

Influence of Organic Supplements on Shoot Multiplication Efficiency of *Phaius tankervilleae* var. *alba*

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Abstract : The influence of organic supplements on growth and multiplication efficiency of *Phaius tankervilleae* var. *alba* seedlings was investigated. 12 week-old seedlings were cultured on half-strength semi-solid Murashige and Skoog (MS) medium supplemented with 30 g/L sucrose, 8 g/L agar and various concentrations of coconut water (0, 50, 100, 150 and 200 mL/L) combined with potato extract (0, 25 and 50 g/L) and the pH was adjusted to 5.8 prior to autoclaving. The cultures were then kept under constant photoperiod (16 h light: 8 h dark) at 25 ± 2 °C for 12 weeks. The highest number of shoots (3.0 shoots/explant) was obtained when cultured on the medium added with 50 ml/L coconut water and 50 g/L potato extract whereas the highest number of leaves (5.9 leaves/explant) and roots (6.1 roots/explant) could receive on the medium supplemented with 150 ml/L coconut water and 50 g/L potato extract. Additionally, plantlets of *Phaius tankervilleae* var. *alba* were transferred to grow into seven different substrates i.e. soil, sand, coconut husk chip, soil-sand mix (1: 1), soil-coconut husk chip mix (1: 1), sand-coconut husk chip mix (1: 1) and soil-sand-coconut husk chip mix (1: 1: 1) for four weeks. The results found that acclimatized plants showed 100% of survivals when sand, coconut husk chip and sand-coconut husk chip mix are used as substrates. The number of leaves induced by sand-coconut husk chip mix was significantly higher than that planted in other substrates ($P > 0.05$). Meanwhile, no significant difference in new shoot formation among these substrates was observed ($P < 0.05$). This precursory developing protocol was likely to be applied for more large scale of plant production as well as conservation of germplasm of this orchid species.

Keywords : organic supplements, acclimatization, *Phaius tankervilleae* var. *alba*, orchid

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