

Micropropagation of *Dendrobium* “Udomsri”

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Dendrobium ‘Udomsri’ Beauty is a hybrid orchid variety cross between *Dendrobium chiunsangon***Dendrobium mae-klong river*. Though *Dendrobium* ‘Udomsri’ has a higher demand in the floriculture industry, supply is not adequate due to problems in the conventional propagation methods, such as slow growth rate, low multiplication rate and low viability of seeds, etc. The objectives of this study were to identify an optimum combination of 6-Benzylaminopurine and Naphthelene acetic acid (0-control, 1, 2, 3, 4, 5 mg/L BAP with 0.1, 0.5 mg/L NAA) for shoot regeneration, an optimum concentration of Indole-3-butyric acid (0.05, 1.0, 1.5 and 2 mg/L IBA) for root induction and to observe the survivability of *Dendrobium* ‘Udomsri’ to the natural environment after acclimatization. To determine the survival rate of *in-vitro* developed plantlets, 25 plants were introduced to the natural environment. After 30 days following observation were recorded Number of shoots per explant (*in-vitro* shoots), number of days to shoot production, number of roots per explant (*in-vitro* shoots), number of days to rooting, root length and number of surviving plants were recorded. Treatments were arranged in a Completely Randomized Design (CRD) with five replicates for each treatment. Data were analyzed using SAS software (version 9.1.3). Solid MS basal medium with MS+ 0.1 mg/L NAA+ 1 mg/L BAP showed a significantly higher number of shoots (6.4±0.4) and a significantly higher regeneration (54±1.50%) within 14 days. In root induction, significant difference was observed from MS+0.5 mg/L IBA with the highest number of roots (3.75±0.31) and the highest root length (1.18±0.16 cm) within 14 days. After acclimatizing the healthy well-rooted plantlets were transferred to the shade house and 96% survival rate was obtained. MS+0.1 mg/L NAA+ 1 mg/L BAP was the best for shoot regeneration and MS+0.5 mg/L IBA is the best for rooting of *Dendrobium* ‘Udomsri’, among the concentrations and the combinations tested.

Key words: BAP, *Dendrobium* ‘Udomsri’, IBA, Micropropagation, MS medium, NAA