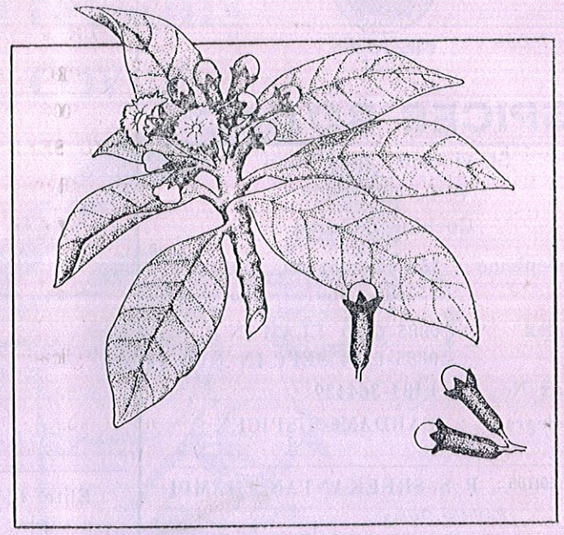
ELITE CLOVE TREES

—a survey report



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Clove of commerce, is the dry and fully grown, but unopened aromatic flower buds of clove tree. Botanically, clove is Eugenia caryophyllus (sprengel) Bullock & Harrison, belonging to Myrtaceae. The clove is indigenous to Moluccas (Indonesia). It is a beautiful tree, which can live for about one hundred years. Islands of Zanziber and Pemba, now parts of Tanzania are the world's largest producers of clove. In India, clove is grown mainly on the eastern slope of Western Ghats in Kanyakumari, Kuttalam (Kattabomman District), Palani and Kodai Hills (Quide Milleth District), Yercaud (Salem District) and Gudalur, Kallar and Burliar (Nilgiris District) of Tamil Nadu besides to a limited extent in Quilon and Trivandrum districts of Kerala.

Clove plantations in India originated from a few seedlings obtained from Mauritius in the later half of 19th century. The present production of clove in India (1300 tonnes) is far below our requirements and we import from other countries. To reduce our import and to become self sufficient, it is necessary to step up production considerably, for which it is essential to make available elite planting materials to growers at reasonable prices. There is a lot of scope for increasing the area under clove, particularly in Eastern and Western Ghats of South India, North East India and Andaman Islands. Clove, being perennial in nature, initial selection of planting material is an important factor that determines its future production. As such, raising a healthy nursery becomes an essential prerequisite to produce quality planting materials.

Clove is generally raised from seeds. Seeds are collected from fully ripe fruits, known popularly as "mother of clove". Ripe fruits from trees could be collected during July – August, and only fully developed and uniform seeds with a pink radicle are selected for sowing. Seeds should be of fresh olive green colour with little or no red discolouration, should be free from boring insects and tip of the radicles not blackened. Trees selected for seed purpose should be healthy ones, bearing regularly and heavily with suitable height and shape for harvesting. A single parent tree produces 5000 good seeds during one year.

To select high yielding elite clove trees for seed collection a survey was undertaken in the Kanyakumari, Nilgiris and Salem districts of Tamil Nadu (Table-1).

The clove estates surveyed in Tamil Nadu are located in the Ashamboo Hills of Kanyakumari district Shevroy Hills (Yercaud) of Salem district and Kallar and Burliar regions of the Nilgiris district. The clove trees selected for seed collection are located in the Ashamboo Hills, which are the Southernmost hills of our country and containing the oldest clove trees in India. The estates herein are densely populated with evergreen perennial trees.

A
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Table 2 indicates the altitude, longitude, and weather parameters of some of the clove growing tracts.

Based on bearing habit, canopy size, visual scoring of the bearing, and yield records wherever maintained and on enquiry with the estate owners and the people working in the estates, number of flower buds/bunch etc., only the first three estates (Table 1) surveyed could be chosen for selection of elite trees, as considerable number of healthy and big trees are available in these estates only. While clove is raised as a pure crop in Carimony and Caramalagiri Estates, in Black rock estates, clove is mix-cropped with coffee. A total of 35 elite trees was identified in these three estates.

List of estates/predominant areas, where clove is grown to a considerable extent. Table 1.

