

Effect of Protocorm-Like Body Induction of *Phalaenopsis violacea* Witte

Prepared by: Lee Sin Ni

ABSTRACT

Phalaenopsis violacea, an endangered orchid species listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Flora and Fauna requires lots of efforts in conserving the species such as through *in vitro* cultivation. A promising technique which is tissue culture could be used to micropropagate this species to prevent extinction. Different concentrations of various auxins such as 2,4-dichlorophenoxyacetic acid (2,4-D), 1-naphthaleneacetic acid (NAA) and picloram at 0.00, 0.05, 0.10, 0.20, 0.50, 1.00, 2.00 and 5.00 mg/L were tested to identify the optimum concentration to yield better protocorm-like body (PLB) induction in this species. The cultures were incubated at 25°C in the dark for 60 days. The effects of different concentrations of various auxins were determined by observing the parameters such as explant viability, explant enlargement, percentage of (%) explant induction and percentage of (%) induction rate. The significant difference caused by the auxin type and concentration in this study was tested using ANOVA followed by Fisher's Least Significant Difference at the confidence level of $\alpha = 0.05$. It was shown that auxin type and concentration significantly affected all the observed parameters (greater than 99.5% significance). All of the explants did not show PLB formation but protuberances formed at the edge of the explants were identified as proembryogenic masses (PEMs). The results showed that 0.05 mg/L of NAA gave the optimum result in explant viability (100%), explant enlargement (37%), % induction (25%) and % induction rate (55%) than other auxin type and concentration.