

in vitro Aseptic Culture Establishment of Sugarcane (*Saccharum officinarum* L.) Varieties Using Shoot Tip Explants

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Abstract :

Two sugarcane varieties namely, 'B41-227' and 'N14' were tested for *in vitro* culture establishment response under five levels of BAP (0, 1, 2, 3 and 4 mgL⁻¹) and kinetin (0, 0.5, 1, 1.5 and 2 mgL⁻¹) in a completely randomized design with 2*5*5 factorial treatment combinations. The objective was to determine the optimum concentration and combination of BAP and kinetin for *in vitro* culture establishment of shoot tip explants. Among the different concentrations and combinations of BAP and kinetin tested, Murashige and Skoog (MS) medium supplemented with 3 mgL⁻¹ BAP without kinetin for B41-227; and 3 mgL⁻¹ BAP along with 1.5 mgL⁻¹ kinetin for N14 exhibited a better response than the other concentrations in percent initiated shoot tip explants, percent of dead or not responding cultures, number of shoots per explant and average shoot length of the sugarcane varieties. These media established 93.33% of shoot tip explants with 4.5 ± 0.11 shoots per explant and 3.15 ± 0.28 cm shoot length in B41-227; and initiated 76.67% shoot tip explants with 3.3 ± 0.00 shoots per explant and 4.58 ± 0.28 cm shoot length in N14 after 30 days of culture

Key Word :

Conventional propagation; *In vitro* shoot tip explant establishment; Sugarcane; BAP and kinetin

Volume 2, Number 3, August 2014, ISSN ISSN: 2329-8863