

STANDARDISATION OF ROOTING MEDIA FOR PROPAGATION OF CUTTINGS OF CINNAMON VARIETIES : NAVASHREE & NITHYASHREE

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Abstract

Four different rooting media, viz., sand, coir, sand and coir in equal proportion and potting mixture were used to standardise the best medium for rooting of the two cinnamon varieties, Navashree and Nithyashree. Sand and coir dust (1:1) was found to be the best, with 63 per cent successful rooted cuttings, 18.6 cm. length of primary root and 15.9 secondary roots per cutting. Between the two varieties, Nithyashree responded better.

Cinnamon (*Cinnamomum verum* Bercht & Presl.) (Lauraceae) is an important tree spice and the dried inner bark, bark oil, bark oleoresin and leaf oil are the economically important produces. The domestic production is about 200t of bark per year and about 60 tonnes is imported

annually causing a drain in foreign exchange for the country. There is vast scope to extend its cultivation in different parts of our country. Two national varieties, viz., Navashree and Nithyashree having higher bark and leaf oil and oleoresin content had been released (Krishnamoorthy et al. 1996).

As cinnamon is adopted for cross pollination, in order to get uniformly high yielding and quality progenies, a trial on rooting of stem cuttings of these two varieties was conducted during the year 1998-99, for mass multiplication and distribution.

The trial was conducted at the experimental farm of Indian Institute of Spices Research at Peruvannamuzhi. The trial was laid out in a split plot design with two varieties, Navashree and Nithyashree as main plot treatments and four treatments, viz., sand and coir dust (1:1), pure sand alone, potting mixture and coir alone as subplot treatments, with five replications per treatment with ten cuttings per replication. Terminal shoots of about 15 cm length with two leaves were used for the study. The cuttings were treated with IBA 500 ppm in charcoal. One cutting only was inserted to a depth of two cm in the medium in each polybag and was enclosed by another polybag to maintain humidity.

Observations on rooting percentage, number of primary and secondary roots and length of main roots were recorded after 100 days and analysed statistically (Table 1 & 2).

A significant difference was observed among the four rooting media, with regard to all characters recorded. Sand and coir dust (1:1) recorded the maximum rooting of 63 per cent,

Table 1. Effect of rooting media on rooting ability of Navashree and Nithyashree stem cuttings

Rooting medium	Percentage of rooted cuttings	Mean number of primary roots per rooted cutting	Mean length of primary roots (cm)	Mean No. of secondary roots per rooted cutting
Sand+coir dust (1:1)	63.0 (52.73)	1.75	18.57	15.94
Sand	40.9(39.76)	1.86	11.79	6.49
Potting mixture	57.0 (49.04)	2.54	17.18	9.64
Coir dust	33.3 (35.27)	2.09	13.35	4.33
CD (0.05)	4.48	0.39	4.45	3.63

Figures in paranthesis indicate transformed values.

Table 2. Rooting performance of Navashree and Nithashree stem cuttings.

Rooting medium	Percentage of rooted cuttings	Mean number of primary roots per rooted cutting	Mean length of primary roots (cm)	Mean No. of secondary roots per rooted cutting
Nithyashree	53.0(46.75)	2.04	18.00	9.5
Navashree	44.1 (41.64)	2.08	12.44	8.7
CD (0.05)	4.24	NS	2.90	NS

Figures in paranthesis indicate transformed values.

length of main root (18.57 cm) and number of secondary roots (15.94). Potting mixture gave the maximum primary roots (2.54 per cutting) with a rooting of 57 per cent. Thus sand and coir dust (1:1) was found to be the best rooting medium for Navashree and Nithyashree, followed by potting mixture.

In the present trial, among the two varieties, Nithyashree recorded a significantly higher value of 53 per cent and 18cm for percentage of rooted cuttings and mean length of main root, respectively over Navashree. Wide variability existed in the rooting response of nine cinnamon elite lines (Rema & Krishnamoorthy 1993). Navashree recorded only 13.2 per cent rooting and Nithyashree only 20.7 per cent using coir dust as rooting medium and IBA 2000 ppm as rooting hormone in the earlier study (Rema and

Krishnamoorthy 1993). The present study recorded 63 per cent rooting in these two varieties. (Table 1) using sand and coir dust (1:1) as rooting medium and by treating the cuttings with IBA 500 ppm in charcoal.

The results indicated that sand and coir dust (1:1) was the best rooting medium to multiply the released cinnamon varieties, viz., Navashree and Nithyashree.

References

- Krishnamoorthy B., Rema J., John Zachariah T., Jose Abraham and Gopalam A. 1996. Navashree and Nithyashree - two high yielding and high quality cinnamon (*Cinnamomum verum* Bercht & Presl.) selections. *J. Spices Aromatic Crops*, 1(5) : 28-33.
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