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# ISOZYME STUDIES ON DIFFERENT CYTOTYPES OF *HEVEA BRASILIENSIS*

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Leaf extracts of diploid, triploid and tetraploid clones of *Hevea brasiliensis* were analysed for isozyme variation of five enzyme systems using polyacrylamide gel electrophoresis. Esterase, peroxidase, acid phosphatase, diaphorase and isocitrate dehydrogenase produced sharp and well resolved bands. The qualitative zymogram studies showed marked variation in banding patterns among the cytotypes. Esterase showed a decrease in the mean number of bands with increase in ploidy level. An enhancement in the number and intensity of bands in tetraploid was observed in the case of isocitrate dehydrogenase and diaphorase. Banding site polymorphism between cytotypes indicated the usefulness of isozymes for clone characterisation.

Key words : *Hevea brasiliensis*, Isozymes, Diploid, Triploid, Tetraploid.

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## INTRODUCTION

Isozyme markers are widely used in genetic research and plant breeding. Analysis of isozyme variability in populations has provided useful information on the organisation of the gene pool in a large number of species (Gottlieb, 1981). Nielson (1985) reviewed the use of isozymes for the identification of plant varieties and cultivars. By isozyme analysis, several enzyme gene loci have been identified in *Hevea* for genetic variability studies in the germplasm materials (Chevallier, 1988). Yeet *et al.*, (1977) have also investigated the isozymes in latex serum of some *Hevea* cultivars and reported in favour of using them in clone identification. However, electrophoretic separation of proteins and isozymes in different cytotypes of *Hevea* has so far not been attempted. In the present study, isozyme analysis of five selected enzyme systems viz. esterase (EST), peroxidase (PER), acid phosphatase (AP), diaphorase (DIA) and isocitrate dehydrogenase (IDH) in diploid, triploid and tetraploid clones of *Hevea* were carried out to study enzyme polymorphism among these cytotypes for characterisation.

## MATERIALS AND METHODS

The plant material consisted of the diploid clone (2n = 2x = 36) RRII 105, a

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