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INFLUENCE OF GROWTH REGULATORS AND SUCROSE ON SOMATIC EMBRYOGENESIS AND PLANT REGENERATION FROM IMMATURE INFLORESCENCE OF *HEVEA BRASILIENSIS*

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A method for somatic embryogenesis and plant regeneration from immature inflorescence of *Hevea brasiliensis* , clone RRII 105 is described. The influence of different growth regulators and sucrose at various stages of this pathway has also been investigated. Among the different growth regulators tested for callus induction, synergistic effect of the two auxins 2,4-D and NAA was observed. Optimum growth regulator combination for callus induction was found to be 2,4-D / NAA / KIN (4.5 /2.7 /2.3 µM). Embryo induction was favoured by both BA and zeatin in the presence of low levels of NAA or 2,4 -D. Significant increase in embryo induction frequency was observed in the presence of GA_3. A higher sucrose level was found to be essential for effective embryo induction as well as maturation. ABA did not show any positive effect on embryo maturation, eventhough lower levels of ABA in the maturation medium enhanced proliferation and further embryogenesis. Plant regeneration frequency was found to be higher on media fortified with BA and GA_3. Lower sucrose level was found to be beneficial for plant regeneration.

Key words : Growth regulators, *Hevea brasiliensis*, Plant regeneration, Somatic embryogenesis, Sucrose.

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INTRODUCTION

Although considerable progress has been made for rubber tree (*Hevea brasiliensis*) improvement during last few decades, the narrow genetic diversity available within the *Hevea* gene pool is a major constraint for conventional breeding. Moreover, long breeding cycle and heterozygous nature of this perennial tree crop make it imperative to seek unconventional methods including gene transfer technology for crop improvement. An efficient plant regeneration system is one of the prerequisites for the feasibility of genetic manipulation studies in *Hevea*. Plant regeneration via somatic embryogenesis has recently become an attractive tool for the production of transgenic plants, because of its single cell origin.

Experiments on somatic embryogenesis of *H. brasiliensis* started as early as the 1970s. Successful plantlet production through somatic embryogenesis was