

STONE GRAFTING IN CASHEW

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INTRODUCTION

Several techniques of vegetative propagation have been tried to propagate Cashew by vegetative means with varied degrees of success under different agro-climatic situations. Encouraged by the results obtained with stone grafting in mango in the Konkon region of the west coast of India (Bhan *et al.* 1. Majumdar and Rathore, 2 and 3) the scope for extending the technique to propagate cashew was studied at CPCRI Sub-Station, Santhigodu in 1979. The results achieved are presented in this paper.

MATERIAL AND METHODS

Cashew seeds were sown in alkathene containers to obtain root stocks for grafting at close intervals. In all, 25 weekly sowings were made to secure 500 seedlings. Graftings were done commencing from June and continued upto the last week of November 1979. Seedlings of 8-10 cm. tender purplish growth (30-35 days from sowing) were used as mini root stocks for grafting by two methods. In one method, the succulent shoot was sliced off in a slanting manner, 4-5 cm. away from the connective of cotyledons and a corresponding cut was made on the scion to match the cambial layers of both the stock and the scion for union to take place. The joint was wrapped with a plastic ribbon and kept in shade for further healing. The method is akin to simple whip grafting (Fig.1). In the second method, a transverse cut was given, 4-5 cm. above the cotyledons and a cleft was made in the middle of the root stock with a sharp knife. The scion was trimmed to a wedge shape by giving slanting cuts on either side and carefully driven into the cleft. On matching the cambial layers of both the stock and the scion, the joint was fastened with a plastic ribbon for joint to take place (Fig. 2).

In either case of grafting, pre-cured dormant terminal shoots of previous season's growth were chosen as scion material from a single accession. The successful grafts were re-set in polybags of larger size (30 × 20 cm) filled with two parts of compost and one part each of soil and sand for further nourishment. Details of graftings done month wise and percentage success secured in each method and meteorological data recorded during the period of grafting are furnished in Table 1.

RESULTS AND DISCUSSION

A maximum success of 30 per cent was obtained with stone grafting (cleft method) in July closely followed by August with 28 per cent, as against 20 and 22 per cent of success secured by whip method during the same period. A gradual decline in the success (5-15 per cent) was recorded during September and November as could

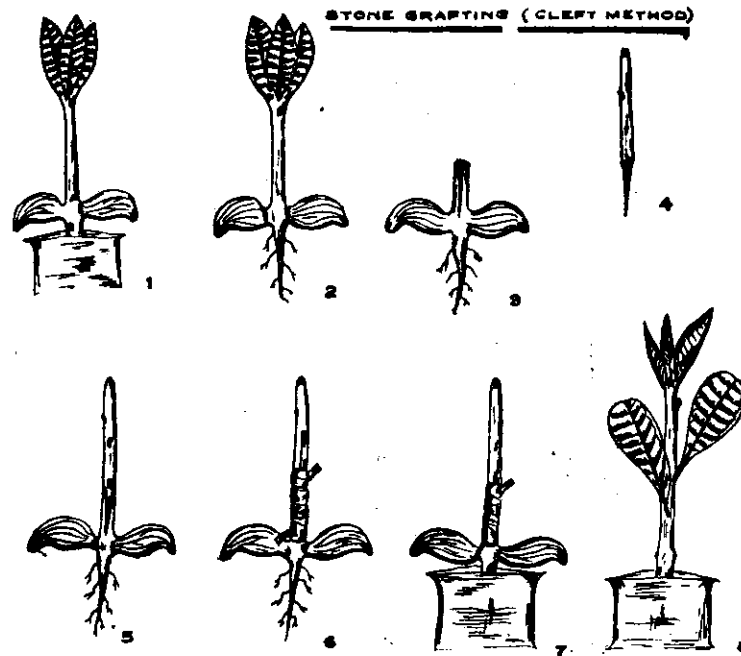


Fig. 1. A. Stone grafting (Cleft method) 30-35 days old cashew seedling raised in containers 2. Seedling taken out for grafting 3. Plumule growth transversely cut and cleft made in the centre 4. Pre-cured scion stick trimmed to a wedge shape 5. Scion fitted in to the cleft of stock 6. Stock and scion joint fastened with a plastic ribbon 7. Grafted seedling re-set in a larger container 8. Stone graft after removal of plastic ribbon.

be seen from the Table 1. Fairly distributed rainfall with high humidity and heavy precipitation registered during June, July and August months might have contributed for better success than in September, October and November months, as observed from the weather data recorded. No significant difference was found between the two different methods adopted in stone grafting of cashew.

