

B-16: Tissue culture of the flowering ornamental, *Tibouchina urvilleana* (DC)

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Ornamental plants have become a growing segment in the country's export economic strategy. At present, most varieties exported are common ornamentals which are also exported by competing countries. For Sri Lanka to expand its market, it is important to develop and produce varieties that confer a competitive advantage.

Tibouchina urvilleana is a naturalized plant in the Montane regions which has considerable potential as a flowering ornamental. It produces attractive, deep purple flowers, profusely and year round. Propagation by tissue culture would enable production of the quantities required to meet export demand.

Axillary buds from soft-wood portions of stem were collected from Ambewela. Single node sections 5 - 10 mm long, with petioles and leaves removed, were used as explants. Buds were sterilized using H_2O_2 (5% w/v) containing a drop of Tween, for 20 min. Buds were shaken in 70% (v/v) 2-Propanol for 2 min and then washed thrice in sterile water. Buds were cultured in solid (1% agar) Murashige and Skoog (MS) medium

containing either

- a. 8.8 μM 6-benzylaminopurine (BAP) (treatment 1)
- b. 8.8 μM BAP and 9 μM Zeatin (treatment 2)
- c. 22 μM BAP and 0.5 μM Naphthalene acetic acid (NAA).
(Treatment 3).

Cultures were maintained at $27 \pm 2^\circ\text{C}$ with 12 h photoperiod per day. Buds were subcultured every 4 weeks.

For rooting, 2 - 3 node cuttings from *in vitro* shoots were transferred to half-strength solid MS medium containing charcoal (0.1%), without and with 4.9 μM Indole-3-butyric acid (IBA).

Hardening of rooted plants was carried out at Ambewela. Plants were washed free of agar and planted in trays of coconut fibre and sand in equal proportions. Plants were kept in a polyethylene chamber for 4 weeks and then transferred to greenhouse conditions.

Buds stayed green for 2 - 3 weeks but progressively turned black. Small bud sprouts were observed in 10% of the explants after 6 weeks in treatment 3 only. These sprouted explants remained in an inactive state for 4 - 6 months. Thereafter, sprouted buds elongated into shoots. Beyond this stage, proliferation of shoots was rapid, with cultures producing 3 - 5 shoots per month. Explants in treatments 1 and 2 did not show much activity after 4 months.

Rooting was observed in MS medium containing IBA, after 2 - 4 weeks. Hardening losses were under 15%.