

A study on the use of organic additives on the protocorm-like bodies (PLBS) growth of *Phalaenopsis violacea* orchid

Abstract

The potential of different concentrations of various banana cultivars extracts, papaya extract, tomato extract and coconut water (0, 10, 20, 30%) to the control (without carbon source and plant growth regulator free medium) for reliable proliferation of *Phalaenopsis violacea* protocorm-like bodies (PLB) under in vitro condition. The results indicated that organic extracts were taken up from the media as shown by the increased in percentage of PLB proliferation rate. Maximum growth of PLB was obtained in half-strength Murashige and Skoog (MS) semi-solid medium supplemented with 10% of Mas (AA) banana pulp extract. However, it has been noticed that at a higher concentrations of organic extract tend to be inhibitory to the PLB proliferation which could be due to the osmotic stress. PLBs grown in half-strength MS supplemented with papaya extract had the lowest PLB proliferation rate among the different organic extracts. It can be concluded that, adding Mas (AA) banana pulp extract at concentration of 10% can be a potential replacement of sucrose in the media. Therefore, the short time length of in vitro culture and its high efficiency makes addition of suitable organic extracts well suited for mass propagation of *Phalaenopsis violacea* orchid.

Keyword: *Phalaenopsis violacea*; Organic extract; Protocorm like bodies; PLB