

ABSTRACT

Amaryllis (*Crinum asiaticum*) has a prominent place among ornamental bulbous species, which are quite valuable in the floriculture economy. Constant culture is required; to meet the year-round market demand for amaryllis, hence, an effective micro propagation technique is required. Twin scales were used as explants to establish optimization and *in vitro* propagation for amaryllis (*Crinum asiaticum* cv. Giant *crinum* or lily). The twin scaling method was used to achieve the maximum number of explants (45–50) from a single bulb in the shortest period. Explants were surface sterilized with 30% bleach solution for 10 minutes and 70 % ethanol for 45 seconds and thoroughly rinsed with autoclaved distilled water. Twin scales were surface sterilized with 70% ethanol for 5 seconds and 10 % sodium hypochlorite solution for 2 minutes and rinsed with sterilized distilled water. These twin scales were cultured on MS medium fortified with different concentrations of plant growth regulators. Cultures were incubated under optimal conditions of $25 \pm 2^\circ\text{C}$ temperature, 2800 lux illumination and 16/8 h light and dark period respectively. Growth of *Crinum asiaticum* was observed under different concentration of PGRs individually and in combinations i.e., 2, 4-D, BAP, NAA TDZ, IBA and KIN. The successful growth was noticed in the combinations of 0.4 mg L^{-1} BAP + 0.1 mg L^{-1} 2, 4-D, 2.0 mg L^{-1} BAP + 0.5 mg L^{-1} NAA, $5.0 \text{ TDZ} + 0.3 \text{ IAA}$, 3.0 mgL^{-1} KIN + 0.8 mgL^{-1} IAA, 1.0 mgL^{-1} KIN + 4.0 mg L^{-1} NAA and under 6.0 mgL^{-1} BAP + 0.5 mg L^{-1} IBA as far as the shoot induction is concerned, but the best shoot induction was observed in 0.4 mg/l BAP with 0.1 mg/l 2, 4-D. The best root growth was observed under 0.4 mg/l BAP with 0.2 mg/l 2, 4-D. Viable plantlets were transferred to pots after 2 months of culture. In 4-5 months. Plantlets has grown to the size of a matured *crinum asiaticum*. Bulb had a 98% survivability.