

METABOLIC ASPECTS OF LATEX REGENERATION *IN SITU* FOR THREE *HEVEA* CLONES

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Some biological parameters of latex, according to the interval between two tappings, were studied in clones PB 235, PB 217 and GT 1 with a view to having a better understanding of metabolic controls and regulation systems involved in latex regeneration. Three days' interval is needed after tapping to obtain maximal yield indicating complete latex regeneration *in situ* for these clones. Analyses of total solids content in the latex and study of other parameters linked to energetic processes of laticiferous cells, such as thiols and inorganic phosphorus content, sugar content and their variations, organic N and total P and ionic (K and Mg) elements were effected. The results obtained lead to link the variations observed in the metabolic activity of laticiferous cells with the tapping intervals and the clones. The results emphasise the importance of metabolic activity in latex regeneration and thus in production. Also, they can explain the differences among these clones in their response to stimulation. They underline the necessity to exploit each *Hevea* clone according to the metabolic typology of its laticiferous system.

Key words : *Hevea brasiliensis*, latex regeneration, Metabolic activity, Latex parameters.

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INTRODUCTION

Two factors may limit latex production in *Hevea brasiliensis*. The first is the flow: the easier and longer it is, the greater the yield. The second is *in situ* latex regeneration, which must be sufficiently active to compensate the loss of cell material between two tappings. These factors thus play a major role in the production potential of rubber trees. Although the general regeneration processes are now known (Jacob *et al.*, 1989a), their operating dynamics have been found to be clone-dependent (Serres *et al.*, 1988) and partly account for production characteristics.

A kinetic study of latex regeneration

against time between two tappings, taking various biological parameters of latex into account, on GT 1 (Jacob *et al.*, 1988), showed the relation between biochemical activity of the laticiferous system and the reconstitution of its contents. The work reported here compares these kinetics under similar conditions in clones with distinctly contrasting metabolic functioning.

MATERIALS AND METHODS

Three clones, GT 1, PB 235 and PB 217, were studied. The trees were in the fourth year of tapping and the tapping cuts were on virgin bark (B01) at similar heights (60 cm). Groups of 10 trees of each clone, each forming a treatment, were tapped on