STATE	DISTRICTS	ESTATES/AREAS
A. Tamil Nadu	1. Kanyakumari	a) Carimony Estate
		b) Caramalagiri Estate
		c) Blackrock Estate
		d) Devagiri Estate
		e) Palkulam Mahalaxmi Estate
		f) Balamore Estate
		g) Pioneer Estate
		h) Mahendragiri Estate
		i) Chemmeen Estate
		k) Christian Mission Service (CMS) Estate
		l) Sea Field. Estate
	2. Qaide Milletch	Palani and Kodai Hills
	3. Nilgiris	a) Horticultural Experimental Station, Kallar
		b) Horticultural Experimental Station, Burliar
		c) Gudalur
	4. Kattabomman	Kuttalam
	5. Salem	Yercaud–msp Plantations
B. Kerala	1. Quilon	Ambanad Estate, Thenmalai
	2. Trivandrum	Merchinston Estate Ponmudi

Weather Parameters of Clove Tracts in Tamil Nadu

Table 2

DISTRICTS	CLOVE GROWING AREAS	WEATHER PARAMETRES
1. Kanyakumari	Ashamboo Hills	Av. rainfall : 200 to 250 cm equally distributed Altitude : 500 - 1000 M above MSL Temp. : Min. 17° C Max. 35° C
2. Salem	Yercaud	Av Rainfall : 110 cm/ Year Altitude : 1400 - 1500 M above MSL Temperature : Min : 10° C : Max : 30° C Latitude : 11.4° to 11.5° N Longitude : 78.50° to 78.23° E
3. Qaide Milleth	Lower Palani Hills	Altitude : 2000 M. above MSL Av Rainfall : 140 cm/ year Av. no. of rainy days : 75

The list of elite trees identified is furnisned

Table 3 List of elite trees identified

Elite Trees Numbers	Address of Estate Owners
1 - 14 (14 trees)	Sri. Kasi, Carimony Estate, 7, Jawahar Street, Ramavarmapuram, Nagarcoil (Tamil Nadu)
15 - 25 (11 trees)	Ms. Simipson, Black rock Estate, Thovala Taluk, Alakiapandipuram Village, Kanyakumari District (TN) Pin - 629 851
26-35 (10 trees)	Mr. K. E. Joseph, Caramalagiri Estate Thovala Taluk, Alakiapandipuram Village, Kanyakumari District (TN) Pin - 629 851

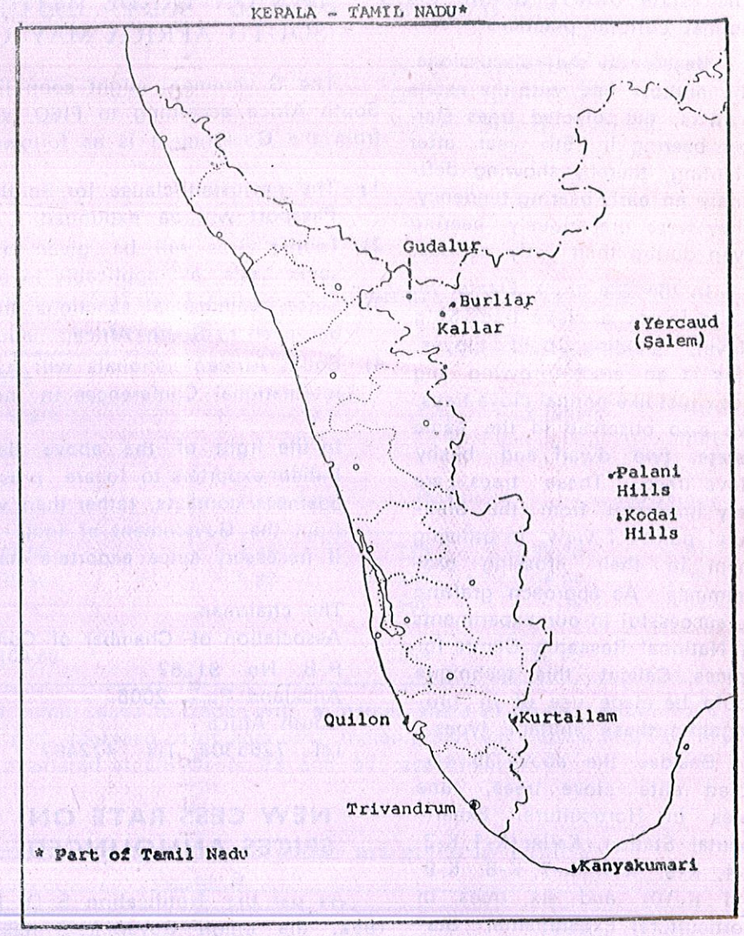
The total area of clove in each estate is about 15 to 25 hectares. The authors observed, from the records maintained at Blackrock Estate that except for three years, there was rain practically during every month of nearly the past 50 years.

