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Direct Organogenesis of Begonia Rex cv. DS-EYWA, An Unique Rare Cultivar, via Thin Cell Layering (TCL) Technique

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Abstract : Begonia rex cv. DS-EYWA is a rare, unique cultivar of begonia rex with curly colorful leaves. Optimization of an in vitro efficient regeneration protocol by focusing on transverse Thin Cell Layer (tTCL) petiole explants for high-scale production of such a beautiful cultivar was considered as our main purpose in this experiment. Thus, various concentrations of Plant Growth Regulators (PGRs) including 6-Benzylaminopurine (BAP), Thidiazuron (TDY), and –Naphthaleneacetic Acid (NAA), were selected in a Completely Randomized Design (CRD) to establish and optimize the direct organogenesis efficiency of this cultivar. Cultivation of 1 mm tTCL petiole explants in noted treatments showed that 1.5 mgl-1 BAP + 0.5 mgl-1 NAA can induce the highest number of direct regenerated shoots and lower concentration of BAP (0.5 mgl-1) can be suggested for shoot elongation before rooting stage. Elongated shoots were successfully rooted in MS free basal medium and acclimatized in 1:1 peat moss: perlite sterilized pot mixture.

Keywords : begonia rare cultivar, direct organogenesis, explant type, regeneration, thin cell layering (TCL)
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