

# THE ISOLATED SEED GARDEN AMBAKELLE

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Planting of superior quality, high-yielding seedlings is important for the future of the coconut industry. A healthy, well-developed seedling will grow vigorously and will give high yields for a relatively long period of time.

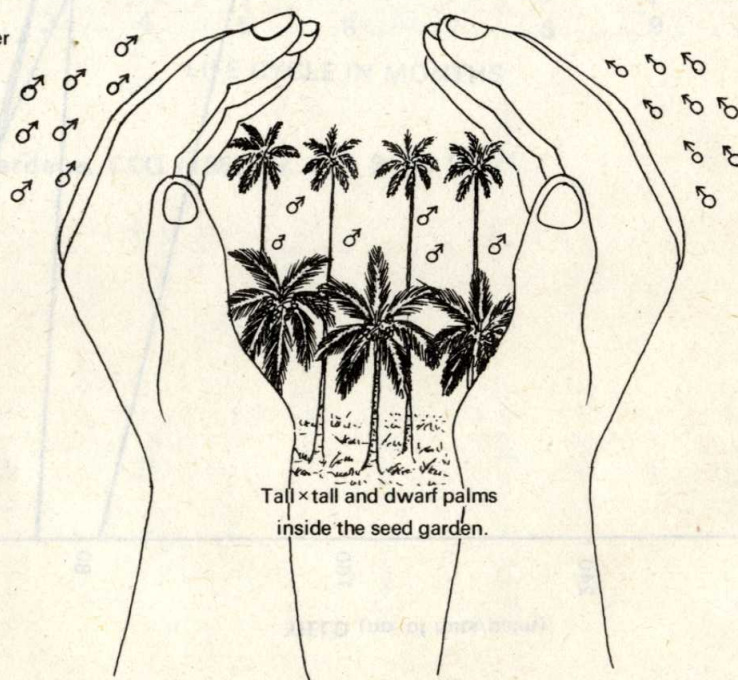
In natural pollination, the female flowers are pollinated by pollen from a variety of trees and the resulting nuts may not have uniform characteristics. Improved seednuts could be obtained by avoiding natural pollination but by carefully controlling it. The best method to obtain improved seedlings is by using seednuts derived from hand-pollination. However, the entire requirement of seednuts for Sri Lanka cannot be obtained by hand-pollination. The next best available method is to obtain seednuts by controlled pollination. The Isolated Seed Garden at Ambakelle was established in 1955 in the Puttalam District with this objective. This

seed garden, located 15 miles north of Chilaw, is 344 ac in extent and is located in the centre of a jungle of 1127 ac. Of the 344 acres, 250 acres are planted to the tall variety while the rest is planted to the dwarf variety. Encircling the coconut cultivated area is a 495 m (25 chains) jungle barrier. This jungle barrier is found to prevent the entry of pollen to the seed garden from coconut trees in the villages surrounding the jungle.

The seed garden is located in the Intermediate Dry Zone, receiving an annual rainfall of 1200–1300 mm. The water table is at 6 m. About 75% of the land has loamy soil with sand and changes to sandy loam in certain areas.

The seed garden is divided into 14 fields of which 7 fields are planted entirely to the tall variety while one field is planted entirely to the

Pollen outside the jungle barrier (the jungle barrier prevents the entry of this pollen to the seed garden).



dwarf variety. In the remaining fields both tall and dwarf varieties are planted in a definite proportion. The tall trees in the seed garden are the first generation from selected mother palms. The dwarf fields contain dwarf yellow and dwarf green forms.

The progress of planting in this seed garden is shown in the table below:

Field No.	Variety	Date Planted	Area (ac)	Bearing Palms
01	Tall×Tall	1955 December	4½	239
02	Tall×Tall	1956 November	4	251
03	Tall×Tall	1956 November	4	269
04	Tall×Tall	1956 November 1957 November	34	1894
05	Dwarf Green	1959 November	07	129
06	Tall×Tall	1961 November	20	872
07	Tall×Tall	1961 November	20	693
08	Tall×Tall	1962 June & November	20	877
09	Tall×Tall	1966 November	25	612
	Dwarf Green			268
10A	Tall×Tall			183
	Dwarf Green	1972 November	25	103
	Dwarf Yellow			847
10B	Tall×Tall			132
	Dwarf Green	1973 May	25	328
	Dwarf Yellow			317
11A*	Tall×Tall	1985 December	30	—
11B*	Tall×Tall	1985 December	30	—
12*	Tall×Tall	1985 April	22	—
13*	Tall×Tall	1985 September	37	—
14	Tall×Tall	1974 November	37	291
	Dwarf Green			1168

\*Newly planted fields.

The male flowers in the inflorescences of dwarf trees are removed by specially trained labourers, before they open. This is called emasculation. As a result, all pollen from dwarf trees are removed from the seed garden. Thus the female flowers of dwarf trees will have to be invariably pollinated by pollen from tall trees, where inflorescences are allowed to open naturally. The improved variety dwarf×tall (CRIC 65) is produced in this manner. As no pollen enters the seed garden from outside, the female flowers of tall×tall trees are pollinated by pollen from tall×tall trees. The improved variety tall×tall (CRIC 60) is produced in this manner.

An important feature in this seed garden is its ability to produce two improved varieties. Although pollination inside the seed garden occurs naturally, it is termed controlled pollination.

In the Isolated Seed Garden, there is a collection of trees of the tall variety which give good yields under both favourable and unfavourable

climatic and environmental conditions. These trees are called "Ambakelle Special" and have shown to be drought tolerant. The seednuts from these trees are presently used for planting in the new seed gardens. Also, some trees, selected further from this group of trees, are used to collect pollen.

The major portion of the yield from the Isolated Seed Garden is used as seednuts while a part is used for research purposes. According to the yield data of 1985,  $\frac{1}{5}$  of the national requirement of seednuts had been supplied from the Isolated Seed Garden. The yields from tall×tall variety is used entirely as seednuts locally while some of the dwarf×tall seednuts are exported.

Note: This is a translation of an article written in Sinhala.