

Bayraktaroglu M, Dagustu N (2011) Influences of genotype and explant on callus induction and shoot regeneration in sunflower (*Helianthus annuus* L.). Journal of Agricultural Science and Technology, 5(2):226-231.

Abstract

In vitro regeneration was performed with the aim of developing efficient callus and shoot regeneration from different explants of sunflower (*Helianthus annuus* L.). The 6 genotypes (RHA10, RHA 14, RHA15, PR6404, N Record 109/ Sanay 3-5, N Record 109/ Sera) were used as plant materials. The roots, hypocotyls and cotyledons were excised from 4 day-old seedlings and cultured on embryo induction medium (EIM) supplemented with Benzylaminopurine (BAP), Naphthaleneacetic acid (NAA) and Gibberellic acid (GA₃). The experiments were kept in 18/6 hour light/dark photoperiod at 26± 2 °C for four weeks. The rates of callus and root organ formation on explant were 67-100% and 7-31% respectively, depending on the genotype. Root explants produced statistically high callus formation (2.61a) compared to cotyledon (1.94b) and hypocotyl explants (2.48ab) at all sunflower genotypes used. The highest shoot regeneration was obtained from RHA15 (7%) while PR6404 (100%) produced the highest callus formation.