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Short Communication

IBA Enhances Rooting in Pomegranate Cuttings

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Pomegranate (*Punica granatum* L.) is an important fruit crop of arid and semi-arid regions. It is cultivated mainly in Maharashtra, Karnataka, Andhra Pradesh and Rajasthan. Now this crop is getting popular in Uttar Pradesh. An evergreen cultivar "Ganesh" is found most promising for central U.P. conditions (Umrao and Singh, 1995). Therefore, for its popularization, it is necessary are provide quality nursery plants at low cost to growers in large scale. The higher production of nursery plants from limited mother plants is only possible, when pomegranate is multiplied by stem cuttings, in place of layering and root suckers. But, rooting in hardwood cuttings, without any treatment, is not so satisfactory. Therefore, to enhance rooting in cuttings, an experiment was carried out.

During 1997, the experiment was conducted in Randomized Block Design, with five treatments in four replications and each plot consisted of 15 cuttings. One-year-old mature shoots of cv. "Ganesh" were selected for making cuttings. The hardwood cuttings, 25 cm long, were treated in indole butyric acid (IBA) solution of 0, 2.463, 4.926, 7.389 and 9.852 μ moles ml^{-1} by quick dip method and planted in early March. The data on growth, rooting, number and length of roots and dry weight of plant were recorded in late June and analyzed statistically. Data summarized in Table 1 reveal that number of sprouted cuttings (10.0) and percentage of rooted cuttings were highest (66.6%) at 4.926 μ moles ml^{-1} followed by 7.389 μ moles ml^{-1}. Other two concentrations, 2.463 μ moles ml^{-1} and 9.852 μ moles ml^{-1}, were akin for those parameters. At 4.926 μ moles ml^{-1} of concentration, 46.6% more cuttings were rooted in comparison to control. The results are in accordance to the findings of Bankar and Prasad (1992) and Arumugam *et al.* (1997) in cuttings of guava and jack fruit, respectively. Height of plant was maximum (62.0 cm) at 7.389 μ moles ml^{-1}, but statistically at par with 9.852 μ moles ml^{-1} and 4.926 μ moles ml^{-1}. Thus, 21-27 cm longer plants were produced by treated cuttings than untreated ones. Number of branches/plant was maximum with 7.389 μ moles ml^{-1} level. Longer and healthy plants could be produced due to more absorption of moisture and nutrients by roots of IBA treated cuttings. Such findings have also been reported by Randhawa and Nito (1980), Sandhu and Singh (1986) and Kamaluddin *et al.* (1997). Maximum number of roots (23.5) and longest roots were

Table 1. Effect of IBA on rooting and growth parameters in pomegranate cuttings

IBA (μ moles ml^{-1})	No. of sprouted cuttings	Percentage of rooted cuttings	Height of plant (cm)	No. of branches	No. of roots	Length of longest root (cm)	Dry weight (g)	
							Root	Top
Control	3.0	20.0	35.0	1.7	14.7	11.2	2.0	26.5
2.463	5.7	38.3	56.0	2.2	16.2	13.2	4.0	49.5
4.926	10.0	66.6	60.5	3.7	23.5	16.0	7.2	59.0
7.389	7.7	51.6	62.0	4.2	22.5	15.5	7.0	60.2
9.852	5.5	36.6	61.2	3.5	21.2	15.0	4.5	54.7
SE (d)	0.66	4.06	1.96	0.64	1.76	1.31	0.53	1.74
CD at 5%	1.44	8.85	4.28	1.39	3.83	2.86	1.16	3.80

observed at 4.926 μ moles ml^{-1} which were statistically akin with 7.389 μ moles ml^{-1} and 9.852 μ moles ml^{-1}. The number and length of roots significantly increased at all concentrations over control. Increase in these parameters have also been reported by Randhawa and Nito (1980), Bankar and Prasad (1992) and Arumugam *et al.* (1996). Dry weight of roots was highest at 4.926 μ moles ml^{-1}, while dry weight of top portion was maximum at 7.389 μ moles ml^{-1} (60.2 g). The results are in agreement with those of Sandhu and Singh (1986), Bankar and Prasad (1992), and Kamaluddin *et al.* (1997). Thus, IBA treatment enhanced rooting, plant growth and produced taller and healthy plants. Thus, it is suggested that before planting pomegranate, cuttings should be treated with IBA at 7.389 μ moles ml^{-1} concentration.

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