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RESEARCH PAPER

Optimising protocol for direct differentiation of shoot buds from leaf *ex-plant* of *Tagetes erecta* L. var. Pusa Narangi Gainda

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Abstract : Marigold is an important loose flower crop has gained popularity for its pharmaceutical, industrial, medicinal and therapeutic importance. In this present study, we developed a protocol for direct regeneration using *in-vitro* raised immature leaves of African marigold (*Tagetes erecta* L.var. "Pusa Narangi Gainda"). A total of eight treatment combinations of growth hormones such as BAP, IAA and GA_3 with MS as a basal media was studied. The best medium found for direct, shoot organogenesis from leaf *ex-plant* was treatment (T_3) - MS + BAP 0.5 mg/l + IAA 0.25 mg/l. Pre-treatment with Carbendazim (0.2 %) + Mancozeb (0.2 %) + 8-HQC (200 mg/l) for 2hr followed by $HgCl_2$ for 4 min. resulted in minimum fungal (24.33%), bacterial (8.33%) contamination simultaneously it increased the survival percentage upto (67.33%). This study is helpful for rapid clonal propagation, production of lutein-rich pharmaceutical compounds and secondary metabolites using tissue culture techniques.

Key Words : African marigold, Shoot organogenesis, Leaf *ex-plant*, Growth hormones, Clonal propagation

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