

Effect of NAA and BAP on protocorm proliferation of Borneo scented orchid, *Vanda helvola*.

ABSTRACT

A simple and efficient multiplication protocol was developed for *Vanda helvola* using protocorms produced by seeds germination as explant sources. Protocorms were cultured on Knudson C as a basal medium with addition of alpha-Naphtaleneacetic acid (NAA) or 6-benzylaminopurine (BAP) singly or combinations under continuous illumination at $25\pm 2^{\circ}\text{C}$ for 180 days after culture (DAC). In single hormone study, protocorms were cultured on media supplemented with NAA or BAP (0.1, 0.5, 1.0, 2.0 and 4.0 mg l⁻¹). At 120 DAC, treatments with NAA or BAP (0.5, 1.0 and 2.0 mg l⁻¹) gave an obvious multiplication rate and were proceeded to the next study of hormones combinations. All protocorms were proliferated on all treatments at 180 DAC but varied in number of new protocorms they produced and the time required for the initiation of new protocorms. Protocorms cultured on a medium containing 2.0 mg l⁻¹ BAP + 0.5 mg l⁻¹ NAA produced the highest percentage of new protocorms ($65 \pm 20.88\%$) with an average of 3 ± 0.77 per protocorm at 60 DAC. Production and development of new protocorms increase until 180 DAC with an average 9 ± 2.2 new protocorms produced per explant. First shoot (0.5-1.0 mm) were observed on new protocorms at 60 DAC. After 180 days of culture new protocorms produced two leaves (2-3 mm in length).

Keyword: Phytohormone; Orchid; *Vanda*; Borneo; *Vanda helvola*; Protocorm; Alpha-Naphtaleneacetic acid (NAA); 6-benzylaminopurine (BAP).