

ATP CONTENT OF LATEX AS A MARKER FOR HIGH RUBBER YIELD IN CLONES GROWN IN NORTH-EASTERN REGION OF INDIA

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Yield data for 12 years was analyzed from a 25 year old polyclonal *Hevea brasiliensis* population consisting of 284 seedling trees in experiment 1. Based on yield profile, trees were categorized into 10 groups and latex [ATP] was analyzed over two years and its correlation with yield was estimated. High yielding groups showed high yield in all seasons and all the years compared to low yielders. It was observed that mean yield over 12 years was positively correlated with girth ($r=0.55^{**}$) and crop efficiency (yield per cm of tapping cut) ($r=0.85^{**}$). Latex ATP concentration had significant positive correlation with mean seasonal yield and annual yield in the two years in which ATP estimation was done, as well as with the mean yield over twelve years. In the second experiment which was a replicated trial consisting of eleven ortets (selected from experiment 1), latex ATP concentration was positively correlated with the yield of the genotypes, though not significant, possibly due to low coefficient of variation in the selected population. Latex ATP concentration had significant positive correlation with crop efficiency of polyclonal population ($r=0.76^{**}$) and selected genotypes ($r=0.61^*$). ATP concentration in latex is an indicator of high yield potential of rubber trees and can be utilized as a marker for selection of high yielders in the north-eastern region of India.

Key words: ATP, Clone selection, *Hevea brasiliensis*, High latex yield, North-East India

INTRODUCTION

Rubber cultivation is expanding to the north eastern region of India to bridge the gap between its supply and demand. There is a need for introduction of region specific high yielding clones to enhance the production and productivity, which necessitated the development of high yielding clones adapted for the region. However, selection of high yielders takes long time due to the perennial nature of the crop. Polyclonal seed gardens, consisting of

several superior clones planted together, aid in cross pollination and production of heterogeneous progeny population. The high heterogeneity improves their adaptability to new areas and makes them an excellent source of high yielding genotypes.

Latex of *Hevea brasiliensis*, the only commercial source of natural rubber, is the cytoplasm of specialized cells of laticifers (D'Auzac *et al.*, 1989) of rubber tree. Latex is extracted by regular harvesting by tapping,