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Tissue culture studies in spine gourd (*Momordica dioca* Roxb.)

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SUMMARY
An experiment on, "Micropropagation studies in Spine gourd (*Momordica dioica* Roxb)" was undertaken. Different explants were tried, at which axillary buds proved to be the best explant for *in vitro* propagation. Different concentrations at cytokinins and auins were used for establishment of axillary buds of spine gourd, where, the treatment combination, MS + BAP 1.5mg. litre^{-1} + NAA 10 mg. Litre^{-1} was found to be the best for establishment and initiation of explant. The treatment combination of MS + $AdSO_4$ (70mg. Litre^{-1}/ 80 mg. Litre^{-1}) + BAP (1.0 mg. Litre^{-1}) + NAA (1.0 mg. Litre^{-1}) was found to be superior for multiple shoot development. Effect of different concentrations of auxin in combination with Adenine sulphate for induction of root was studied, whereas, MS + $AdSO_4$ (80 mg. Litre^{-1}) + IBA (1mg litre^{-1}) was found to be the best treatment for induction and development roots. The maximum survival of plantlets in primary hardening (54.44) was observed on soilrite : cocopit (3:1). During secondary hardening 95 per cent plantlets survived in AKSG-35 followed by AKSG-5 (90%) and AKSGM-1 (75%).

Key words : Spine gourd, Micropropagation, Auxins and Cytokinin.

Kartoli (*Momordica dioca* Roxb.) is a cucubitacious and perennial vegetable. It is indigenous and well distributed throughout the country (Singh, 1990). Kartoli having tuberous roots, herbaceous climber grown for nutritious immature tender green fruits. It is unexploited promising vegetable a high nutritional, medicinal and economic value. Generally, spine gourd is propagated by seeds is very less and also requires 2-3 years for bearing to good crops. As the multiplication rate is very slow, the crop could not commercially cultivated.

Considering the importance of spine gourd and need for rapid multiplication of promising local genotypes of two females AKG –5 and AKSG – 35 and one male (AKSGM-1) of the present study was undertaken.

MATERIALS AND METHODS

Shoot tip and axillary buds of spinegourd were washed throghly in running tap water for 20 minutes to remove all the dirt then they were treated with tween 20 for 3 minutes with distilled water. The explants were then soaked in Bavistin (0.1%) for 10 minutes then they were washed with sterile distilled water properly. The explants were then surface sterile with $HgCl_2$ (0.1%) this sterilization was carried out on LAF bench. The explants were then given 3-4 washing with double distilled sterile water.

To detect the most effective treatment of sterilization the various treatments of mercuric chloride (0.1%) were tried for 6, 8 and 10 minutes, respectively.

After sterilization explants was prepared for inoculation by removing of the apex by the help of sterilized scalpel and inoculated in test tube on MS medium supplemented with different concentrations of growth hormones and sodium phosphate dibasic di hydrate (340 mg. Litre^{-1}). In this way 13 treatments were tired for the establishment of culture.

Well established cultures were then transferred to proliferation media having different concentrations of growth hormones and sodium phosphate dibasic dihydrate (340 mg. Litre^{-1}) were used to study their response for multiple shoot induction.

Well lignified shoots were separated properly and individual shoot was transferred aseptically to rooting medium. Percentage of rooted shoots, number of primary roots and length primary roots (cm) were recorded after 30 days of rooted culture.

Hardening was done under green house condition (>80% and 28±2^{0}C temp.) with following treatments.

RESULTS AND DISCUSSION

Explant selection :

Response of explants i.e. shoots tip and axillary buds of spine gourd was studied for *in vitro* micropropagation technique.

Geeta Kulkarni (1999) reported that in case of Kartoli

Table 1 : Role of different explants for establishment.

Sr. No.	Explants	Establishment
1	Shoot tips	++
2	Axillary buds	++++

++-Fair establishment

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