

Effect of growth regulators and explant orientation on shoot tip culture of Borneo endemic orchid, *Dimorphorchis lowii*

Abstract

Multiple shoots were induced from the shoot tip explants derived from the in vitro grown seedlings of an endangered and horticultural important epiphyte orchid, *Dimorphorchis lowii*. Shoot tip explants were cultured vertically and/or horizontally on solidified Knudson C media (KC) added with various concentrations of Kinetin (Kn) and 6-Benzylaminopurine (BAP) for shoots multiplication. Shoots were initiated after 4 weeks of culture, and the highest number of healthy shoots (5.05 shoots per explant) was observed in 2.0 mg/l Kinetin (Kn), when the explant placed horizontally. Regenerated shoots were root-induced in KC medium with various concentrations and combinations of Naphthalene acetic acid (NAA), Indole acetic acid (IAA) and Indole butyric acid (IBA). Shoots cultured on medium with 1.0 mg/l IAA and 0.5 mg/l IBA was the most appropriate combination for rooting. Rooted plantlets were transferred in a medium mixture containing coco peat and sphagnum moss (2:1). After 2 months, 78% of plants survived when transferred to the glasshouse. This is the first report for in vitro propagation of *D. lowii* through shoot tip culture. The protocol developed can be utilized for both large-scale plant production and germplasm conservation of this species