

In vitro root regeneration from *Eucalyptus camaldulensis* Dehnh. Shoots

ABSTRACT

Multiple shoot regeneration was conducted to produce healthy shoots for mass propagation of superior genotypes of *Eucalyptus camaldulensis*. Sources of explants were selected based on good growth and selected fiber morphological characteristics. Healthy shootlets were further allowed to elongate on half strength of Murashige and Skoog (MS) medium supplemented with 1.0 mg L^{-1} 6-Benzylaminopurine (BAP) for four weeks before root induction. In vitro rooting of these elongated shootlets were assessed using half strength of MS medium supplemented with eight concentrations viz 0, 0.1, 0.5, 1.0, 1.5, 2.0, 2.5 and 3.0 mg L^{-1} of either α - Naphthalene Acetic Acid (NAA) or Indole Butyric Acid (IBA) i.e, 0, 0.1, 0.5, 1.0, 1.5, 2.0, 2.5 and 3.0 mg L^{-1} . Generally rooting ability showed better performance in all concentrations on medium supplemented with NAA than the ones with IBA. Those shootlets induced on 1.0 and 1.5 mg L^{-1} showed prolific root growth. The highest rooting percentage of 90% was obtained in shootlets induced on medium supplemented with 1.0 mgL^{-1} of NAA but the highest mean root number of 9.00 and the longest mean root length of 2.63 cm were recorded on those supplemented with 1.5 mgL^{-1} of NAA. Healthy rooted plantlets were then acclimatized into polybags containing peat soil covered in plastic sheet and left under shade for one week before being finally transferred into growth medium containing 1:1:1 sand, top soil and coco peat. 70% of survival percentage was recorded 4 weeks after being raised under nursery condition. Thus inclusion of IBA and NAA are necessary for root induction of in vitro micropropagated shootlets to become complete plantlets.

Keyword: Multiple shoot regeneration; *Eucalyptus camaldulensis*; Vitro rooting