

A Note on Season of Softwood Grafting in Sapota (*Achras zapota* L.)

Sapota is one of the most important fruit crop and its area are expanding at a faster rate in recent years. But the expansion of area under this crop is limited because of non-availability of planting material (graft) in required numbers. Presently practiced multiplication of sapota by approach grafting is costly and the rate of grafts prepared would be less. Hence, can't meet the increasing demand. Recently softwood grafting has been tried by Pujari and Magdum (1991) under konkan conditions and thus found it much more advantageous over the usual method of grafting (approach). But, the season for preparing the grafts varies from region to region. The present study was, therefore, undertaken, at the Division of Horticulture, UAS, Dharwad, to investigate the suitable season of softwood grafting for Dharwad conditions.

In the present study, two year old, apparently uniform rayan seedlings grown in the pots were used as rootstock. The scion sticks of proper maturity (greenish brown colour) and thickness were collected from a single 'Kalipatti' sapota tree. Later all leaves were removed and wedge shape cut (about 5 cm) was given at the lower end, maintaining total length of scion stick to 10 cm. Top growth of stock plant was removed and vertical split (about 5 cm) was given downward. Later scion was inserted into the stock plant and tied properly with polythene tape (2 cm width). The grafts were kept under partial shade. The experiment was laidout in randomized block design with 10 plants grafted in each month from January to December, 1991. Thus, there was 12 treatments replicated three times. the observations on initial success of grafting was recorded after one month and final success of

grafting and growth of grafts (scion extension growth and number of leaves per graft) after three months of respective dates of grafting operation.

The results in the table 1 revealed that the season of softwood grafting affected the success of grafting and growth of grafts, significantly. Grafting in May has given the maximum percentage of initial and final success by recording 70 and 63.33 per cent, respectively. This was followed by April (60 and 53.33%, respectively) and June (56.67 and 50%, respectively). Similar results were also reported by Pujari and Magdum (1991) in Sapota under konkan conditions, Gunjate and Limaye (1978) in cashewnut, under konkan conditions.

The higher success of grafting during May, April and June months may be attributed to the congenial weather conditions (higher maximum and minimum temperature and optimum humidity) (Table 2) prevailed during these months, resulting in increased cell activity leading to better union of stock and scion.

The initial and final success of grafting was low (3.33%) when grafting was done during October, November and January and nil during December. Similar results were also reported by Desai and Patil (1984) in Mango and Sarada *et al.* (1991) in Cashew. this might be due to uncongenial weather conditions i.e., lower mean minimum and mean maximum temperatures.

It is evident from the data on growth of grafts the season of grafting has significantly influence the growth of grafts. The grafts obtained from May grafting recorded the highest scion extension growth of 12.34 cm and the maximum

Table 1. Initial success, final success and growth of sapota softwood grafts as influenced by the season of grating

Month (Treatment)	Initial Success		Final Success		Scion extension growth (cm)	Number of leaves per graft
	Number	Per cent	Number	Per cent		
January	2	6.67 (9.23)	1	3.3 (6.52)	3.60	1.33
February	2	6.67 (9.23)	2	6.67 (9.23)	3.60	1.50
March	13	43.33 (41.15)	10	33.33 (35.22)	11.30	4.67
April	18	60.00 (50.85)	16	53.33 (46.92)	12.17	4.58
May	21	70.00 (61.22)	19	63.33 (52.78)	12.34	5.25
June	17	56.67 (46.92)	15	50.00 (45.00)	11.79	5.08
July	15	50.00 (45.00)	12	40.00 (39.23)	11.05	4.00
August	12	40.00 (39.23)	9	30.00 (33.00)	11.41	4.25
September	4	13.33 (17.89)	3	10.00 (15.19)	7.41	2.50
October	3	10.00 (15.19)	1	3.33 (6.52)	3.76	1.25
November	2	6.67 (9.23)	1	3.33 (6.52)	3.78	1.08
December	0	0.00 (0.57)	0	0.00 (0.57)	0.00	0.00
S.E.m±		(5.35)		(4.76)	2.23	0.81
C.D. at 5%		(15.69)		(13.97)	6.54	2.37

Data in parenthesis are angular transformed values.

Table 2. Monthly meteorological data for the year 1991 and 1992 recorded at the meteorological observatory Agricultural College, Dharwad (Karnataka)

Month	Rain fall (mm)		Temperature(C)				Relative Humidity (%)	
			Maximum		Manimum		1991	1992
	1991	1992	1991	1992	1991	1992		
January	0.00	0.00	31.00	29.40	14.50	12.70	78.00	81.00
February	0.00	0.00	33.50	32.00	15.40	15.90	75.00	75.00
March	0.00	0.00	36.51	36.10	19.36	19.30	68.00	67.00
April	87.00	18.10	35.90	37.00	21.20	20.80	64.00	65.00
May	151.10	81.40	36.30	35.30	20.90	20.80	65.00	64.00
June	344.50	181.50	29.30	29.90	21.10	20.60	82.00	64.00
July	160.50	-	25.40	-	20.60	-	92.00	-
August	122.20	-	25.80	-	20.30	-	91.00	-
September	89.80	-	29.10	-	19.80	-	82.00	-
October	125.60	-	29.70	-	19.40	-	81.00	-
November	3.40	-	29.00	-	16.10	-	82.00	-
December	0.00	-	28.50	-	13.80	-	82.00	-
Total 1084.10								

number of leaves (5.25 leaves/graft), followed by April (12.17 cm and 4.58 leaves/graft) and June (11.79 cm and 5.08 leaves/graft). Similar results were also obtained in sapota by Pujari and Magdum (1991). In the present investigations, the higher cell activity and better sprouting resulting in more number of eaves and

increased height of scion extension growth in case of grafts prepared during May month may be the reason for better growth of grafts.

The growth of grafts prepared during the month of January, February, September, October and November recorded the poor growth. Similar results were also reported by

Gunjate and Limaye (1978) in Cashew. During these months the low temperature and dry weather conditions (Table 2) might have resulted in the poor growth of grafts.

From the above results it can be concluded that, May is the best month of softwood grafting of sapota to get higher success and better growth of grafts.

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