

## GENETIC ANALYSIS OF SOMATIC EMBRYO-DERIVED PLANTS OF *HEVEA BRASILIENSIS* (CLONE RRII 105) USING RAPD MARKERS

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Genetic stability of somatic plants developed through somatic embryogenesis from immature anther-derived callus cultures of *Hevea brasiliensis* (clone RRII 105) was examined using random amplified polymorphic DNA (RAPD) analysis. Ten somatic plants along with their mother tree and 10 monoclonal seedlings were subjected for RAPD analysis and compared. Fifteen arbitrary decamers displayed monomorphic banding profile within all somatic plants and their mother plant. However, polymorphism was detected among monoclonal seedlings with all the five primers tested. UPGMA-based dendrogram showed that all the somatic plants along with the source plant clustered together and no variation was observed among these plants. Absence of polymorphism displayed in the RAPD profile indicated a stable genome in plants developed through somatic embryogenesis.

**Keywords:** Genetic stability, *Hevea brasiliensis*, Polymorphism, RAPD markers, Somatic embryogenesis

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### INTRODUCTION

In tissue culture, genetic stability of the regenerants is an important requirement. All regenerated individuals are expected to be genetically similar with the mother plant. Despite the advantages of the regeneration system, genetic variability also has been observed among *in vitro*-derived plants (Isabel *et al.*, 1993; Salvi *et al.*, 2001; Soniya *et al.*, 2001). Genetic variability may sometimes be beneficial for crop improvement programmes. However, when the system is utilized for mass multiplication and genetic transformation of a particular variety or clone with potential characters, random

genetic changes are not desirable. It is, therefore, essential to assess the genetic stability/ variability of plantlets before utilizing the system for crop improvement programmes.

Among the different methods for assessing genetic variability, molecular markers are powerful tools since they are stable and detectable in all tissues. Of all available techniques, random amplified polymorphic DNA (RAPD) analysis is a useful and rapid technique. RAPD analysis has been successfully used to determine the genetic integrity of regenerants in many plant species like turmeric (Salvi *et al.*, 2001), tomato