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Rooting and acclimatization of *in vitro* propagated *Celastrus paniculatus* Willd. (Duhudu)

M A N de Silva[1], W T P S K Senarath [2*] and K S S Sugathadasa[1]
[1]*Botany Division, Bandaranaike Memorial Ayurvedic Research Institute (BMARI), Nawinna, Maharagama*
[2] *Department of Botany, University of Sri Jayawardenepura, Nugegoda*

Celastrus paniculatus Willd. (Family Celastraceae) [Duhudu (S)] is an important medicinal plant listed as a threatened plant in Red data list published by IUCN in 1999. *In vitro* shoot multiplication was successful and the objective of this study was to determine a suitable growth regulator combination for *in vitro* root initiation and acclimatization of micropropagated plants.

In vitro propagated shoots obtained from nodal segment explants grown in Murashige and Skoog medium supplemented with 5.0 µM BAP and 0.5 µM IAA for 10 weeks were used for root initiation. Different concentrations of IAA and IBA were used in MS basal medium in order to induce rooting and

cultures were incubated under 16 h light at 25 ± 1 º C. Number of roots per shoot was measured weekly over a period of eight weeks. Mean root length was measured at sixth week before transferring into sterile sand for acclimatization. Plants were acclimatized in a humid chamber for three weeks and then different potting mixtures (i.e. Top soil : Coir dust : Compost, (1:1:1), River sand : Coir dust : Compost (1:1:1), River sand : Top soil : Compost (1:1:1) and River sand : Top soil : Coir dust (1:1:1)) were used to determine the survival percentage of plants. Plant height, number of leaves and number of branches were recorded over a period of six months.

Root initiation was observed after 15 days in MS medium supplemented with 5.6 µM IAA and 9.6 µM IBA (5.6 ± 0.81 roots per shoot and 73.3 % rooting). All the other media tested showed lower percentage of rooting and time taken for root initiation was longer. Best potting mixture for growth of acclimatized plants was a mixture of River sand: Top soil: Compost (1:1:1) (80 % survival). Mean height of the plants and mean number of leaves per plant increased in a constant manner over the period of six months and plants were morphologically similar to natural plants.

Since growth conditions *in vitro* are different from those under natural conditions, it is possible to show deviations in anatomy, morphology and especially in chemical composition in micropropagated plants. Therefore further studies will be carried out in order to determine the chemical composition and anatomical structure of *in vitro* propagated plants.

*senerath@yahoo.co.uk Tel: 011-2847722