

## Effect of scion stick storage on growth and success softwood grafts of sapota cv. KALIPATTI

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### ABSTRACT

The experiment was conducted at Fruit Research Station, Navsari Agricultural University, Gandevi. The investigation comprising six treatment combinations of three wrapping materials and two storage conditions was conducted in Completely Randomized Design (CRD) in Factorial concept. The maximum sprouting and minimum days required for leaf emergence were obtained when softwood grafting made with scion sticks stored after wrapping in newspaper and sealing in perforated polythene bag ( $W_3$ ). Consequently, the maximum growth of grafts in terms of height, girth and total number of leaves with maximum success were also observed in the same treatment. The highest sprouting, success and growth of sapota grafts received when grafts made with scion sticks stored at room temperature condition ( $C_2$ ) as compared to refrigerator condition.

**Key words :** Sapota, Softwood grafting, Scion sticks, Storage, Spouting, Success, Growth

In recent years, sapota [*Manilkara achras* (Mill) Fosberg] attracted the several cultivators in south Gujarat region. However, one of the most important bottlenecks in the rapid expansion of sapota plantation is the shortage of quality planting material (grafts) in required numbers at cheaper rate. It can be propagated by seed and vegetative methods viz., inarch grafting, softwood grafting, budding and air layering. But commercially softwood grafting and inarch grafting methods are presently practiced. The approach grafting and air layering methods have certain limitations and cannot meet the increased demand. However, approach grafting is cumbersome and more expensive, rate of multiplication is slow. There is limited root system, and short life span in air layered graft as compared to approach graft and softwood graft plant. Patil *et al.* (1991) as well as Pujari and Magdum (1991) tried the softwood method of grafting in sapota which is easy to operate, less expensive and can produced large numbers of grafts in short time and in small place. Moreover, transportation of bud sticks from one place to another is an economic proposition as transportation of whole plant is costly and liable to be damaged in transit. Therefore, with a view to standardize the practices for storing scion sticks in different wrapping materials and different storage conditions for dispatching to various destinations with improving the success percentage and reducing the mortality of grafts through "softwood grafting of sapota".

### MATERIALS AND METHODS

An experiment comprising of six (scion stick storage)

treatment combinations having two storage conditions and three wrapping materials which were stored for three days (Pampanna and Sulikeri, 2001). It was laid out in Completely Randomized Design (CRD) with factorial concept having four repetitions. Two storage conditions consisting refrigerator condition ( $C_1$ ) and room temperature condition ( $C_2$ ) and three wrapping materials were tried viz., banana dry sheath ( $W_1$ ), wrapping in sphagnum moss and sealing in moist gunny bag ( $W_2$ ) and wrapping in newspaper and sealing in perforated polythene bag ( $W_3$ ) of scion storage after detachment from mother tree were tried. Khirnee or rayan [*Manilkara hexandra* (Roxb) Dub] seedlings of one year age raised in polythene bags of 13 x 10 cm size were used as a rootstock for sapota grafts. The mature healthy terminal, vigorous and 3-4 month old shoots previously defoliated (10 days before) were selected as scion sticks for grafting. The sapota grafts were prepared during the months of July-August, 2004. All the observations were taken at six months after grafting except days required to leaf emergence.

### RESULTS AND DISCUSSION

The results obtained from the present investigation are presented below:

#### *Sprouting of grafts (%)*:

Among three wrapping materials, grafting made with scion sticks stored after wrapping in newspaper and sealing in perforated polythene bag ( $W_3$ ) recorded maximum sprouting percentage of sapota grafts which was at par with treatment  $W_1$  (banana dry sheath) (Table