THE DEVELOPMENT OF IN VITRO REGENERATION SYSTEM FOR GENE TRANSFOMATION IN PEANURS

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TÓM TẮT:

Plant regeneration is considered as a critical stage wich determines the success in plant tissue culture and gene transformation in plants. In this paper, we present the results using the peanut cultivar L26 for developing an in vitro regeneration system for transformation. Peanut regeneration system was studied on different materials: cotyledonary nodes, callus and somatic embryos. Among them, multiple shoots generated by injuring the cotyledonary nodes after 7 days of germination were grown on the SIM medium supplemented with 5.0 mg/l of BAP and 0.5 mg/l of NAA for 8 weeks. The rate of shoot induction reached 69% and the average number of shoots per cotyledonary explant was 5.67. The MS medium supplemented with BAP (2 mg/l) was suitable for the formation of callus of L26 and these calluses could regenerate into shoots in MS medium supplemented with BAP (0.3 mg/l) with the rate of regeneration ranged from1.3 to 1.9 shoots per callus. The embryos of L26 grown on MS medium supplemented with 2,4-D at a concentration of 20 mg/l could produce 14.3 somatic embryos per explant, regeneration rate was 34.7 %. Shoot length was enhanced when regenerated shoots were cultured on the medium containing BAP and NAA. After 2 weeks, the average length of shoots increased from 2.1 to 2.5 cm. An appropriate medium for the was supplemented with NAA (0.3 mg/l). These results encourage research on development of transgenic technique in peanuts .