



RESEARCH PAPER

Effect of media concentration and growth hormones on shoot regeneration and *in vitro* rooting of sugarcane varieties (*Saccharum* spp.)

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Abstract : The protocol for plantlet induction and regeneration through *in vitro* culture was standardized for the sugarcane variety Co 06022 with Co 86032. Genotype specific media combinations for establishment and rooting efficiency was identified and standardized. Multiple shoot regeneration was observed at different frequencies, using different concentration and growth regulator combination. *In vitro* propagation of *Saccharum* offers opportunities for increasing plant material for cultivation. Apical meristems were cultured on modified MS medium containing different concentrations of auxins. In Co 06022, the most effective concentration was combination of ½ MS medium supplemented with IBA (2.0 mg/l) which induced an average of 3.00±0.14 number of shoots per microshoot with 10.77±0.42 cm shoot length. Among the auxins used, NAA showed better response than IBA for profuse rooting in Co 06022. The number of roots formed was maximum (14.80±0.09) in MS with NAA (2mg/l) which had taken 10 days for root initiation with the root length of 6.45±0.07 cm. However, in Co 86032, the best performance was observed on ½ MS medium supplemented with IBA (2.0 mg/l) with more number of shoots (2.00 ± 0.19) and average shoot length of 12.30±0.44 cm. Best rooting was observed in ½ MS medium supplemented with NAA (2.0 mg/l) and maximum number of roots were 11.60±0.12 which has taken 8 days for initiation of root primordia with average root length of 1.16±0.12 cm. Thus, it can be deduced that this protocol can be used successfully for *in vitro* rooting and acclimatization of these genotypes.

Key Words : Sugarcane, Micropropagation, Shoot induction, Root induction

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