



Vegetative propagation of *Xylopia parviflora*, a wild medicinal spice tree species in the tropics: insights for domestication

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ABSTRACT

Objective: *Xylopia parviflora* (A. Rich.) Benth. (commonly known as “striped African pepper”) is one of the most socio-economically high-valued tree species of the Central and Western African humid forests. Its propagation is hindered by poor seed germination. The present study aimed at examining its potential for vegetative propagation through the rooting of stem cuttings.

Methodology and Results: In a split-plot experimental design, three leaf areas (0, 15 and 30 cm²) and six concentrations [(0, 0.25, 0.5, 1, 2 and 4% (w/w)] of indole-3-butyric acid (IBA) were tested for their effects on stem cutting parameters after five months in a non-mist propagator. Maximum rooting percentage (100%) was recorded with 15 cm² x 4% IBA, 30 cm² x 2% IBA and 30 cm² x 4% IBA treatment combinations. The highest mean root count (9.1) was recorded with 30 cm² x 4% IBA. The mortality rate of cutting was significantly affected by leaf area only. Leafless cuttings (0 cm²) resulted in 73.5% mortality, which was higher than 11.8% and 10.7% recorded with cuttings having 15 and 30 cm² leaf areas respectively.

Conclusion and application of findings: *X. parviflora* is amenable to vegetative propagation through rooting of leafy stem cutting within five months. For an efficient propagation of *X. parviflora* through stem cuttings, the use of cuttings with 30 cm² leaf area and application of 4% (w/w) IBA are recommended. This is valuable insight into the domestication and *in situ* conservation of this species that is of direct relevance to the well-being of millions of people in sub-Saharan Africa. Propagation of *X. parviflora* using robust and low-cost procedure as described in this study would stand as an alternative to the sexual propagation which is hindered by poor seed germination.

Keywords: auxin, leaf area, rooting, stem cuttings, striped African pepper.