

Ex-vitro ROOTING PROTOCOL FOR MICRO-SHOOTS OF TEA (*Camellia sinensis* L.)

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In Sri Lanka successful *in-vitro* rooting has been reported for Tea (*Camellia sinensis* L.), but there is no reported protocol to establish *ex-vitro* rooting in Tea. To establish an efficient *ex-vitro* rooting protocol of Tea plantlets, the strength of MS (Murashige and Skoog) basal medium for *in-vitro* shoot multiplication, and the effect of type of auxin for *ex-vitro* rooting of Tea were determined. Shoot multiplication using seedlings was achieved by two methods of subculture, full strength MS shoot multiplication medium containing BAP at 3 mg/l and IBA at 0.5 mg/l and half strength MS shoot multiplication medium without growth regulator. Micro-shoots were treated by using a 'pulse treatment' dipping either in 50 mg/l of NAA solution or 50 mg/l of IBA, for three hours. Then shoots were transferred to *ex-vitro* rooting substrate (growing media) and plantlets were acclimatized simultaneously in the greenhouse. There were no significant differences observed in treated and untreated in relation to their root length and number of roots per micro-shoots. The most effective *ex-vitro* rooting response observed when shoots were sub cultured on full strength MS medium with growth regulators. However, root parameters tested were optimum in the control. Therefore, direct transferring of micro-shoots from standard MS medium without any auxin treatment to the *ex-vitro* rooting substrate is sufficient to enhance rooting in Tea micro-propagation. This would save time and other resources involved in Tea micro-propagation. Moreover, by following the *ex-vitro* rooting protocol, acclimatization and rooting can be achieved simultaneously thereby reducing the time taken for producing tissue cultured plantlets. Hence, present study enables to establish effective and economical rooting protocol for Tea micro-propagation.

Key words: Tea (*Camellia sinensis*), Micro-propagation, Micro-shoots, *Ex-vitro*, *In-vitro*