Factors Affecting *Ex vitro* Rooting of *Maytenus emarginata*

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ABSTRACT

Maytenus emarginata (Celastraceae), commonly known as 'Kankero' is an ecologically and economically valuable tree species of the Thar Desert and the neighbouring Aravalli ecosystems. We report here on development of improved protocol for cloning of this species through rooting of *in vitro* raised microshoots under *ex vitro* environment of green house. We conducted experiments to optimise the concentrations of IBA for inducing *ex vitro* rooting. Effects of different physical (time duration of auxin treatment, humidity, temperature) and chemical factors (auxin protectors-ferulic acid, chlorogenic acid and phloroglucinol) affecting *ex vitro* rooting were studied. About 90% shoots rooted *ex vitro* on soilrite within 12-15 days when base of shoots was treated with 250 mgl^{-1} of IBA for 5 minutes and incubated under 60-70% relative humidity at 31 ± 2°C. Each of the shoot produced 7.8 ± 0.83 roots (each root 4.46 ± 0.18 cm long). Treatment of shoots with ferulic acid along with IBA speeded up root initiation. The plantlets of *M. emarginata* were hardened successfully in the greenhouse and transferred to the pots and field. The method defined is superior over and simple than was reported earlier. *Ex vitro* rooting technique serves as a more economical option as it reduces labour, cost, and time.

Key words: Acclimatization, Auxins protectors, *Ex vitro* rooting, *Maytenus emarginata*, Microshoots, Recalcitrance

Abbreviations: CA – Chlorogenic acid, FA – Ferulic acid, IBA -Indole-3-butyric acid, MS – Murashige & Skoog, PG – Phloroglucinol, PGR's – Plant Growth Regulators, RH – Relative Humidity

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