

Regeneration of the East African greenheart,  
*Warburgia ugandensis* (Sprague) ssp. *ugandensis*  
through tissue culture

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## ABSTRACT

A procedure for the regeneration of *Warburgia ugandensis* (Sprague) ssp. *ugandensis*, Canellaceae plant species was accomplished by of shoot tip cultures obtained from young seedlings glasshouse planting stock materials. The explants were aseptically inserted into full strength Murashige and Skoog medium after surface sterilization. MS medium containing 3 % sucrose and supplemented with 1.13 mg<sup>l</sup><sup>-1</sup> BAP combined with 0.11 mg<sup>l</sup><sup>-1</sup> KIN was the best for both shoot regeneration. This resulted in shoots with an average shoot length of 3.04 cm and 4 shoots produced per explant. Of the three auxins tested, NAA was the most effective for both *in vitro* and *ex vitro* rooting. Half strength Woody Plant medium supplemented with 1 mg<sup>l</sup><sup>-1</sup> NAA resulted in the highest rooting percentage of 50 % under *in vitro* conditions. 0.4 mg NAA dissolved in 20 µl ethanol induced *ex vitro* rooting 28 days after inserting the shoots into the rooting media. All the plantlets that rooted *ex vitro* successfully established in the forest soil substrate in the glasshouse. The *in vitro* regenerated plantlets were acclimatized before taking them to the glasshouse for establishment *in vivo*. Multiple shoot were also regenerated through somatic organogenesis from the leaf cultures on half strength Linsmaeir and Skoog medium supplemented with TDZ at various concentrations. The best concentration for shoot regeneration was found to be 0.5 mg<sup>l</sup><sup>-1</sup> TDZ that resulted in 72.22 % of explants formed callus tissues and 7.4 mean number shoots regenerated per leaf explant.

**Key Words:** *Ex vitro*, *in vitro*, organogenesis, regeneration, rooting, *Warburgia ugandensis*.