

**In vitro shoot multiplication and rooting of shoot tip explants of
dimorphorchis lowii: an endemic orchid of Borneo**

Abstract

Five complex additives were evaluated for multiple shoot formation and rooting of *Dimorphorchis lowii* namely banana homogenate, coconut water, peptone, tomato juice and yeast extract. The basal medium used was Knudson C. Shoot tips grown from protocorms of *D. lowii* seeds were used as explants. The best performances for shoot multiplication after 6 months were seen in cultures with 150 ml L⁻¹ coconut water when explants were placed horizontally with the maximum percentage of explant forming shoot (100 ± 0.00), the highest number of shoots per explant (13.83 ± 6.12), and the maximum length of shoot (mm) (38.86 ± 11.90). However, the maximum percentage of survival was best seen in explants that were positioned vertically (97.50 ± 7.91). The maximum percentage of shoots forming root (100.00 ± 0.00) was best seen in 2g L⁻¹ peptone after 4 months of culture. Coconut water at 150 ml L⁻¹ gave the highest number of roots per shoot (3.00 ± 1.44) and the highest root length (15.18 ± 7.69) was observed in 2 g L⁻¹ yeast extract. Rooted plantlets were able to grow into normal plantlets in ex vitro condition after four weeks of acclimatization. This is the first report for in vitro shoot multiplication and rooting of *D. lowii*. The protocol developed could be used as an alternative method for large-scale production of this species.