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Soft wood grafting of *Garcinia xanthochymus* (Hook. f.) [Syn. *G. tinctoria* (Wight)]

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Abstract

Soft wood grafting of *Garcinia xanthochymus* was standardized on 9 month old rootstocks of the same species with 90% success. The grafted plants flowered within 3 years after grafting and set fruits in the fourth year, while seed propagated plants did not flower even 6½ years after planting in the field.

Keywords: *Garcinia xanthochymus,* soft wood grafting.

The genus *Garcinia* (Family : Clusiaceae) has gained commercial prominence recently due to the anti-obesity properties attributed to the herbal extract obtained from the fruits (Krishnamoorthy *et al*. 2004). *Garcinia xanthochymus* (Hook. f.) [Syn. *G. tinctoria* (Wight)] is an important under-utilized crop distributed in the lower hills of Eastern Himalayas, Western Ghats and Andaman Islands (Rema & Krishnamoorthy 2000). It is dioecious and the seed propagated plant comes to bearing in 8–10 years (Varghese & Thomas 2000). The fruits of *G. xanthochymus* are highly acidic and are used to flavour curries. The dried fruits and leaves have medicinal properties. The present paper deals with standardization of soft wood grafting in *G. xathochymus* and preliminary observations on its performance in the field.

Fifty scions were collected from a high yielding *G. xanthochymus* tree in a farmer's plot at Kayamkulam (Alleppey District, Kerala) and soft wood grafting on 9 month old *G. xanthochymus* seedlings was done during July-August 1998 at IISR Experimental Farm, Peruvannamuzhi. A success of 90% was obtained 3 months after grafting.

Ten six-month old seedlings of *G. xanthochymus*, raised from seeds collected from District Agricultural Farm, Taliparamba (Kerala), were planted in a row at 3 m spacing at IISR Experimental Farm, Peruvannamuzhi. *In situ* grafting was done on five seed propagated plants during July 1998, using the soft wood grafting technique to study the field performance of seed propagated plants vs. *in situ* grafts. Vegetative and reproductive characters were recorded.

In situ grafted plants had a dwarf and compact canopy, as compared to seed propagated plants (Table 1). *In situ* grafts flowered during the 2nd-3rd year after grafting and started bearing in the 4th year whereas, seed-propagated plants did not flower even 6½ years after planting.

The mean weight of fruits of grafted plants was 47 g, the mean length 4.4 cm and diameter 4.6 cm. The length of peduncle was 4.2

Table 1. Vegetative characters of 6½ year old grafts and seed-propagated plants of *Garcinia xanthochymus*

Character	Plant type	Mean (cm)	SD	SE	CV (%)
Height	Seedling	276.0	72.06	29.42	26.11
	graft	184.0	17.72	7.23	9.63
Spread of canopy	Seedling	195.0	49.89	20.37	25.58
	graft	164.0	28.53	11.64	17.39
Girth of main stem	Seedling	6.0	1.53	0.62	25.58
	graft	3.9	1.35	0.55	34.45

Table 2. Fruit and seed characters of *Garcinia xanthochymus* grafts

Character	Minimum	Maximum	Mean	SD
Weight of fruit (g)	35.0	54.0	47.25	8.38
Length of fruit (cm)	3.9	4.7	4.42	0.36
Width of fruit (cm)	4.0	5.0	4.62	0.48
No. of sepals	5.0	5.0	5.00	0.00
Length of peduncle (cm)	3.9	4.5	4.17	0.28
Length of seeds (cm)	2.4	2.7	2.52	0.15
Width of seeds (cm)	1.3	1.8	1.52	0.26

cm, calyx persistent and 5 in number, seeds 1 to 5 in a fruit, brown, about 2.5 cm in length and 1.5 cm in width and embedded in bright orange yellow pulp (Table 2).

This is the first report of soft wood grafting of *G. xanthochymus* on its own rootstock. The early bearing habit of the grafts when compared to plants raised from seedlings was also established.

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