

Asymbiotic germination of Borneo endemic orchid vanda hastifera

ABSTRACT

Orchid seeds are tiny, extremely light and often referred as "dust seeds". The seeds produced in vast numbers and contain very small nutrient reserves (Arditti and Abd Karim, 2000). Seeds may germinate in nature but will not grow unless infected by mycorrhizal fungus, which supplies the young plants with all the sugars and nutrients they need until the plants are old enough to produce food on their own (Rajkumar et al., 2008). In spite of huge number of seeds produce, only few seeds germinated in nature. In natural conditions, the life cycle of orchid is very long, it takes them approximately 4 to 10 years to bloom and produce seeds and this bring the difficulties for wild orchids to re-establish their position in natural habitats (Arditti, 1967). Therefore the application of plant tissue culture technique is proved to be the most efficient approach to conserve orchid species. In the present study, *Vanda hastifera* was selected because of the distribution of this Borneo endemic orchid has been depleted from its natural habitat because of the deforestation activities towards urban and agriculture development. This orchid was originally found mainly in Mt. Kinabalu and Tambunan district of Sabah (Chan et al., 1994). The flower of *V. hastifera* is white-cream with brown spots and it has a sweet scented which remain flowered throughout the year. The purpose of this study is to optimize the best medium for in vitro seed germination by determine the effect of basal media, complex additives and carbon sources for nurturing the conservation efforts of this valuable native orchid.