

MICROPROPAGATION AND FLOWERING OF *GLORIOSA ROTHSCILDIANA* O'BRIEN WITH EFFICIENT THERMAL TREATMENT OF MICROTUBERS

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Abstract

Procedures for the micropropagation and further *in vivo* cultivation of *Gloriosa rothschildiana* microtubers were established. Meristem and young shoot basal explants of *G. rothschildiana* were cultured on MS medium supplemented with 4.0 mg l⁻¹ BA and 0.1 mg l⁻¹ NAA, which resulted in the production of 5.0 and 47.2 mean numbers of shoots per explant, respectively, after 150 days of culture. Twice to 3 times of shoot multiplication was successfully achieved by subculturing the shoots onto the same medium. Increasing subculture duration on the same medium stimulated microtuber formation at the bottom of most shoots. Approximately 85% of the microtubers produced with a weight over 1 g sprouted successfully in *in vivo* conditions by the thermal treatment of 8°C for 2 weeks, followed by 30°C for 13 weeks. Sprouted tubers planted in soil grew normally and 80% of the tubers with weight over 5 g collected after 2 cycles of cultivation successfully produced flowers. No noticeable change was observed in the morphology including flower characters of the micropropagated plants.

Key words: acclimatization, *Gloriosa rothschildiana*, micropropagation, microtuber, ornamental flower, thermal treatment

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