



The Demonstration cum-Seed Production Farm for Coconut, Neriamangalam, Kerala

Dr. Remyan Goapkrishnan*

Transfer of technology from lab to land is not taken place in a way it should be. Lack of demonstration of technology often hinders the adoption of scientific management of coconut in many parts of the country. This is common both in the case of traditional as well as non traditional areas. In the traditional areas research results are not translated timely and promptly. Despite the extension machinery functioning in the country, the pace of dissemination of the technology among the farming community is so tardy.

In non traditional areas like North and North Eastern parts, coconut is a new introduction and the expansion of the crop has gained momentum with the formation of the Board. Even the nursery raising programme and supply of seedlings in these areas started with the procurement and supply of seed nuts from South India by the Seed Procurement Unit of the Board operated initially. It was therefore felt imperative to support the farmers of this region in scientific coconut cultivation. The demand for coconut seedlings in these belts took

The Coconut Development Board has established seven Demonstration-cum-Seed Production (DSP) Farms in different parts of the country with the objective of demonstrating scientific coconut cultivation and also to produce quality coconut seedlings. Indian Coconut Journal is serializing a feature on these farms from this issue onwards. The first of this series is on DSP Farm, Neriamangalam,



A view of the farm

*Deputy Director, Coconut Development Board, Kochi - 11

DSP Farm, Neriamangalam - Introductory information

a linear growth, which in turn warranted, uninterrupted supply of seedlings from government source since private nursery men did not made inroads in this sector in 1980's. Therefore the Board in its initial years gave thrust to establish Demonstration cum Seed Production Farms for coconut in different parts of the country including in non traditional states.

The Demonstration cum-Seed Production Farm for Coconut, Neriamangalam, is situated 70 km away from Kochi city in Ernakulam district, of Kerala. The extent of the Farm is 50 acres (20ha) which was alienated from the State department of Agriculture in 1991. The river 'Periyar', one of the biggest perennial rivers in Kerala is flowing along the northern boundary of the Farm which enhances the scenic beauty of the farm. The soil is fertile,

Total Area of the Farm	20 Ha
Area under Coconut	14 Ha
Year of Establishment	1991-92
Annual Rain Fall	2100-3500 mm
Temperature	23-35 Celsius
Total Plant Population	2048
Tall	702
Dwarf	1089
Exotic	135
Hybrids	20
Total	1946

laterite in type, and enriched with organic matter. It is a forest area with copious rainfall which spreads across minimum 8 months a year. Average rain fall recorded ranges from 2100 to 3500 mm with a record of 3156 mm rainfall in the last year. During the last year there were 219 rainy days. Temperature ranges from 25 to 35°C. The heavy rainfall is however often uncongenial to the crop as it invites fungal diseases like bud rot, leaf rot, leaf blight and infestation of pest like red palm

weevil. It is very difficult to maintain the palms which are attacked by pests and diseases. During the last year alone 645 palms were succumbed to disease and pest attack. Bud rot and Red palm weevil are the major problems. The management measures adopted in the farm could arrest this situation to a certain extent. Despite the fact that 94% of these affected palms were rescued, this state of affair cannot be considered as a favorable situation for the development of the farm.



Exotic BSI variety

Rain Fall During 2010-11

Month	Rain fall (mm)		No of Rainy Days	
	Last year	During the year	Last year	During the year
April	96.50	184.09	11	21
May	219.66	114.87	18	15
June	432.25	732.78	22	28
July	532.89	468.60	29	31
August	471.79	408.93	28	29
September	469.42	284.49	23	27
October	221.99	383.88	11	27
November	174.22	427.45	15	28
December	45.21	33.52	4	5

QUALITY PLANTING MATERIAL

Variety wise Plant Population (Tall & Exotic) and yield per ha.

Cultivar	Planted	Existing	Flowered	Yielding	Average Palm Yield per
West Coast Tall	637	612	373	308	53.58
Arasampatty Tall	38	37	26	26	45.23
Tiptur Tall	42	41	35	34	86.44
LO	2	2	2	2	92.00
L Micro	12	10	10	10	75.50
EXOTIC	141	135	129	124	67.02
TOTAL (Tall & Exotic)	872	837	575	504	59.26

Variety wise Plant Population (Dwarf & Hybrid) and yield per ha.

Cultivar	Planted	Existing	Flowered	Yielding	Average Yield per Palm
CGD	413	386	309	290	61.56
COD	99	94	59	50	42.98
MGD	162	154	78	78	87.41
MYD	207	197	154	149	77.88
MOD	271	258	197	171	63.25
TOTAL(DWARF)	1152	1089	797	738	66.72
D x T Hybrid	22	20	15	15	40.40

The site which was taken over in 1991 was readied for planting immediately, and the planting was done in phased manner. Initial work of this farm was started under the guidance of the then Chief Coconut Development Officer, Shri. V.T. Markose and the Senior Farm Manager, Shri. K.R. Kuttikrishnan. Since then many officers gave leadership to the development of the farm from time to time. Shri. M. Thomas Mathew, the present Chief Coconut Development Officer, Shri Vijyakumar Hallikkary, Dr. Remany Gopalakrishnan, Shri R. Jnanadevan, Shri Hema Chandra, the present Deputy Directors, Shri A.K. Nandi, the present Secretary, and Shri. Aravazhi, Assistant Director are among them. The farm is presently headed by Shri Sardar

Singh Choyal, Assistant Director. The field staff of the Board especially the Field officers played a key role in shaping the farm to the present state.

