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De novo shoot regeneration in excised embryos of Momordica dioica in the presence of Thidiazuron

Momordica dioica ("Thumbakarivila") is a dioecious perennial mostly grown in the wild. In addition to the value of its fruit as a vegetable, it plays an important role in Ayurvedic medicine. This species is not grown commercially, possibly due to a low frequency of seed germination. Investigations on plantlet regeneration from excised embryos of the species were carried out to overcome this problem.

Mature seeds were surface sterilized and the embryos excised aseptically. These were cultured on MS medium supplemented with indole acetic acid (IAA) (0.1- 0.5 mg L-1) and thidiazuron (TDZ) (0.5 mg L-1) for primary culture establishment. Callus was induced in treatment combinations of IAA and TDZ. Callus transferred to hormone free MS medium regenerated shoots.

Single node segments from regenerated shoots cultured on MS medium supplemented with gibberellic acid (GA3) (0.05 mg L-1) and TDZ (0.1 & 0.2 mg L-1) also developed organogenic callus within 2 weeks. After 4 weeks of initial culture, shoots were regenerated. When callus bearing shoot clusters were sub cultured, continuous proliferation of callus and shoot regeneration was observed. Single node segments of regenerated shoots cultured on MS medium with indole butyric acid (IBA) (0.2, 0.5, 0.7 and 1.0 mg L-1) were induced to root. The axillary bud developed to form a complete plantlet. A higher number of roots developed above 0.7 mg L-1 IBA, with callus development at the base of the explant. These plantlets did not survive hardening. Root induction and plantlet survival was better with 0.2 and 0.5 mg L-1 IBA.

M. dioica excised embryos showed a high potential for *de novo* multiple shoot regeneration and rooting. The use of TDZ at initial stages of culturing induced callus that regenerated shoots at reduced TDZ levels. Improvement of this technique is recommended for propagule production.