

Thidiazuron's Role in *Murraya paniculata* and *Fortunella hindsii*'s in Vitro Flowering

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Abstract : *Fortunella hindsii* and *Murraya paniculata* are family members of Rutaceae and have potentially improved genetic diversity. Isolated protoplasts were cultured with media supplemented with 2.0 % glucose and 0.0, 0.001, 0.01, 0.1 or 1.0. 10.0 mg/l thidiazuron (TDZ) and thickened with 0.9% gelrite, and . maintained under 16 h photoperiod at 52.9 $\mu\text{mol/m}^2$ /s light intensity. The media supplemented with 0.00 mg/l TDZ yielded the maximum plating efficiency, while 0.001 mg/l TDZ produced the highest percentage of shoot formation, approximately 80%. After being cultured on the same TDZ concentration for 12 days, the protoplasts that survived developed cell walls. Ninety days following the culture of protoplasts, *Fortunella hindsii* and *Murraya paniculata* underwent somatic embryogenesis to grow into plantlets. Thidiazuron has demonstrated efficacy in forming flower buds that grow normally. *Fortunella hindsii* and *Murraya paniculata* shoots that emerged from branch internodes flowered in vitro on half-strength MT basal media containing 0.001 to 0.01 mg/l TDZ and 2-3% sucrose after two months of culture, and they eventually went on to flower. Seventy five percent of the plants displayed flowering on medium supplemented with 0.001 mg/l TDZ. Among the segments of *Fortunella hindsii* and *Murraya paniculata* generated from branch internodes, a possible precocious and floral gradient was found.

Keywords : *Fortunella-hindsii*, in-vitro flowering, *Murraya-paniculata*, protoplast, thidiazuron

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