Abstract

Induction of callus from explants is a critical process in regeneration, micropropagation and transformation of plants. Formation of callus from plant tissues on culture is affected by different factors. This study sought to establish the effect of genotype, source of explants and auxin concentration on callus induction from different Sudanese maize genotypes (222F, Hudiba-1, 441, Giza-2, PR5655 and Mojtamma-45). Callus induction of the six maize varieties was investigated using mature embryos, leaf disks and shoot tips as explants and different concentrations of the auxin; 2,4-dichlorophenoxyacetic acid (2,4-D), ranging from 0 to 10 mg L-1. The highest callus, induction frequency was observed in shoot tips while the lowest was observed in mature embryos. Leaf disks gave a higher callus induction frequency than mature embryos and lower than shoot tips. Concentrations of 2,4-D of 2 mg L-1 gave the highest callus induction for most genotypes while 0 and 10 mg L-1 gave the lowest callus induction for all the genotypes.