Stone grafting, although easy to perform requires patience and dexterity, especially in Cashew where handling of seedlings for grafting with a mature scion stick may pose little difficulty while matching the cambial regions of a tender root stock with that of a mature scion. Further, care is to be bestowed to protect the grafts against fungal infection till they make sufficient growth for planting, in the field. However, the scope for further increase in success with stone grafting is being investigated.

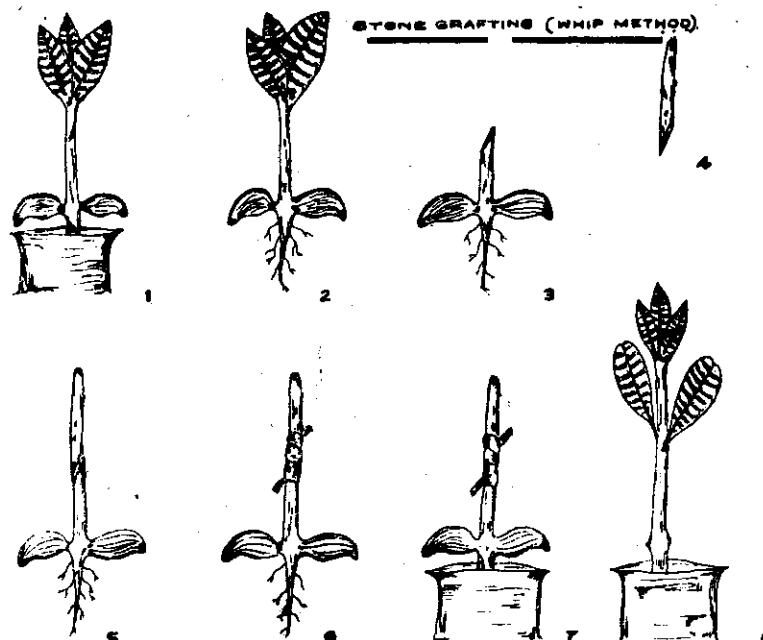


Fig. 2. B. Stone grafting (whip method) 1. Cashew seedling (30-35 days old) 2. Seedling taken out for grafting 3. Seedling given a slanting cut just above the joint of cotyledons 4. Slanting cut given to the scion, similar to the cut made on stock 5. Stock and scion joined together to match the cambial region 6. Graft joint fastened with a plastic ribbon 7. Graft reset in plastic container 8. A successful stone graft.

TABLE I
Success in propagation of cashew by two different methods of stone grafting and meteorological observation during June-November 1979

Month	No. of emerging seedlings grafted	Percentage success		Meteorological observations				Relative humidity (%)
		Cleft method	Whip method	Rainfall (mm)	No. of rainy days	Temperature °C		
						Maximum	Minimum	
June	80	20.0	10.0	841.2	19	37.0	26.4	85.3
July	80	30.0	20.0	1168.5	27	30.7	23.9	90.3
August	100	28.0	22.0	528.0	21	30.6	24.5	85.5
September	80	15.0	10.0	300.4	13	33.0	24.5	84.7
October	80	10.0	10.0	222.4	14	35.5	24.5	77.7
November	80	12.5	5.0	223.4	9	34.3	24.5	79.9

The difference between the means of the two methods was not significant.

SUMMARY

A maximum success of 30 per cent was secured with stone grafting in July when the precipitation and relative humidity were high. Stone grafting done in two different methods (cleft and whip method) did not show any significant difference between the two methods during the period of the trial.

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