultivated in Cote d'Ivoire with rapid (PB 235) moderate (GT 1) and low (PB 217) metabolic activity of laticiferous system (Eschbach *et al.*, 1984; Jacob *et al.*, 1985; Prevot *et al.*, 1986; Gohet *et al.*, 1991; 1996; Jacob *et al.*, 1995) were included in this study. Based on vegetative growth, the clones belong to fast (PB 235, GT 1) and moderate (PB217) growing categories (Obouayeba *et al.*, 2000).

Four field experiments were laid out, two in the clone GT 1 and one each in PB 217 and PB 235 in an area planted at a spacing of 7 x 2.8 m (510 trees/ha). The mean girth of trees at the beginning of the trials was 39.64 cm. The treatments comprised different girths (30-65 cms) at opening depending on the clones in each experiment. A control (untapped trees) was also maintained. Each treatment was replicated on 33 trees. For GT 1, observations were recorded from a commercial plantation (CP) also for comparison.

In all the treatments except the control, tapping was done on a 1/2S d/4 6d/7 ET 2.5% Pa 1(1) 2a 8/Y system. The clone PB