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**Mass production of *Plectranthus zeylanicus-* A valuable medicinal and aromatic plant with a future value**

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**ABSTRACT**

*Plectranthus zeylanicus isa medicinal and an aromatic herb native to Sri Lanka of family Lamiaceae.It is known to contain strong aromatic chemicals as other members of the Plectranthusgenus. Currently, because of the significance of aromatic chemicals and essential oils in perfumery industry, flavoring industry, pharmaceuticals and various other fields demands the increased production of them in lesser time and cost. The present work was aimed to develop a protocol for mass scale propagation of Plectranthus zeylanicus through tissue culture techniques. Shoot tips and nodal segments were selected as explants, collected from well-maintained shade house grown one-month old mother plants. Murashige and Skoog (MS) medium was used throughout the experiment. For shoot induction and proliferation, MS medium supplemented with combination of 1-Naphthalene acetic acid (NAA) and different levels of N6-benzylaminopurine (BAP) were used. In vitro rooting was achieved to 50% strength MS basal medium containing different levels of Indole Acetic Acid (IAA) and NAA. Such in vitro produced plants were acclimatized and survival percentages were obtained. The explants from nodal segments gave better results in shoot initiation compared to those from the shoot tips on all the media combinations tested. The highest rate of shoot induction (97.8%) and highest number of shoots per explant (8.9) were obtained in MS medium supplemented with 2.0 mg/l BAP from nodal explants and was significantly different at 5% significant level. The highest rate of shoot proliferation (85%) and number of shoots per explant (8.8) was obtained on media supplemented with 2.0 mg/L BAP + 0.1 mg/L NAA after six weeks of nodal culture and shoot tip cultures supplemented with 2.0 mg/L BAP + 0.1 mg/L NAA resulted highest number of shoots per explant (5.5) with 78% shoot proliferation, after 6th week of culture initiation. The shoot proliferation was more effective in nodal segments than from shoot tip cultures resulting from observations and analysis. Therefore 6th week is the best period to get optimum number of shoots from nodal segments. It was observed that with 0.5mg/L IAA with 0mg/L NAA resulted highest number of roots/explant and the longest roots were recorded with the control treatment. Therefore, it is possible to deduce that the current protocol is promising for in vitro mass propagation of Plectranthus zeylanicus, a valuable medicinal plant with promising future in aromatic and pharmaceutical industry.*

***Keywords*:** micropropagation, *Plectranthus zeylanicus*, plant growth regulator, rapid multiplication.