

In Vitro micropropagation of *Acacia auriculiformis* from selected juvenile sources

ABSTRACT

The effects of 6- Benzylaminopurine (BA), different basal medium, sucrose concentration and gelling agent were investigated for shoot induction and multiplication of *Acacia auriculiformis*. Nodal explants derived from 5-month-old seedlings yielded the highest shoot multiplication rate in Murashige and Skoog medium (MS) with 0.44 μM BA, 30 g/L sucrose and 2 g/L Gelrite. The highest mean number of shoots (10) and mean length of shoots (5.07mm) were also obtained in this medium. Qualitative observation of the shoots cultured in 0.44 μM BA were greener and vigorous in growth as compared to shoots cultured on higher concentrations of BA (22.2 μM). MS medium produced a significantly higher number of shoots (18) compared to Woody Plant Medium (WPM) (11) and B5 medium (10). Media solidified with different gelling agents also produced a significantly different number of shoots with 2 g/L Gelrite produced the highest number of shoots (23). The highest percentage of shoots rooted was found in the MS medium without any growth regulators (40.0%) followed by medium supplemented with Indole-3-butyric acid (IBA) at 9.84 μM and the combination of 9.84 μM IBA with 5.37 μM α -naphthalene acetic acid (NAA) (33.3%). MS medium without any plant growth regulators produced the highest mean root length (84.33mm), whereas medium supplemented with 9.84 μM IBA produced the highest mean number of roots per shoot (4.33). Out planting of in vitro rooted shoots in shredded coconut husk as the substrate gave the highest percentage of survival (90%) during acclimatization in the greenhouse.

Keyword: Basal medium; 6-Benzylaminopurine; Sucrose; Gelling agent; Micropropagation; *Acacia auriculiformis*