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FIELD PERFORMANCE OF *HEVEA* TREES RAISED THROUGH UNCONVENTIONAL NURSERY TECHNIQUES

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In a study on the effect of nursery practices on growth and yield of *Hevea brasiliensis* trees it was observed that the field performance of bench-grafted plants is comparable to that of nursery grafted plants. The practice of high budding and different methods of deep planting had no influence on growth of budded stumps in the field. Polybag plants exhibited superiority in growth over budded stumps during the initial stages. There was no uprooting of plants irrespective of the treatments.

Key words: Bench-grafting, Budding, Deep planting, Field performance, *Hevea brasiliensis*.

Rubber (*Hevea brasiliensis)* plantations are normally raised from high yielding clonal material propagated by bud grafting. *In situ* grafting using a bud patch on stocks growing in a ground nursery is the widely followed method of propagation. A variant of this technique called bench-grafting is practiced in *Citrus* (Mahlstede and Haber, 1966); pine, *Magnolia*, oak, *Rhododendron* (Macdonald, 1986); *Picea* (Macdonald, 1990); walnut (Bhat *et al.*, 2000; Solar *et. al.*, 2001) and grapevine (Rezende *et al.*, 2001). It is a grafting method performed on a work-bench inside covered structures (Mahlstede and Haber, 1966; Macdonald, 1986). For this, stock plants are removed from the soil and budding is carried out indoors. This is usually adopted under adverse climatic conditions for outdoor grafting such as severe cold, extreme summer and heavy rains. Bench-grafting of brown buds of five popular rubber clones on ten month-old stock plants (Marattukalam and Varghese, 1993), and green buds of the clone RRII 105 on six month-old stock seedlings (Marattukalam and Varghese, 2000), has been successfully performed on *Hevea brasiliensis*.

In the normal budgrafting procedure, budding is carried out just above the collar region of the stock plant and during planting, very little stem of stock is buried in the soil. It is reported that if budding is carried out at a higher level and a longer portion of the stock stem is buried in the soil while planting, the plants develop additional roots from that region, resulting in more transplanting success, vigorous growth in the initial months and better anchorage (Yoon and Ooi, 1976; Yoon and Ooi, 1978; Nair, 1983; Yoon *et al.*, 1985; Tiong and Kheng, 1987). In such studies, the buried taproot

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