

SOMATIC EMBRYO GERMINATION IN *HEVEA BRASILIENSIS*: EFFECT OF EMBRYO DESICCATION, PHYTOHORMONES AND PHLOROGLUCINOL

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Somatic embryo induction was achieved earlier with a high frequency (>70%) from leaf explants of glass house grown, bud grafted plants of *Hevea brasiliensis* (clone RR21 105). Experiments were carried out to improve quality of germinating embryos, enhance rooting and improve embryo-plant conversion. White, opaque embryos at the cotyledonary stage were cultured for two weeks in maturation medium after which they were given different desiccation treatments. Three desiccation treatments such as slow and fast desiccation in empty petri dishes and water stress by PEG (10, 15 and 20 g L⁻¹) were provided. Embryos after desiccation were cultured in maturation medium where the IAA/GA₃ ratio was optimized. The effect of phloroglucinol (0-200 mg L⁻¹), in the germination medium containing the optimized level of phytohormones was also studied. Among the desiccation treatments tried, slow desiccation of embryos in sealed Petri dishes for 3 days, after an initial two week culture in maturation medium, improved embryo quality and rate of germination. It was observed that optimizing the ratio of IAA/GA₃ in presence of ABA (0.1 mg L⁻¹) in the germination medium, favoured embryo germination after the desiccation treatment. Phloroglucinol (100 mg L⁻¹) enhanced rooting by lateral root induction in 40 per cent of germinating somatic embryos. Germination response was evaluated in terms of both root-shoot apex induction and conversion to plantlets. The effect of embryo desiccation and phloroglucinol in presence of phytohormones, on somatic embryo germination and embryo-plant conversion in *Hevea* is discussed.

Keywords: Embryo desiccation, Germination, Phloroglucinol, Phytohormones

INTRODUCTION

Hevea brasiliensis belonging to the Euphorbiaceae family is the major commercially cultivated species as a source of natural rubber. Commercial propagation in this cross pollinated tree is by bud grafting, since the seedlings are highly

heterozygous. Systems for plant regeneration through somatic embryogenesis from inner integument, immature anthers and immature inflorescence have been reported earlier in *H. brasiliensis* (Carron and Enjalric, 1982; Jayasree *et al.*, 1999; Sushamakumari *et al.*, 2000). Etienne *et al.* (1993) has reported that, relatively poor germination of somatic