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"SOFT-WOOD GRAFTING"—A NEW TECHNIQUE FOR HARD WOOD PLANTS

STONE-grafting also known as bench grafting of mango gives nearly hundred per cent success when it is placed in pot and reared in nursery conditions by providing protection against rain and heat[3,4,5]. However stone grafting of mango *in-situ* under field condition and also stone-grafted plants when placed immediately in the ground for rearing gave a success of 12·3% only in the trials conducted at the various research stations of Gujarat during 1973.

Soft-wood grafting of mango on, *in-situ* grown (one year or more old) mango stocks tried during the 1972 and 1973 at the Anand Campus of Gujarat Agricultural University gave nearly 100% success. In this technique, all the leaves on the stock plants were removed immediately after grafting[1]. Though the grafting method gave a very high perentage of success, the survival through summer, nine months later, was rather poor. The technique was therefore modified during 1974 and 1975 and as a result it is now possible to graft and establish the plant with 100% success by Soft-wood technique *in-situ* wherein all the leaves on stock plants are retained[2].

The modified technique consists of raising a root stock *in-situ* for one year or more and grafting by wedge method at the site of linearly developing terminal new growth of stock, having bronze coloured leaves and stem. The Scion wood to be used should be defoliated 10 days prior to the grafting and having the same thickness as that of terminal shoot. The graft should be secured firmly using 1·5 cm wide and 45 cm long, 200 gauge polythene strip.

Having obtained 100% success by *in-situ* soft-wood grafting technique in mango, the technique was tried under feeler trial on a few root stocks of some of the fruit plants of one year old and also on large grown-up trees for top working during 1975 and 1976 at the Anand Campus as well as on cultivators' field. The results obtained are given in Table I.

It has also been demonstrated at the campus and in the fields of cultivators that grown up trees of mango, aonla, rayan, etc., can most easily be converted into any choice variety by periodically dehorning the main limbs of the tree, allowing new soft-shoots to produce and hence grafting these shoots by soft-wood grafting technique.

It is hoped that, this technique, now named as "Soft-Wood grafting" would solve the problems of vegetative propagation and the establishment of the most of the tropical and sub-tropical plants.

TABLE I

Sr. No.	Name of fruit plant	Number of grafts prepared	Number of successful grafts	Percentage of success
1.	Aonla (*Phyllanthus emblica* Linn.)	90	66	73·3
2.	*Cashewnut (*Anarcardium occidental*)	7	5	71·4
3.	Guava (*Psidium guajava* L.)	294	207	70·7
4.	*Jack fruit (*Artocarpus heterophyllus*)	6	2	33·3
5.	Phalsa (*Grewia asiatica*)	67	67	100·0
6.	Sapota (*Achras sapota* L.) on Rayan or Khirnee (*Manikhera hexandra*) root-stock	72	66	91·6

* Only limited number could be prepared as these are rare fruit plants of the tract.

The author feels that the same technique of soft-wood grafting with necessary modification in defoliation period and the period for the grafting during the year depending upon the region if tried on tropical crops like nutmeg, clove, coffee, durian, langsat, loquat, litchi, mangosteen, rambutan, avocado, etc., and temperate fruit crops like apple, pear, peach, plum, almond, cherry, apricot, etc., holds the prospects of yielding encouraging results.

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1. Amin, R.S., *Haryana J. Hort. Sci.*, 1974, 3 (3 and 4), 160.
2. —, *Ind. J. Hort.*, (In Press.)
3. Bhan, K. C., Sammaddar, H. N. and Yadav, P. S., *Trop. Agri. Trin.*, 1969, 46, 247.
4. Majumdar, P. K. and Rathode, D. S., *Indian Hort.*, 1970, 14 (2), 11.
5. Patel, M. H. and Amin, R. S., *Ind. J. Hort.*, 1976, 33 (2), 156.