Effects of plant growth regulators on plant regeneration through somatic embryogenesis of Medicago sativa L

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Abstract

An efficient plant regeneration system of alfalfa (Medicago sativa L.) via somatic embryogenesis was established. Embryogenic callus was obtained by culture of hypocotyl segments on MS medium with 0.01 mg 1-1 IAA and 1.0 mg 1-1 zeatin after 45 days of culture. They were converted to the somatic embryo when embryogenic calli were transferred to MS medium without hormone and MS medium containing various cytokinin (BA, kinetin and zeatin). Most of somatic embryos developed into plantlet, especially, normal plantlets were developed on MS medium supplemented with 0.1 mg 1-1 kinetin. Also secondary embryos were appeared on surface of primary embryo but they were showed abnormal growth. Adequate concentration of kanamycin for selection was 100 mg 1-1. Regenerated plantlets were transplanted to pot containing vermiculite and perlite for the further anaylsis.

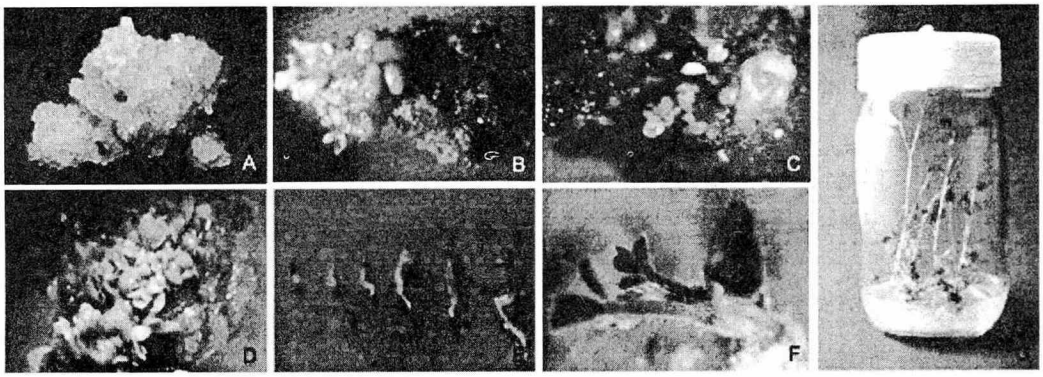

Figure 1. Plant regeneration through somatic embryogenesis in tissue culture of alfalfa (Medicago sativa). A: Embryogenic callus (EC) formation on MS medium with 0.01 mg 1-1 IAA and 1.0 mg 1-1 zeatin; B: Somatic embryo of various shape produced from EC; C: Secondary embryos (SE) formed on surface of primary somatic embryo; D: Multiple SE with fused cotyledon; E: Developmental stage of somatic embryo; F: Direct shoot formed on edge of explant; G: Normal plantlet prior to acclimatization on pot.