



**Research Note :**

**EFFECT OF TYPE OF CUTTINGS AND CONCENTRATION OF NAA ON THE ROOTING PERFORMANCE OF JASMINE (*Jasminum humile*)**

**G. R. Kishore\***

Department of Horticulture, C. C. R. (P. G.) College Muzaffarnagar (U.P.)

\*Corresponding Author's E-mail: drgrkishore@gmail.com

**ABSTRACT :** The experiment was carried out during year 2014 at the field Horticulture Garden of C. C. R. (P. G.) College, Muzaffarnagar (U.P.). The experiment comprised of the types of cuttings and NAA concentration. The type of cuttings (hard wood, semi hard wood and soft wood) were treated at 0 ppm, 1500 ppm, 3000 ppm and 4500 ppm of NAA. Treated cuttings were planted in factorial R.B.D. with 12 treatments. NAA at 4500 ppm caused earlier sprouting over control. NAA at 1500 ppm improved the length of the shoot and number of leaves. Number of roots, length of the roots, rooting percentage and survival percentage were improved at 4500 ppm in case of *Jasminum humile*. While mortality percentage increased under hard wood cutting at 1500 and 3000 ppm concentration of NAA. Moreover, mortality percentage was highest in control. Semi hard wood cuttings treated with 4500 ppm NAA proved better than all other treatments.

**Keywords :** *Jasmine, type of cutting, NAA, rooting.*

Jasmine has been cultivated as an ornamental plant in India since very early time. There are 200 species of *Jasmines* found in tropical and sub tropical regions of the world. In India, 20 species are grown in several parts of the country including Tamilnadu, Karnataka, Andhra Pradesh, West Bengal and Maharashtra.

The experiment comprised of the type of cuttings (C: hard wood cutting; C<sub>1</sub>: semi hard wood cutting; and C<sub>2</sub>: soft wood cutting); and NAA concentrations (N<sub>0</sub>: 0 ppm NAA; N<sub>1</sub>: 1500 ppm NAA; N<sub>2</sub>: 3000 ppm NAA, and N<sub>3</sub>: 4500 ppm NAA) was laid out in factorial R.B.D. with 12 treatment combinations. The cuttings were taken from a vigorously growing shoot of 6-12 months old *Jasminum humile*. Each shoot was divided in to three parts on the basis of maturity *i.e.* hard wood, semi hard wood and soft wood cutting. The length of each type of cutting was approximately 10-20 cm. The basal cut was made just below the node with a straight cut and upper portion was given a slant cut.

The NAA solution was made by dissolving required amount of NAA powder in the required amount of absolute alcohol and then made up the required volume with the help of distilled water. The cuttings were dipped in to NAA solution (0 ppm, 1500 ppm, 3000 ppm and 4500 ppm) for 5-10 seconds. The

control was also maintained with distilled water in each replication.

The observation on the effect of type of cuttings and concentrations of NAA (Table 1) on the time of sprouting showed that the earliest sprouting was observed under C<sub>2</sub>N<sub>1</sub> and C<sub>1</sub>N<sub>3</sub> (8 days each). The length of the shoot was found maximum with a treatment combination C<sub>1</sub>N<sub>1</sub> (101.89) followed by C<sub>1</sub>N<sub>3</sub> (78.55). The present findings are supported by Bose *et al.* (3). Observations on the number of leaves that counted after every fifteen days were significant. The maximum number of leaves at 60 DAP was observed under C<sub>2</sub>N<sub>2</sub> (25.67) and C<sub>1</sub>N<sub>3</sub> (23.67) which are in support of Bajpai and Panwar (1). The treatment combination C<sub>2</sub>N<sub>3</sub> produced maximum length of root (43.33mm) followed by C<sub>1</sub>N<sub>3</sub> (38.33 mm) which supports the reports of Bose *et al.* (3) and Michael (4).

