



Research Note

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Effect of etiolation on air layering of cashewnt (*Anacardium occidentale* L.) cv. VENGURLA-6

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ABSTRACT : The present studies were undertaken to ascertain the effects of etiolation on air layering of cashewnut, studied effect of etiolation in two ways namely E_1 (without etiolation) and E_2 (with etiolation) which indicated that, etiolated shoot took significantly minimum days (23.31) for appearance of 1st rooting and days taken (32.34) for harvesting of air-layers as compared with non-etiolated shoot. The per cent success (56.72) of rooted layers was significantly higher in etiolated shoot than non-etiolated shoot. The number of primary root (11.06), number of secondary roots (22.49), number of roots (61.10) length of primary roots (5.01 cm), thickness of primary roots (0.30 mm) per layer, survival per cent (44.65) after one month of detachment, were observed etiolated shoot. Significantly higher in etiolated shoot in comparison to non-etiolated shoot.

KEY WORDS : Cashewnut (*Anacardium occidentale* L.), Etiolation, Air layering

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Cashewnut (*Anacardium occidentale* L.), a member of the family Anacardiaceae with the natural order Sapinales, is an evergreen tree. In India, out of the total coverage, about 75 per cent area is on the West coast covering the states Karnataka, Kerala, Goa and Maharashtra, while in East coast, the states includes Andhra Pradesh, Orissa, Pondicherry, Tamil Nadu, Tripura and West Bengal. Cashewnut is an important fruit of tropical and sub-tropical regions of the country. India is supposed to be the highest producer of this fruit in the world.

The uniform cashewnut trees, cv. Vengurla-6 were selected for the study, and on the selected tree shoots of uniform age (1 year old), growth (50 to 60 cm length), and thickness (0.8 to 1.0 cm diameter) were randomly selected for air-layering. The experimental unit consisted of a single tree with twenty layers in each treatment. The treatments were arranged in Factorial Randomized Block Design with three replications.

On the selected trees, about 1 year old shoots having an average diameter of 0.8 to 1.0 cm were tagged. The leaves were removed from the base of the selected shoots, then were girdled by removing a ring of bark about 2.5 to 3 cm long

carefully by, giving two circular cuts at both the ends of a ring with a sharp knife at about 50 to 60 cm away from the tip of the shoot. The cambium layer was removed from ringed portion by rubbing it gently with fingers.

It was observed that (Table 1), with regards to etiolation, the difference was found to be significant between the etiolated and non-etiolated layered shoots. The etiolated shoots (E_2) took significantly less days to first root initiation (23.31 days) than non-etiolated (E_1) shoots (27.41 days). The etiolated shoots (E_2) too significantly less days (32.34) to taken for harvest of layered over non-etiolated (E_1) shoots (34.50) days, similar results recorded by Sharma *et al.* (1990).

For percentage of rooted layers the etiolated shoots (E_2) gave comparatively high (56.72%), while in case of non-etiolated shoots (E_1), low percentage of rooted layers (52.86%) were observed. The effect of etiolation treatment was also found significant. Maximum number of primary roots (11.06) was recorded in etiolated layer (E_2), while minimum numbers of primary roots (10.30) were observed in the non-etiolated layers (E_1). Maximum number of secondary roots per layer (22.49) was noted in etiolated (E_2) and minimum (20.66) was noted in non-etiolated (E_1) layered shoots. Maximum

Table 1 : Effect of etiolation on rooting characteristics, per cent success and final survival per cent of air layers of cashew nut									
Treatments	Days taken for first rooting	Days taken for harvesting of layers	Per cent success	No. of primary roots per layers	No. of secondary roots per layers	No. of roots per layers	Length of primary roots per layers (cm)	Thickness of primary roots per layers (mm)	Survival per cent
E1 (without etiolation)	27.41	34.50	52.86	10.30	20.66	56.90	4.75	0.29	41.55
E2 (with etiolation)	23.31	32.34	56.72	11.06	22.49	61.10	5.01	0.30	44.65
S.E.±	0.21	0.45	1.28	0.16	0.40	1.07	0.5	0.002	0.70
C.D. (P=0.05)	0.62	1.36	3.82	0.47	1.21	3.19	0.16	0.006	2.08

number of roots per layer (61.10) observed in etiolated layers (E_2) and minimum number (56.96) of roots per layer observed in non-etiolated layers (E_1). The effect of etiolation observed that, the mean length of longest primary roots obtained from etiolated layered shoots (E_2) was significantly more (5.01 cm) in comparison to non-etiolated (4.75 cm) layered shoots (E_1). The etiolation treatment (E_2) produces more thicker primary roots (0.30 mm) in comparison to non-etiolated (E_1) layered

shoots (0.29 mm). The etiolated layer E_2 gave significantly maximum survival percentage (44.65%) of rooted layers in comparison to non-etiolated layers E_1 (41.55%).

REFERENCE

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