

***In Vitro* Establishment of *Cissampelos pareira* Linn (Diyamiththa)**

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Abstract

Cissampelos pareira Linn: a slender climber belongs to the family Menispermaceae, is a highly valued medicinal plant species known as Diyamiththa in Sri Lanka. It has been used as an ingredient in ayurvedic, unani and traditional Chinese medicine for centuries. *Cissampelos pareira* contains numerous secondary metabolites as berberine, hayatine, cissampeline, pareirubrine A and B which had been tested for their medicinal values and hence has great potential to produce drugs. The plant is conventionally propagated by seeds and root cuttings. But to extract the valuable secondary metabolites, a large collection of quality plants is required. Therefore, aim of this study was to develop a suitable *in vitro* establishment procedure for the mass production of this important medicinal herb. Nodal segment explants were collected from 10 weeks old mother plants maintained in shade house conditions. Best surface sterilization procedure was tested using combinations of three Clorox concentrations (10%, 15%, 20%) and two exposure time periods (10 min, 20 min). For shoot induction and multiplication, the established cultures were transferred to Murashige and Skoog medium supplemented with various combinations and concentrations of kinetin (1 mgL⁻¹, 1.5 mgL⁻¹, 2 mgL⁻¹) and 6-benzylaminopurine (1 mgL⁻¹, 2 mgL⁻¹) with constant level of 1-naphthalene acetic acid (1mgL⁻¹). The study was carried out in Completely Randomized Design (CRD) with 20 replicates. Growth data were recorded as the number of multiple shoot formation, shoot length, and survival percentage. Results revealed that 20% Clorox for 20 minutes showed least contaminations (12.5%) on nodal explants among tested Clorox levels. Highest shoot proliferation rate (7.8) was observed in Murashige and Skoog medium supplemented with 0.1mgL⁻¹ 1-naphthalene acetic acid, 2mgL⁻¹ 6-benzylaminopurine and 2mgL⁻¹ Kinetin. Highest shoot proliferation rate was observed after five weeks from culture initiation. Findings of the study can be used for future *in vitro* propagation studies of *Cissampelos pareira* Linn.

Keywords: *Cissampelos pareira* Linn, Establishment and proliferation, Micropropagation, Nodal explants

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