

## Investigation of Hinokitiol, PBA, ABA, NAA and TDZ Effects on *In-vitro* Regeneration of Alstroemeria by Using of Rhizome Explants

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### Abstract

Alstroemeria is one of the most popular and attractive cut flowers. Recently, its production has considerably increased in our country. Alstroemeria is generally reproduced by rhizome splitting. But the rate of reproduction is very low. This experiment was conducted in completely randomized design with 16 treatments and 5 replications in tissue culture and biotechnology laboratory of Mohaghegh Ardabili University in 2010. For this purpose, rhizome explants were cultured on MS medium supplemented by different concentrations of NAA, ABA, TDZ, PBA, Hinokitiol and control (MS medium without plant regulators). The results revealed that NAA at 4 mg l<sup>-1</sup> and Hinokitiol at 1 mg l<sup>-1</sup> produced the highest rhizome number compared to control. In this experiment, prepared medium containing Hinokitiol at 10 mg l<sup>-1</sup> and PBA at 1 and 4 μM did not produce any rhizome. MS media with Hinokitiol at 1 mg l<sup>-1</sup> produced the highest rhizome length (3.58 cm) compared to control and other treatments. The highest (8.99) and lowest (0.56) leaf numbers were produced by media containing TDZ at 2 μM and NAA at 4 mg l<sup>-1</sup> respectively. However, the highest and lowest leaf losses were observed by Hinokitiol in media containing 1 mg l<sup>-1</sup> and NAA at 1 mg l<sup>-1</sup> respectively. No significant differences were found in case of stem and root length and number.

**Keywords:** *Thidiazuron (TDZ), Paclobutrazol (PBA), Abscisic Acid (ABA), Hinokitiol, Naphtaline Acetic Acid (NAA), Regeneration, Alstroemeria,*