The maximum rooting percentage was observed under the treatment C<sub>1</sub>N<sub>3</sub> (73.33%). Semi hard wood cutting at 4500 ppm have greater potential for rooting. The minimum rooting percentage was recorded under C. The similar results on rooting per cent were also reported by Bhattacharjee and Balakrishanan (2) and Bose *et al.* (3). C<sub>1</sub>N<sub>2</sub> and C<sub>1</sub>N<sub>3</sub> proved better over the rest of the treatments for survival percentage. The lower survival per cent of rooted cuttings was recorded in control with maximum mortality. The minimum mortality was found with C<sub>1</sub>N<sub>2</sub> and C<sub>1</sub>N<sub>3</sub> (26.67% each) which are inconsonance with the reports of Bose *et al.* (3). The above discussion highlights the importance of types of cuttings and concentrations of

**Article's History:**

Received:14-12-2015 Revised:03-02-2016 Accepted:25-02-2016

**Table 1 : Effect of type of cutting and NAA concentration on various parameters of *Jasminum humile* cuttings.**

Treatments	Days to Sprouting		Length of the shoot/cutting (mm)			Number at leaves per plant			No. of Roots per cutting			Length of root per plant (mm)			Rooting percentage			Survival percentage			Mortality percentage				
	C	C <sub>1</sub>	C <sub>2</sub>	60 days			C	C <sub>1</sub>	C <sub>2</sub>	C	C <sub>1</sub>	C <sub>2</sub>	C	C <sub>1</sub>	C <sub>2</sub>	C	C <sub>1</sub>	C <sub>2</sub>	C	C <sub>1</sub>	C <sub>2</sub>	C	C <sub>1</sub>	C <sub>2</sub>	
				C	C <sub>1</sub>	C <sub>2</sub>																			
N	17.00	13.00	11.33	23.00	62.55	34.22	11.66	17.66	15.33	3.33	7.67	3.33	4.83	25.00	21.67	20.00	40.00	46.67	53.33	20.00	46.67	53.33	80.00	53.33	46.67
N <sub>1</sub>	14.00	10.33	9.00	0.00	101.89	36.23	0.00	28.89	17.00	2.00	4.00	2.00	0.00	26.33	27.00	0.00	53.33	53.33	60.00	0.00	66.67	60.00	100.00	43.33	40.00
N <sub>2</sub>	9.00	8.66	9.00	0.00	58.44	70.89	0.00	18.66	25.67	8.00	10.00	8.00	0.00	31.00	25.16	0.00	66.67	60.00	60.00	0.00	73.33	66.67	100.00	28.67	33.33
N <sub>3</sub>	9.00	8.00	8.00	27.55	78.55	51.55	14.66	23.67	20.67	12.00	17.00	12.00	33.67	38.33	43.33	46.67	73.33	66.67	66.67	46.67	73.33	66.67	53.33	26.67	33.23
C.D. (P = 0.05)			0.85			1.16			0.62		1.12			4.71				16.72			16.72				16.05

NAA for improving root formation and promoting growth in *Jasmines humile*.

**REFERENCES**

1. Bajpai, P.N. and Parmar, A.S. (1958). Effect of some plant growth regulators (IAA, IBA and NAA) on rooting performance of *Jasminum sambac*. *Sci. and Cul.*, **23** (a) 489-490.
2. Bhattacharjee, S.K. and Balakrishanan, M.B. (1983). Effect of growth regulators and rooting media on leaf number, length and woodiness of cutting. *Haryana J. Hort. Sci.*, **12** (1/2) : 7-12.
3. Bose, T. K., Mondal, D.P. and Paramanik, D.K. (1972). Studies on effect of concentrations of IBA on the types of cuttings of ornamentals. *Punjab Hort. J.*, **12** (4) 228-34.
4. Michael, A.D. (1986). Cutting propagation of *Magnolia grandiflora* L. XXII Intern. Hort. Congress, 83rd Annual meeting of the Amer. Soc. for Hort. Science. University of California, Davis, U S A vol. **2** (3): pp 265.



**Citation :** Kishore G.R. (2016). Effect of type of cuttings and concentration of NAA on the rooting performance of jasmine (*Jasminum humile*). *HortFlora Res. Spectrum*, **5**(1) : 86-87.