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Induction of Callus and Somatic Embryogenesis from Seeds of Taraxacum Kok-Saghyz Rodin

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Abstract : The effects of varying concentrations of growth regulators including 2, 4-D (2,4-Dichlorophenoxyacetic acid), BAP (6-benzylaminopurine), IAA (indole-3-acetic acid) and Kin (kinetin) was investigated for primary callus induction, embryogenic callus formation and regeneration of two elite Taraxacum kok-saghyz (TKS) lines, TKS1 and TKS2. Mature seeds were used as explants for primary callus induction. Different concentrations of 2, 4-D were investigated to study its effect on callus induction and callus growth frequency (CGF). Compact, whitish, healthy and fluffy calli were induced in TKS1 and TKS2 in MS medium supplemented with 5 mg/l and 4 mg/l 2, 4-D respectively. The calli produced were subjected to somatic embryogenesis and regeneration studies. For this purpose, MS Medium was supplemented with different concentrations and combinations of plant growth regulators like IAA and BAP. Maximum embryogenic callus formation was observed in MS medium supplemented with 0.1 mg/l IAA in combination with 1.5 mg/l BAP and it resulted in 73.51% and 62.33% embryogenic callus formation in TKS1 and TKS2 respectively. These optimum concentrations of IAA and BAP were further experimented with different concentrations of Kin for efficient regeneration and it was observed that 1 mg/l Kin was optimum for this purpose. Such studies help in understanding the response of TKS to tissue culture conditions and ultimately promise in improving yield by employing various biotechnological techniques.

Keywords : taraxacum kok-saghyz Rodin, callus, somatic embryogenesis
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