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# Effective In-Vitro Culture Medium for Multiplication of *Phalaenopsis* cv. Pink Lip via Protocorm-like Bodies

**Wishwakulathilaka, D.T.*, Priyadarshan, A.I.S., Senanayake, S.P.**

*Department of Plant and Molecular Biology, University of Kelaniya, Kelaniya, Sri Lanka*
*dilsharathilukshi@gmail.com

## Abstract

*Phalaenopsis* are the most commercialized cut or pot flowers due to their long-lasting and varied flower morphology. At present, the technique of plant tissue culture has been used as the most effective and widely used way to overcome the limitations of conventional cultivation and for the rapid mass propagation of high-value *Phalaenopsis* plants. In tissue culture, the plantlets produced from protocorm-like bodies (PLBs) are genetically identical to the parent plant and important for the rapid multiplication of plants with desirable traits. PLBs need to be transferred to a nutrient-rich growth medium for rapid multiplication. Therefore, the selection of an effective culture medium for the multiplication of PLB is crucial to the enhancement of *in-vitro* propagation of *Phalaenopsis*. The objective of the present research was to identify an effective in-vitro culture medium for the multiplication of *Phalaenopsis* cv. Pink lip via PLBs. Initially, PLBs (0.5 g) were transferred to selected three culture media, such as ½ MS, VW, and Hyponex media separately. Cultures were maintained for four months, and growth performance was evaluated. A significant difference in the mean fresh weight increment of PLBs grown in ½ MS, VW, and Hyponex media was observed after four months of incubation. The highest fresh weight increase of PLBs was observed in ½ MS medium compared to VW and Hyponex. After identifying that the ½ MS medium was highly supported for PLB multiplication, the ½ MS medium was modified by adding BAP (6-Benzylaminopurine) to enhance the rate of multiplication of PLBs. A series of ½ MS media supplemented with various concentrations of BAP [0 mg/L(control), 1.0mg/L, 2 mg/L, 3.0 mg/L, 4 mg/L, 5 mg/L, 6 mg/L, 7 mg/L], were prepared. PLBs (0.5g) were transferred to media series separately and were maintained for three months. The increase of fresh weight of PLBs was observed in all ½ MS media with different concentrations of BAP, compared to the control. The highest increment of fresh weight of PLBs was observed in ½ MS medium with 3.0 mg/L BAP. In conclusion, ½ MS with 3.0 mg/L BAP medium is the highly supported effective *in-vitro* culture medium for the multiplication of PLBs of *Phalaenopsis* cv. Pink lip.

***Keywords**: Phalaenopsis*, Protocorm Like Bodies (PLBs), In-vitro culture medium, Half-strength Murashige and Skoog (1/2 MS), BAP(6-Benzylaminopurine)