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Studies on standardization of period for softwood grafting in dry land fruit crops

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Abstract

An experiment was conducted during 2005-2006 at central nursery scheme V.N.M.K.V, Parbhani. Three separate experiment carried out on Jamun, Tamarind and Custard apple. An experiment carried out in Complete Randomized Design with three replications and twelve treatments. Significantly maximum final percent success was recorded in a Jamun grafting was carried out on 1st February (99.33 percent). In tamarind on 1st march (71.66 percent) and in custard apple 1st February (94.99 percent).

Keywords: standardization, softwood grafting, fruit crops

Introduction

India is the endowed with different agro climatic regions. Dry land horticulture has become important aspect of horticulture specialiy in Maharashtra about 70%.of the total land comes under rainfed agriculture This type of farming attains a greater importance. Tamarind, Jamun and Custard apple are important dry land fruit crops of the state. These crops bring in the use of waste land of the farm such as a bunds, riverbanks and places where cultivation of grain crops is rather difficult. In the recent year softwood grafting has become popular because of its added advantages over other mango, sapota, (Amin. 1978) ^[1]. Therefore an investigation was planned studies on standardization of period for softwood grafting in dry land fruit crops.

Materials and Methods

The experiment was conducted entitled standardization of period for softwood grafting in dry land fruit crops ciz. Jamun, Tamarind and Custard apple was carried out at central nursery. scheme VNMKV, Parbani studies were carried out in were different sets. Three separate experiment were carried out on Jamun, Tamarind and Custard apple 2005-2006. The experiment was conducted in complete Randomized design with three Replication. T₁ – Grafting on 1stDecember 2004, T₂- Grafting on 1st January 2005, T₃- Grafting 1st February 2005, T₄. Grafting on 1st march 2005, T₅. Grafting on 1st April 2005, T₆-Grafting on 1st may 2005 T₇- Grafting on 1st June 2005, T₈ – Grafting 1st July 2005, T₉- Grafting on 1stAugust 2005, T₁₀. Grafting on 1st September 2005, T₁₁- Grafting on 1st October 2005 and T₁₂- Grafting on 1st November 2005. In Jamun budsticks were taken from local selection. In Tamannnd the scion budsticks were taken from pratishthan and Custard apple budshsticks were used from Balanager. The softwood grafting in Jamun, Tamarind and Custard apple was done. Observations were recorded 30 days and 90 days after grafting.

Result and Discussion

Data presented in Table 1. The data showed that maximum initial success was obtained in case of Grafting was carried out on 1st February. Higher success in the month of February in Jamun and minimum percent success was obtained on 1st September (46.67percent) in Jamun.

In Tamarind maximum initial percent success was obtained when Grafting was carried out on 1st march (86.66 percent) followed by 1stApril (74.44 percent). In Tamarind maximum success was obtained in the month of February grafting. During the period from march to April the maximum and minimum temp ranged from 31⁰ c to 32⁰ c these conditions are favourable for rapid growth (Hartman and kestar (1972) ^[4]. In custard apple significantly maximum initial, percent success was obtained 1st February and 1st march.

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Minimum initial percent success was recorded when grafting was done on 1st may and june given zero percent of success.

The data presented in table1 significantly highest final success was obtained when grafting was carried out on 1st February (98.33 per cent).Zero percent success was observed when grafting was done on 1st march 1st April, 1st may, 1st June in Jamun. The highest percent success (98.33percent) in the month of February may be due to the favourable internal and external conditions like optimum humidity, moderate temperature and biochemical status. After harvesting of fruits, leaf fall is common in Jamun, plants go in dormant condition from November to February. At this period, sufficient food maternal is stored in the scion which help for better sucess and higher grafting. These results are in agreement with the earlier results are reported Gojamguned (1993) [3] and Chauvatia and Singh (1999) [2] in Jamun.

In Tamarind significantly maximum final per cent success was found when grafting was carried out on 1st March (71.66 percent). Minimum success was found when grafting was carried out on 1st February (20.00 percent). The results

obtained in present study are in accordance with the finding in march shinde (1990). That softwood grafting in march or the first of week of April (after harvesting and before flowering) resulted in highest success. Reddy (2000) [5] reported that in tamarind (100 percent) success was recorded in March. Zero percent final success was recorded when grafting was carried out on 1st one 1st July, 1st August, 1st September, 1st October and 1st November.

In custard apple significantly highest final success (94.99 percent) was obtained in case of grafting carried out on 1st February. Lowest success was obtained when grafting was carried out on 1st July. Higher success in the month of February may be due to the favourable in internal and external conditions like optimum humidity moderate temperature and bio-chemical status. After harvesting of fruits, leaf fall is common in custard apple. Plants go in dormant condition from November to February. At this period sufficient food material is stored in the scion which helps for better success. Pawar *et al.* (2003) reported that heights per cent success was obtained when grafted on 1st February. These results are in agreement with results reported by Kulkarni (1990) Gojamgunde (1993) [3].

Table 1: Effect of softwood grafting period on initial and final success of grafting in dry fruit crops.

Treatment	Percent initial success after 30 days after grafting			Final percent success 90 days after grafting		
	Jamun	Tamarind	Custard apple	Jamun	Tamarind	Custard apple
T ¹ - 1 st December	73.17 (8.58)	0.00 (0.70)	84.99 (9.22)	60.0 (777)	0.00 (0.70)	70.00 (8.39)
T ² - 1 st January	82.87 (9.13)	0.00 (0.70)	86.66 (9.32)	80.95 (9.02)	0.00 (0.70)	83.33 (9.13)
T ³ - 1 st February	98.33 (9.94)	20.00 (1.98)	100 (10.02)	98.33 (9.93)	20.00 (1.98)	94.99 (9.97)
T ⁵ - 1 st March	0.00 (0.70)	86.66 (8.67)	100 (10.02)	0.00 (0.70)	71.66 (8.49)	86.33 (9.31)
T ⁶ - 1 st April	0.00 (0.70)	74.44 (8.27)	78.33 (8.96)	0.00 (0.70)	32.10 (559)	35.00 (6.39)
T ⁷ - 1 st May	0.00 (0.70)	0.00 (0.70)	0.00 (0.70)	0.00 (0.70)	0.00 (0.70)	0.00 (0.70)
T ⁸ - 1 st June	0.00 (0.70)	0.00 (0.70)	7.00 (0.70)	0.00 (0.70)	(0.00) (0.70)	0.00 (0.79)
T ⁸ - 1 st July	86.00 (9.31)	0.00 (0.70)	23.33 (4.85)	38.33 (6.19)	(0.00) (0.70)	21.83 (4.81)
T ⁹ - 1 st August	49.66 (7.08)	0.00 (0.70)	35.00 (5.92)	43.17 (6.59)	(0.00) (0.70)	8.33 (5.33)
T ¹⁰ - 1 st September	46.67 (6.86)	0.00 (0.70)	40.00 (6.36)	44.10 (6.69)	(0.00) (0.70)	36.66 (6.08)
T ¹¹ - 1 st October	64.95 (8.00)	0.00 (0.70)	55.09 (7.49)	53.33 (7.19)	(0.00) (0.70)	53.33 (7.33)
T ¹² - 1 st November	69.88 (8.38)	0.00 (0.70)	56.66 (7.33)	53.33 (7.19)	(0.00) (0.70)	53.33 (7.33)
SET	0.50	0.41	0.30	0.54	0.43	0.33
CD at 5 %	1.38	1.15	0.88	1.50	1.20	0.93

Note: *Figures in the parenthesis denote square root transformed value

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