

Asymbiotic germination and seedling development of *dimorphics lowii* (orchidaceae)

Abstract

Dimorphorchis lowii, a threatened Borneo endemic epiphytic orchid, is gradually becoming rare due to over collecting and habitat disturbance. Therefore this study was carried out to obtain in vitro propagation through asymbiotic seed germination and seedling development by optimizing capsule maturity, nutrients requirements and light conditions before introduce back to its natural habitat for conservation purposes. Capsules were collected at 100, 150 and 170 days through hand-pollination. The seeds were germinated on Murashige and Skoog (MS), Knudson C (KC) and Vacin and Went (VW) media added with 10% additives (coconut water, potato homogenate and tomato juice) under light and dark conditions. Seeds from 150 days old capsule grow on VW medium added with potato homogenate under light condition were observed to be an optimum condition with higher germination percentage as compare to other treatments. Seeds started to germinate by swollen of embryo (8 days) before the testa were ruptured at 23 days and further developed into mature protocorm at 33 days. Seeds with 4 leaves and 5 roots were ready for hardening process within 200 days. A successful developed system for in vitro propagation will contribute to the development of a sustainable management program for *D. lowii* in Sabah, Malaysia.