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OPTIMIZATION OF PARAMETERS AFFECTING SOMATIC EMBRYOGENESIS IN *HEVEA BRASILIENSIS*

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Culture conditions and other parameters for improving the efficiency of somatic embryo induction and germination were investigated. Explants precultured in liquid medium for 10 days followed by 25 days culture in solid medium was most suitable for primary callus induction. Fifteen day old primary callus was found to be ideal for first subculture onto embryo induction medium. Histological analysis confirmed the relationship of callus age and its morphogenetic potential. Polyamines had no significant effect on somatic embryogenesis except for a slight enhancement with 0.5 mg/l spermidine. Embryo induction efficiency was promoted by supplementing 200 mg/l glutamine and 400 mg/l casein hydrolysate in embryo induction medium. Dark incubation favoured induction and proliferation of callus as well as induction of embryogenesis whereas plantlet regeneration was found to be light-dependent. From these results, an efficient method for proliferation of callus, induction of embryos and their maturation is proposed.

Key words : Callus induction, Embryo germination, *Hevea brasiliensis*, Somatic embryogenesis.

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INTRODUCTION

The application of conventional breeding techniques for crop improvement programmes in *Hevea brasiliensis* is limited due to its high heterozygosity and long generation cycle. Recent developments in cellular and molecular biology opened up an alternative and new avenue for crop improvement by the introduction of DNA transfer technology. However, the utilization of these technology is dependent on the availability of an efficient plant regeneration protocol compatible to the gene transfer methods. Plant regeneration through somatic embryogenesis is currently receiving much attention, since this is a very useful technique for the exploitation of the natural