

Effect of genotypes on micropropagation of *Terminalia arjuna* – an important medicinal tree

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Abstract: *Terminalia arjuna* is an important tree of medicinal and sericulture industry, commonly known as Arjun. It's bark rich in secondary metabolites makes this plant highly valuable in medicine industry to treat cardiovascular disease. It is also used as feeder plant for tasar silkworm (*Antheraea mylitta*). Over exploitation due to high demand in medicine, low seed germination, limitations of conventional method of propagation push this plant towards being endangered. To conserve germplasm of such tree species and meet the requirement in medicinal industry, some non-conventional propagation method like micropropagation have been developed. The present work highlighted the effect of genotypes on tissue culture of *T. arjuna*. For this objective, nodal explants were collected from three genotypes (G-1, G-2 and G-3) of *T. arjuna* situated at Jodhpur, Rajasthan, India. *In vitro* shoot proliferation was achieved on modified MS medium enriched with BAP + additives. Genotype -1 showed maximum bud break response (100%) followed by G-3 (93.33 %) and G-2 (86.66%). Further multiplication of these shoots on modified MS medium containing BAP + NAA + additives gave 11.38±0.26 (G-1), 9.44±0.21 (G-2) and 10.22±0.32 (G-3) shoots. *In vitro* rooting was done by pulse treatment with IBA for 10 min prior to transfer on hormone free half strength MS medium containing 0.1% activated charcoal. Maximum *in vitro* rooting was obtained in G-1 (80%) followed by G-3 (71.11%) and G-2 (68.88%). In present study it was observed that optimum growth in all three genotypes require different dose of Plant Growth Regulator. Thus, by identifying and multiplying the best performing genotypes the gap between demand and supply of such medicinal plant can be fulfilled.

Keywords: tissue culture; modified MS medium; Plant Growth Regulator