The top soil in these estates is rich black and the subsoil is deep gravelly. The terrains in these estates are of varied natures such as valley, slopy as well as planes. The slopiness varies as steep slope, medium and light. They have a very good drainage facility. In slopy areas, soil conservation measures like creating platform around the trees, terracing etc., are followed. The crop is irrigated during dry periods with stream water and during the other months, rain water takes care of.

The selected elite trees in the above estates are conical in shape and fairly regular bearer. The morphological characters of selected trees are given in Table 4

There is no pest and disease problem in the selected trees

PREDOMINANT CLOVE GROWING AREAS OF KERALA - TAMIL NADU*



Morphological characters of selected elite clove trees.

Table 4

MORPHOLOGICAL CHARACTERS	ESTATES		
	Carimony	Blackrock	Caramalgiri
Age	1 - 14	15 - 25	26 - 35
Bearing habit	—	30 to 50 years old	—
Canopy size/shape	—	Regular	—
Visual scoring of bearing	—	Conical	—
Previous yield record of green cloves	—	High to very high	—
Dry ,, ,, Dry cloves	—	50 - 100 kg/tree/year	—
Flower buds/bunch	9 to 10	12.5 - 30 kg/tree/year 12 to 13	8 to 10
Size of individual flower bud	—	Medium	—

The estate owners follow the normal cultural practices

Based on the discussions, the authors had with the estate owners, the selected trees started bearing in 5th year after planting, thereby showing definitely an early bearing tendency. They were precariously bearing even during their early periods.

In the Bia krock Estate, we could locate a clove tree (King clove), yielding bold cloves. This is an erect growing big tree, just like normal clove trees. We also observed in the same estate, two dwarf and bushy clove trees These trees are very important from the breeders' point f view, in utilising them in their crossing programmes. As approach grafting is successful in our experiments at National Research Centre for Spices, Calicut, this technique could be made use of in propagating these 'mutant' types.

Besides the above 35 selected elite clove trees, nine trees in Horticultural Experimental Station, Kallar (K-1, K-3, K-4, K-5, K-6, K-7, K-8, K-9, and K-10) and six trees in Horticultural Experimental Station, Burliar were also identified as very high yielders for seed collection purposes.

Errata

In the article "Market Analysis for Spices in Japan" published in Spice India April 1992, the annual import of spices by Japan in 1981 given as 3,06,000 metric tonnes may be read as 30, 600 metric tonnes in the first paragraph.

BAN ON TRADE WITH SOUTH AFRICA MAY GO

The Government might soon lift the present ban on trade with South Africa according to FIEO sources. The information received from the Government is as follows.

1) The exclusion clause for South Africa, on an ordinary Indian Passport will be expunged.
2) Tourist visas will be given to South Africa nationals on the same basis, as applicable to other foreign tourists.
3) Since, commercial sanctions are not lifted business visas would be given to South African nationals on a case - by case basis.
4) South African nationals will hence forth be allowed to attend international Conferences in India.

In the light of the above developments F.I.E.O. has advised Indian exporters to locate prospective importers and establish business contacts, rather than waiting for formal announcement from the Government of India on lifting the trade ban Hence if necessary spice exporters may contact

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NEW CESS RATE ON SPICES ANNOUNCED

As per the Notification S. O. No. 243 (E) dated 27th March 1992, the union Government has announced a uniform rate of spices cess for the export of all the 52 spices listed in the schedule of the Spices Board Act, 1986.

Accordingly, the following rate of cess shall come into force on the 1st April 1992.

Item	Rate of cess Valorem
a) All 52 spices listed in the schedule	2 per cent
b) Not withstanding anything specified in the schedule which are in the form of Curry powders, Spice oil oleoresins and other Mixtures where spices content is predominant.	