

## Effect of season on success of softwood grafting in sapota

R.S. MASKE, A.B. KAMBLE AND B.S. PANDURE

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See end of the article for authors' affiliations

Correspondence to:

**B.S. PANDURE**

Department of Horticulture  
Mahatma Phule Krishi  
Vidyapeeth, Rahuri,  
AHMEDNAGAR (M.S.)  
INDIA

### ABSTRACT

Sapota is mainly propagated by inarch grafting. To meet the greater demand of grafts and considering the limitation in propagation of sapota by inarch grafting, experiment was undertaken to explore the possibility of softwood grafting. The present study was carried out at Mahatma Phule Krishi Vidyapeeth, Rahuri (M.S.). Softwood grafting was tried at monthly interval commencing from 15<sup>th</sup> January to 15<sup>th</sup> December, 2006 on 1 to 2<sup>1/2</sup> years age of root stocks. The result indicated that significant higher success in grafting was observed in the month of August precured scion (100%) and it was at par with without cured scion (96.67%). There was very poor success when grafting was performed from 15<sup>th</sup> November to 15<sup>th</sup> April. The use of precured scion stick recorded cent per cent initial success and final survival percentage (90 %) .

**Key words :** Grafting, Rootstock, Sprouting, Scion

Sapota (*Manilkarna archas* Mill) is one of the important fruit crop. It is adopted to varied soil climatic condition. The states that are growing sapota on a commercial scale in India are Maharashtra, Gujarat, Andhra Pradesh, Karnataka, Tamil Nadu, Uttar Pradesh, West Bengal and parts of Punjab and Haryana. Total area under sapota in India is about 84,000 ha with production of 9.13 lakh MT (Anon., 2006). In Maharashtra, area under sapota is about 56,896 ha with production of 2,05,360 MT and productivity of 3.60 MT/ha (Anon., 2007).

In sapota, various methods of propagation have been practiced with considerable success. Seasonal influence and management factor play important role in success of multiplication. Budding, air layering, approach grafting and softwood grafting are the methods of propagation of sapota. It does not strike root easily by air layering, hence, they have to be propagated by grafting. The different root stocks used as sapota seedling are khirni or Rayon or Pala, Adams apple, Mahua, Mee tree, Star apple and miracular fruits of which khirni (*Manilkarna hezandra*) has been found most reliable rootstock for sapota (Bose *et al.*, 2002). Propagation by approach grafting takes comparatively longer time. Hence, it necessitates to restore into softwood grafting which is simple, economic and can give considerable percentage of successes.

### MATERIALS AND METHODS

The study was carried out in the nursery block of the Department of Horticulture, Mahatma Phule Krishi Vidyapeeth, Rahuri during the year 2006. The seedling of 1 to 2<sup>1/2</sup> year old khirni having thickness of 6 to 8 mm, raised in polybags were used as rootstock. The experiment was laid out in Completely Randomized Design with

unequal number of replications. Softwood grafting was carried out at monthly intervals from 15<sup>th</sup> January to 15<sup>th</sup> December, 2006. Ten rootstock seedlings were grafted in each treatment at a time.

The stock seedlings of khirni were decapitated leaving about 30 to 45 cm stem. The top was split by grafting knife to a length of about 5 cm. Scion shoot having nearly same diameter and length, with or without precuring (as per treatment) was mended to about 4 to 4.5 cm in wedge keeping some bark on both sides and fitted in split of stem and secured firmly by polythene strip of 250 gauge thickness. Leaves on stock plant below grafted portion were retained. Initial grafting success was recorded at 45 days after grafting operation. The sprouting of grafted scions was considered as initial success and the sprouting percentage (initial success) was calculated and presented. Survival of softwood grafts was recorded at 90 days after grafting operation as final survival.

### RESULTS AND DISCUSSION

The data regarding initial success per cent of sapota grafts at 45 days after grafting as influenced by the time of grafting and curing treatment are presented in Table 1 and 2. All the grafts made in the month of August with precured scion stick were successful followed by grafts of May (83.33%), June (80.00%) and July (76.67%) which were at par with August grafting. Minimum initial success of grafts (56.67%) with precured scion sticks was recorded during October which was statistically inferior. Initial successes of the grafts without cured scion stick was recorded maximum (96.67%) during August which was significantly superior. It was at par with grafting in May (76.67%). Initial success of the grafts without cured