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In vitro Multiplication and Growth of Spathiphyllum cannifolium 1. Effect of Cytokinin Type and their Interaction with Auxins

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Objectives

Spathiphyllum (peace lily), which belongs to the family Araceae, is an important ornamental plant with steadily increasing interest. Despite the increasing commercial demand of Spathiphyllum, a few protocols for multiplication of S. floribundum are published. However, shoot multiplication and growth response differs among species. In order to meet the demand for commercial micropropagation, an efficient multiplication system is essential. Since plant hormones are a primary factor for in vitro multiplication, this study was conducted to evaluate the effects of different cytokinin/auxin grid in the search for an efficient procedure for shoot multiplication and growth of S. cannifolium.

Materials and Methods

Material: in vitro shoots (25±2mm, 17±2 mg)

Methods:

1. The sole effect of cytokinins on shoot multiplication and growth

MS media containing 2iP, BA, Kin and TDZ at different concentrations

2. The interaction effect with IBA and NAA

The favourable treatments for multiplication of each cytokinin was combined with auxin (IBA, NAA) at different concentrations in order to stimulate the multiplication rate and growth

Results and Discussion

1. The results indicated that BA was more effective than 2iP, Kin, TDZ regardless of its application as the sole growth regulator in the culture medium or in combination with IBA and NAA.
2. The optimal plant growth regulator for shoot multiplication was 3.0 mg/l BA and 1.0 mg/l IBA, in which a maximum average of 9.3 shoots per cultured explant was observed.
3. When cytokinins interacted with auxin (IBA, NAA), shoot multiplication and growth were promoted except of TDZ. Generally, IBA proved to be more effective than NAA.
4. TDZ was not favorable for shoot multiplication and growth in which malformed explants with poor multiplication were produced.

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