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Effect of Thidiazuron on Shoot Regeneration from Different Explants of Lentil (*Lens culinaris* Medik.) via Organogenesis

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Abstract: Thidiazuron (TDZ) is among the most active cytokinin like substances and induces greater in vitro shoot proliferation than many other cytokinins in many plant species. Leaf, stem, stem node and cotyledonary node explants of 2 extensively cultivated Turkish lentil cultivars, Ali Dayı and Kayı 91, were cultured on Murashige and Skoog (MS) media supplemented with various concentrations of TDZ. The present study was conducted to develop a rapid and efficient shoot regeneration system suitable for the transformation of lentil (*Lens culinaris* Medik.) using TDZ. Cotyledonary nodes and stem nodes after the initial callus stage regenerated prolific adventitious shoots via organogenesis. Shoot or callus formation was not achieved from leaf or stem explants. DMSO as a solvent for TDZ was necrotic on plant tissues and therefore TDZ was dissolved in 50% ethanol to carry out the studies. Cotyledonary nodes showed a higher shoot formation capacity than stem nodes. MS medium supplemented with 0.25 mg/l TDZ produced the highest frequency of shoot formation from cotyledonary nodes in both genotypes. Regenerated shoots (10-20 mm long) rooted in MS medium containing 0.25 mg/l indole-3-butyric acid (IBA). Rooted plantlets were finally transferred to sand in pots. Abbreviations: TDZ - thidiazuron [1 Phenyl 3-(1,2,3-thiadiazol-5YL) urea], IBA - indole-3-butyric acid, MS - Murashige and Skoog, DMSO - dimethylsulphoxide

Key Words: Thidiazuron, in vitro, shoot regeneration, cotyledonary node

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