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Plant regeneration from cotyledonary nodal explants of tomato (*Lycopersicon esculentum* Mill.) cultivar KC-1

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This experiment was carried to study the *in vitro* shoot response of cotyledonary nodal explants derived from 12 days old *in vitro* grown seedlings of tomato cultivar KC-1. A centimeter long cotyledonary nodal explants were excised carefully from *in vitro* raised seedlings and cultured on MS media with 0.5-1.0 mg/l kinetin and 1.0-0.5 mg/l IAA or with 0.2-1.0 mg/l BAP and 1.0-0.2 mg/l NAA. After 4 weeks of culture, they were sub-cultured on MS medium containing 2.0 mg/l BAP and 0.2 mg/l NAA. The results revealed that the morphogenetic response percentage of the cultured explants on the different media ranged from 62.5% to 79.2%. Microshoots initiated after 10 days of culture showed significant variation ($P<0.001$) on number of microshoots per explant at 4th week of culture. Maximum number (3.0) of microshoots per explant was obtained directly from the explants when BAP (1.0 mg/l) was used in combination with NAA (0.2 mg/l). Root initiation from the explants was noted after 14 days of inoculation. Hairy roots were also formed on the explants cultured in all culture media but MS medium supplemented with 0.5 mg/l kinetin and 1.0 mg/l IAA gave higher number of hairy roots. MS medium supplemented with 1.0 mg/l BAP and 0.2 mg/l NAA exhibited better *in vitro* shoot initiation over MS medium containing kinetin and IAA. After 4 weeks of culture, microshoots were transferred to 2.0 mg/l BAP and 0.2 mg/l NAA medium for shoot elongation and root formation. Developed plantlets were then acclimatized after 8 weeks of culture. It could be concluded that BAP and NAA combination was best for clonal propagation directly from cotyledonary nodal explants of tomato cultivar KC-1.

Keywords: BAP, microshoots, NAA, nodal explants, tomato cultivar KC-1

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