

## In vitro rooting studies in spine gourd (*Momordica dioica* Roxb)

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Healthy shoots, which have their own root system, are able to survive and become complete plantlets. The healthy well developed multiple shoots were individually separated and kept for rooting on various media composition. 80 per cent rooting was obtained in AKSG-5 on RM<sub>6</sub> (MS+AdSO<sub>4</sub> 80 mg/l + IBA 1.0 mg/l). The highest rooting percent in AKSGM-1 (93%) was obtained on RM<sub>3</sub> (MS+IBA 1.0 mg/l) followed by AKSG-35 (86.67%) was observed. Similar results reported by Deokar et al. (2003) and they obtained 80% roots in spine gourd on MSHP + ADS 80 mg/l + IBA 1.0 mg/l + 0.9% agar agar and Geeta Kulkarni obtained (86.66%) rooting response to Kartoli on MS+3ppm NAA + 0.8% Agar + 3% sucrose with activated charcoal. In present investigation, in AKSG-5 (4.33) primary roots per culture with 4.17 cm root length and in AKSG-35 (4.67) primary roots per culture with 4.67 cm root length in AKSGM-1 (4.67) primary roots with 4.67 cm root length were recorded on RM<sub>6</sub> (MS+AdSO<sub>4</sub> 80 mg/l + IBA 1.0 mg/l) were recorded.

**Key words :** Rooting, In vitro.

### INTRODUCTION

It possesses several medicinal properties and are good for those suffering from cough and other diabolic problems young leaves, flowers and seeds are also edible. Fruits are also used in ulcers, piles, sores and obstruction of liver and spleen as appetizer and astringent. The seeds are used for chest problem and stimulate urinary discharge. The roots contains triterpenoid saponins are applied in bleeding piles, bowel infections and urinary complaints. The paste of roots can be applied over body as a sedative in fever (Chakravorty, 1959). Considering to multifold uses of kartoli, the systematic improvement in cultivation would be a boon both for horticulture as well as pharmaceutical industries especially in Ayurveda. The demand for kartoli is increasing. The fruits are sold at premium prices in the metropolitan cities as well as in small towns.

Propagation by seed and cuttings is not common in Kartoli. The highly cross pollinated dioicous nature of Kartoli exhibit genetic variation for morphological and growth parameters. Tubers are suitable for propagation but it have some limitations, first is dormancy and sprout only at the onset of monsoon secondly multiplication rate of tuber is very low. (Mishra and Sahu, 1983 and Ram et al, 2002). High multiplication ratio can be achieved by micropropagation technique, which enables rapid multiplication of disease pest free elite plants within short space and time. (Morel and Martin, 1952).

### MATERIALS AND METHODS

The explants of spine gourd i.e., shoot tip and axillary buds were washed under tap water and surface sterilized after washing in 0.1% Teepol detergent for 2 minutes and followed by 0.1% HgCl<sub>2</sub> treatment for 2 minutes. The explants were then washed with sterile distilled water. The explants were then cultured in vitro on MS medium singly or in combination with various concentrations of BAP and NAA for establishment in test tubes (autoclaved at 115 degree C for 25 minutes in an autoclave.) cultures were maintained in a laboratory at 25 degree celcius. The cultures were sub cultured at an interval of 15 days on fresh MS with similar combination. A single shoot from well established culture were transferred to shoot proliferation media to study their response for induction and development of multiple shoots. After 30 days, multiple shoots were observed and data was recorded on number of multiple shoots produced per culture.

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### RESULTS AND DISCUSSION

For induction of roots to proliferated multiple shoots the in-vitro developed well lignified shoots of spine gourd were individually

**Table 1:** Effect of different concentrations of cytokinins and auxins on per cent rooting

Medium	AKSG-5	AKSG-35	AKSGM-1	Mean
RM1	26.67	33.33	40.00	33.33
RM2	46.67	53.33	60.00	53.33
RM3	73.33	86.67	93.00	84.33
RM4	43.33	46.67	40.00	43.33
RM5	20.00	26.67	33.33	26.66
RM6	80.00	80.00	76.67	78.89
RM7	43.33	40.00	53.33	45.55
RM8	33.33	20.00	33.33	28.89
Mean	45.83	48.33	53.75	49.30

  

	Variety	Medium	Variety x Medium
SE±	1.85	3.02	5.23
CD at 5%	5.26	8.59	14.87

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