

Short Communication

Effect of Age of Rootstock on Success of Bud Grafting in Wood Apple (*Feronia limonia* (L.) Swingle)

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Wood apple (*Feronia limonia* (L.) Swingle) or elephant apple is one of the very hardy trees grown in arid and semi-arid regions of the country. It has both medicinal and industrial values. It is an excellent fruit for jelly making as it contains 2.66% pectin (Roy and Mazumdar, 1989). The wood is used for oil crushers, agricultural implements and other purposes. It is generally propagated by seeds. The grafted plants tend to be dwarf, precocious and prolific yielders. The traditional methods like budding and inarch grafting require 9 to 12 months for the rootstock to come to buddable size and 18 to 24 months to become ready for transplanting. Hence in present study attempt is made to prepare grafts within eight months by adopting the bud grafting.

The seeds were sown in the month of April in polybags (22.5 x 15 cm, 200 gauge) filled with FYM:sand (1:1) with a pinch of blitox. The bud grafting was done on 45, 60, 75 and 90-day-old seedling rootstock having diameter of 0.13 to 0.15 cm, 0.17 to 0.19 cm, 0.20 to 0.22 cm and 0.23 to 0.26 cm, respectively. The rootstock in the polythene bags was decapitated with the surgical blade and 1 to 2 cm deep split was made. A bud (1 to 2 cm length

and 1 to 2 mm width) of previous season's growth was inserted in the split. The micropipette cap (0-200 μ l) was inserted on the grafted portion. After sprouting of the bud, the micropipette cap was removed.

The experiment was conducted at MPKV, Rahuri, in the year 2003 under 75% shade net in the randomized block design with five replications and four treatments. The observations on the per cent bud take, number of days required for sprouting, scion sprout length, and number of leaves per graft were recorded after 60 days and final survival after 120 days of grafting.

Bud grafting success was significantly influenced by the rootstock age (Table 1). Early bud take was observed when the bud-grafting was done on 75 day (10.73 days) and 90 day (11.00 days) old rootstock, which was significantly superior over others. The more number of days required for bud sprouting in 45 and 60-day-old rootstocks may be due to the succulent nature of stock and thus requiring more period for callus formation. The per cent bud take on 90-day-old rootstock was significantly higher (99.33%) than the rest of rootstocks. Bezerra *et al.* (1999), while working on the effect of the age of rootstock

Table 1. Effect of age of rootstocks on bud grafting in wood apple

Age of rootstocks	Days for bud take	% bud take	Sprout length of scion after 60 days (cm)	No. of leaves per graft after 60 days	Final survival after 120 days
1.6 month	17.60	64.00 (53.21)	8.78	6.46	49.3 (44.61)
2 month	13.53	89.33 (76.44)	10.95	8.93	75.3 (56.54)
2.6 month	10.73	97.33 (94.31)	14.39	12.46	82.6 (65.90)
3 month	11.00	99.34 (96.20)	19.60	17.40	90.6 (77.52)
Mean	13.21	87.50 (80.04)	13.43	11.31	74.5 (61.14)
S.E.±	0.259	1.686	0.259	0.277	1.844
CD at 5%	0.740	6.427	0.739	0.790	5.262

Figures in parentheses are angular transformed values.

on propagation of Surinam cherry (*Eugenia uniflora* L.) reported that, cleft or whip grafting done on to 9 or 12-month-old rootstocks resulted in a high percentage bud take (77.5%) than 6-month-old rootstock.

The sprout length as well as number of the leaves per graft recorded after 60 days, were also maximum in 3-month-old rootstock (19.6 cm and 17.40, respectively), which was significantly superior over the rest of the rootstocks. The final survival of grafts, as observed after 120 days, was found to be maximum (90.67%) in the 3-month-old rootstock, which was also significantly superior to 2½ month (82.67%), 2 month (75.33%) and 1½ month (49.33%) old rootstock. These results are in conformity with those of Satisha *et al.* (1997) who reported that, in tamarind, the grafting success was significantly higher for 6 and 9-month-old rootstocks (69-72%) than 3, 12, 15 and 18-month-old rootstock. Similarly, Ramirez *et al.* (1986) reported

that in tamarind the percentage bud take was best in different grafting methods on rootstocks with a diameter of 0.66 to 0.75 cm at the graft union.

The bud grafting on 3-month-old seedling rootstock in June-July is suggested for quick multiplication of wood apple.

References

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