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CLONAL VARIATIONS IN THE ACTIVITY OF 3-HYDROXY-3-METHYL GLUTARYL-CoA REDUCTASE IN BARK OF *HEVEA BRASILIENSIS*

N. Usha Nair, Molly Thomas, S. Sreelatha, Sheela P. Simon, K. R. Vijayakumar and P. J. George

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HMG CoA reductase activity in the bark of *Hevea brasiliensis* was estimated in four clones with contrasting yield characteristics. Significant difference in bark enzyme activity was observed between the high yielding and low yielding clones.

Key words : *Hevea brasiliensis*, Clonal variation, HMG-CoA reductase, Rubber biosynthetic capacity.

N. Usha Nair (for correspondence), Molly Thomas, S. Sreelatha, Sheela P. Simon, K. R. Vijayakumar and P. J. George, Rubber Research Institute of India, Kottayam – 686 009, India.

INTRODUCTION

Two major factors limiting latex production in *Hevea brasiliensis* are flow characteristics which govern the quantity of latex obtained on tapping and the *in situ* regeneration of latex between two successive tappings. Although the pathway of rubber biosynthesis, as far as the intermediates and enzymes are concerned, is well understood but not much work has been done on the factors controlling regeneration of latex and thereby that of rubber. A knowledge of the regulatory mechanisms might find immediate practical application in controlling or stimulating rubber production in the *Hevea* tree at least to certain extent. A look into the activities of the enzymes involved in rubber biosynthesis from acetate shows that HMG-CoA reductase (EC 1.1.1.34) activity, which is responsible for the formation of mevalonic acid, is much lower and that this enzyme may be a limiting factor in rubber biosynthesis (Lynen, 1969). Reports on the biosynthetic rates of rubber regeneration in the bark during the interval between successive tappings are scanty. A study was therefore undertaken to estimate the HMG-CoA reductase activity in the bark in the drainage area in four clones, two each belonging to high yielding and low yielding groups, in an attempt to find out any possible relationship between the activity of this enzyme and yield of rubber. A quick indirect method of estimating HMG-CoA reductase activity was employed with an objective of ascertaining the suitability of such a method for large scale screening.

MATERIALS AND METHODS

Bark samples were collected in the dry season (March-April) of 1989 from six trees each of clones RRII 105, PB 235 (high yield-