

Effects of 2, 4-Dichlorophenoxyacetic Acid and -6 Benzylaminopurine on Callus Induction of *Talinum paniculatum*

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ABSTRACT

Talinum paniculatum is an edible plant with enormous medicinal properties. Unfortunately, till date there is no preservation step taken to prevent this plant from facing extinction. Hence, the main focus of this study was on callus induction due to the natural ability of callus that can regenerate into a new plant. This study was carried out to evaluate the effects of 2,4-Dichlorophenoxyacetic Acid (2,4-D) and 6-benzylaminopurine (BAP) on callus induction of *T. paniculatum*. Leaf, node and root explants of *T. paniculatum* were cultured on Murashige & Skoog media containing 2,4-D at concentrations of 1.0, 2.0, 3.0, 4.0 and 5.0 mg/L and BAP at concentration of 0.5, 1.0, 1.5, 2.0 and 2.5 mg/L under single exposure or combined exposure. Explants cultured on medium containing no PGRs served as control in this experiment. The effectiveness of PGRs and types of explants on callus induction of *T. paniculatum* was determined by recording the callus induction day, percentage of callus induced in all the treatments, morphology of the callus induced and finally types of explants that have induced callus. Explants treated with 2,4-D and BAP in combination resulted in callus induction. Highest percentage of callus from leaf explants was produced on the medium containing 2.0 mg/L of 2,4-D and 2.5 mg/L of BAP in combination whereas combination of 1.0 mg/L of 2,4-D and 1.0 mg/L of BAP resulted in highest formation of nodal segments derived callus. Root explants treated with both types of PGRs in combination and singly did not result in any emergence of callus. Medium containing 5 mg/L of 2,4-D which was the highest concentration of 2,4-D used in this experiment, resulted in reduced formation of callus. Callus induced from leaf explants were higher compared to callus induced from nodal explants. In conclusion, medium containing both the PGRs with concentration of 2,4-D ranging from 0.5 mg/L to 3.0 mg/L were considered the ideal medium for callus induction.