

EXAMINING SYNERGISTIC EFFECTS OF TDZ AND TIBA ON ADVENTITIOUS SHOOT INDUCTION IN *DIANTHUS CARYOPHYLLUS* L. LEAF EXPLANTS

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ABSTRACT

The aim of the present investigation was to study the combined effect of cytokinin thidiazuron (TDZ) and auxin-transport inhibitor 2,3,5-triiodobenzoic acid (TIBA) on adventitious shoot induction in leaf explants of carnation (*Dianthus caryophyllus*) cultivar 'Master'. In this study, various concentrations and combinations of TDZ and TIBA were used for induction of adventitious shoots in leaf explants. The explants showed adventitious shoot regeneration (12.33%) on modified Murashige and Skoog's (MS) medium supplemented with 1.0 mg/l TDZ and 1.0 mg/l TIBA while highest frequency of shoot regeneration was observed on MS medium supplemented with 1.0 mg/l TDZ and 0.5 mg/l TIBA (18.33%). Increase in shoot number as well as shoot length was observed with progressive subculturing of shoots. Subculturing of adventitious shoots gave highest average number of shoots (10.22). Shoots were subsequently rooted on MS medium devoid of any phytohormones, supplemented with activated charcoal and rooted plantlets were successfully acclimatized. The combined effects of cytokinin TDZ and auxin transport inhibitor TIBA were found to promote shoot multiplication *in vitro* and prolonged exposure of shoot cultures to TIBA was not found detrimental to shoot growth and multiplication.

KEYWORDS: Carnation, Adventitious Shoots, TDZ, TIBA