

Research Note

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## Effect of auxin on rooting of African marigold (*Tegetes erecta* L.)

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**ABSTRACT :** The experiment was conducted on *Dendrobium Species* in greenhouse, Department of Floriculture and Landscaping, ASPEE College of Horticulture and Forestry, Navsari Agriculture University, Navsari in the State of Gujarat to study effect of Auxin on rooting of African marigold (*Tegetes erecta* L.). Growth regulators, NAA at (50, 100, 150, 200 mg/l) and IBA (50, 100, 150, 200 mg/l) were used as treatments. Growth of stems and shoots of various plants and formation of roots in cuttings were remarkably stimulated by the application of various plant regulators. Significantly variations were recorded among the treatments with regard to the root characteristics in tip cuttings in Marigold. The result revealed that maximum average number of roots per cutting after 20 and 30 days was 40.53 and 58.79, respectively under the treatments at IBA + NAA 150 mg/l ( $T_{10}$ ). The average length of stem per cutting was maximum (6.1 and 15.33 cm) under IBA + NAA 150 mg/l after 20 and 30 days, respectively. The average length of root per cutting was recorded maximum (4.6 cm) under NAA 200 mg/l ( $T_1$ ) after 20 days and (5.51 cm) under IBA + NAA 150 mg/l ( $T_{10}$ ) after 30 days.

**Key Words :** IBA (Indol butyric acid), NAA (Naphthalene acetic acid), Auxin, African marigold

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Marigold is one of the most popular flowers in our country. "Pusa Narangi" is a beautiful newly released marigold variety from IARI, New Delhi having orange flower colour, compactness, marketable size and high yielding. Marigold is propagated by seeds. However, true to type plant cannot be obtained through seed propagation because it is an often cross pollinated crop. Hence, for precaution to maintain true to type of all characters of particular plant one should follow vegetative propagation like cutting for planting material.

The present experiment was conducted at floriculture farm. ASPEE College of Horticulture and Forestry, Navsari Agriculture University, Navsari in the State of Gujarat to study effect of auxin on rooting of African marigold (*Tegetes erecta* L.). Growth regulators, NAA at (50, 100, 150, 200 mg/l) and IBA (50, 100, 150, 200 mg/l) were used as treatments. Tip cutting with convenient size of 3-4 cm length from healthy moderately vigorous stock plants cutting were grown in net house. Growth regulators, NAA at (50, 100, 150, 200 mg/l), IBA (50, 100, 150, 200 mg/l) were used as treatments. Tap water was used as a control. All treatments were arranged in Randomized Block Design with 3 replications. Each cutting was dipped up to 1 cm length in each solution for one hour and planted in sand media. Thirty cuttings were taken in each treatment. Observations on

the average number of roots per cuttings, average length of root per cuttings, average length of stem per cuttings were recorded after 20 and 30 days and recorded data were statistically analyzed.

Significant variations were recorded among the treatments with regard to the root characteristics in tip cuttings in Marigold. The result revealed that maximum average number of roots per cutting after 20 and 30 days was 40.53 and 58.79, respectively under the treatments at IBA + NAA 150 mg/l ( $T_{10}$ ). The average length of stem per cutting was maximum (6.1 and 15.33 cm) under IBA + NAA 150 mg/l after 20 and 30 days, respectively. The average length of root per cutting was recorded maximum (4.6 cm) under NAA 200 mg/l ( $T_1$ ) after 20 days and 5.51 cm under IBA + NAA 150 mg/l ( $T_{10}$ ) after 30 days. Bose and Mandal (1973) also reported the same.

Thus, IBA at medium concentration 100 and 150 ppm either alone or in combination with NAA at 150 ppm were found to be most effective in the present experiments regarding average number of roots / cutting, average length of root / cutting and average length of shoot / cutting. This combination of IBA with NAA was found superior over other treatments and control. IBA alone being more effective than NAA was earlier reported in ornamental plants cutting (Bose and Mandal,