

M. J. Hutchinson, R. Onamu, L. Kipkosgei and S.D. Obukosia. 2010. Effect of Thidiazuron, NAA and BAP on in vitro propagation of *Alstroemeria aurantiaca* cv. 'Rosita' from shoot tip explants. JAGST 12 (2): 60-69.

ABSTRACT

The objective of the study was to evaluate the potency of Thidiazuron (TDZ) as a plant growth regulator when compared to combined auxin (NAA) and cytokinin (BAP) in evoking morphogenic responses from *Alstroemeria aurantiaca* cv. 'Rosita' shoot tip explants. Shoot tips cultured on basal medium devoid of any plant growth regulators (PGRs) only increased slightly in length and formed only one leaf per shoot during the culture period. The addition of various PGRs to the induction or culture medium significantly influenced the number and length of shoots formed as well as the number of leaves formed. While low concentrations of TDZ (0.1 µM) had no significant effect and high concentrations (5.0 µM) were inhibitory, medium concentrations (0.4-1.0 µM) significantly increased the number and length of shoots as well as the number of leaves formed from the explants. The longest shoots were formed from explants cultured in media supplemented with 1.0 µM TDZ. Slightly better but comparable responses were observed from explants cultured on media supplemented with 1.0 mg/L BAP and low concentrations (0.01 mg/L) of NAA. The explants cultured in 1.0 mg/L BAP+0.01 mg/L NAA formed the greatest number of shoots while those cultured in 1.0 µM TDZ formed the greatest number of leaves per explants. Increasing the NAA concentration to 0.1 mg/L and combining this with either 1.0 mg/L BAP or 1.0 µM TDZ depressed shoot formation and shoot length. In conclusion, TDZ at concentrations between 0.4 and 1.0 µM were just as effective as combined auxin (NAA) and cytokinin (BAP) in evoking morphogenic responses from *Alstroemeria aurantiaca* cv. 'Rosita' shoot tip explants.