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Protocol optimization for micro propagation of banana varieties (Musa spp.) using shoottip culture

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Conventional vegetative propagation of banana generally has low production; transmission of diseases and poor preservation of original plant genetic material. Micro propagation is currently the only practical means of achieving rapid, large-scale production of disease-free quality planting material. The present study was conducted with the objective to optimize quick and reproducible *in vitro* micro propagation protocol for three banana varieties (Grandnaine, Poyo and Butuza) grown in Oromia. Experiments on shoot tip culture initiation, shoot multiplication and *in vitro* rooting were laid out in Completely Randomized Design with 3x2x2, 5x4x3 and 4x3 factorial treatment arrangements respectively. Data were subjected to analysis of variance and significant means were separated using Duncan's Multiple Range Tests. With regard to shoot multiplication, Grandnaine showed a maximum of 12.67shoots per explant with 2.17cm shoot length on a medium fortified with 3.5mg/l BAP alone, while Poyo produced a maximum of 13.00 shoots per explant with 2.15cm mean shoot length on a medium supplied with

3.0 mg/IBAP and 0.2mg/l IBA. Likewise, Butuza produced maximum of 11.33 shoots per explant with mean shoot length 2.9 cm on medium fortified with 4.0 mg/l BAP + 0.3 mg/l IBA. Half MS semi solid medium containing 1.0 mg/l IBA induced the highest rooting with 8 mean root number per shoot for Grandnaine. For Poyo, half MS medium supplemented with 1.5mg/l IBA induced the highest rooting response with mean root number per shoot of 7.6. Similarly, half MS medium supplemented with 2.0 mg/l IBA induced highest rooting response with 8 mean root number per shoot. In conclusion, this study can be used for rapid and mass *in vitro* propagation of these three elite banana varieties. Keywords: - Micro propagation, Banana Varieties, 6-Benzylaminopurine, acid, Indole butyric acid.

Biography

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