

In vitro Multiple Shoot Regeneration from Stem Explant of Commercially Important Medicinal Herb *Labisia pumila* var. *pumila*

ABSTRACT

Labisia pumila is a popular medicinal herb species attributed with several traditional uses especially for women healthcare. In this study, a protocol for multiple shoots regeneration from stem explants was established for *Labisia pumila* var *pumila*. The adventitious shoot formation from stem explant in response to various plant growth regulators (PGRs) was investigated. Stem explants excised from in vitro plantlets were cultured on Murashige and Skoog (MS) medium supplemented with various concentrations of 1-Naphthaleneacetic acid (NAA), Kinetin, 6-Benzylaminopurine (BAP), Zeatin (ZEA) and 2, 4-Dichlorophenoxyacetic acid (2, 4-D). Direct shoot or root regeneration started within 4-6 weeks in most of the PGRs treatments. Highest responsive explant ($88.90 \pm 19.2\%$) with 6-7 shoots per explant was obtained from MS medium containing 20 μM ZEA after 6 weeks of culture. Combinations of NAA and ZEA promote formation of compact callus and followed by rhizogenesis. After 12 weeks, the regenerated shoots were further elongated on MS medium without plant growth regulators. The individual elongated shoots were then transferred to rooting media containing 0.05 - 2.5 μM NAA. All treatments responded well on rooting formation, but treatment with 2.5 μM of NAA promoted the highest number of roots per explant (6.7 ± 1.2). The rooted plantlets were acclimatized successfully on peat moss or soil media with a survival rate of 70%- 90%. The micropropagation method described in this study has a potential as an alternative for sustainable propagation material of this commercially important medicinal plant.