Out of the total 50 acres, coconut is planted in 35 acres. The palm population is 1946 out of which 1242 are bearing, 130 palms started flowering and the remaining are juvenile. The farm is having all varieties of coconut viz. tall, dwarf, hybrids, and exotic. There are 837 Indigenous and exotic tall cultivars like East Coast Tall (ECT), Arsikkare Tall(AT), Tiptur Tall(TT), Lakshwadeep Tall(LT), Lakshwadeep Micro(LM), Santramom, FSM, and Philippines Ordinary. Out of this 504 are bearing, 71 have started flowering and the rest are juvenile palms.



Malayan Orange Dwarf variety

There are 1089 dwarf varieties like Chowghat Green Dwarf(CGD), Chowghat Orange Dwarf(COD), Malayan Yellow Dwarf(MYD) and Malayan Orange Dwarf(MOD). Out of these 738 are bearing palms, 59 have started flowering and the balance juvenile.

The present annual harvest of the farm is 80 thousand nuts. The per ha productivity of the tall palms has reached at 59 nuts per palm and that of dwarf is 67 nuts per palm per year.

There are six harvests in a year ie., April-May, June - July, August-September, October-November, December-January and February-March. Peak harvest is received in summer months ie., April-May, December-January and February-March.

The fertile nature of the soil is congenial for both inter cropping and mixed cropping. There are coffee, nutmeg, pepper and cocoa as perennial intercrops. Tree crops like garcinia, cashew, mango, jack fruit, mangosteen and arecanut are maintained for increasing the income from the farm. Turmeric,

elephant foot yam, ginger, cowpea and banana are grown as seasonal and annual intercrops. Last year the yield from turmeric was more than 2000 kg and that from elephant-foot yam was 500 kg.

Three organic manure units are maintained with a production capacity of 40 tons. Regular production of compost by utilizing the coconut leaf waste and cowdung is carried out for application to the coconut palms and intercrops.

Production of Seedlings

One of the major objectives of the farm as mentioned earlier is the production of quality planting material in order to cater to the need of the local farmers. The DSP farm, Neriamangalam is acting as a reliable source for good quality coconut seedlings. Seed nuts for raising the nurseries are mostly collected from the mother palms available in the farm itself. Good quality nuts are selected and sown in the nursery. Consistently yielding trees with disease tolerance and having good vegetative growth



Coffee and nutmeg grown as intercrop

Productivity Trend (Nuts/Palm) (Tall & Exotic)

Cultivar	04-05	05-06	06-07	07-08	08-09	09-10	10-11
WCT	39.91	33.38	48.00	58.62	49.54	71.97	53.58
A. Patty	26.71	33.11	40.00	46.07	51.62	42.92	45.23
Tiptur Tall	51.88	63.26	63.31	68.72	66.59	94.29	86.44
LO	26.00	20.50	56.00	82.50	126.00	118.00	92.00
L Micro	67.55	80.36	99.18	85.45	96.30	160.50	75.50
Exotic	40.61	44.51	59.84	78.81	77.57	73.46	67.02
Average	42.41	46.12	61.27	70.03	78.01	73.84	59.26

are selected as mother palms.

Out of the 1089 dwarf, 383 palms are used as mother palms. 54% of the Chowghat Orange Dwarf population, 47% of Malayan Green Dwarf and 45% of Chowghat Green Dwarf population are utilized for mother palm purpose. Out of the 897 tall varieties, only 163 palms are selected as mother palms. Of this more than fifty percent are Lakshwadeep Ordinary, Lakshwadeep Micro and East Coast Tall varieties.

The farm is following stringent selection criteria in the nursery techniques. Hence the seedlings raised and supplied from this farm have yielded good results. The farm is selling quality seedlings to meet farmers' requirements. Annually the farm is producing 25000 - 30000 seedlings at present. This is going to be enhanced to one lakh during next year. The sale price of dwarf seedlings is Rs. 40/-, tall Rs. 35 and the hybrids is Rs.100/ per seedling.

The CPCRI has developed a technology for production of seedlings in the root wilt affected areas. Chowghat Green Dwarf is proved to be a cultivar which exhibits tolerance to root wilt. This characteristic is exploited for

production of hybrids by crossing with different Talls, especially with West Coast Tall. An *inter se* block of CDG and WCT is maintained here for production of hybrids in the long run.

The farm is having a good collection of Malayan Green Dwarf. The Malayan Green dwarf variety exhibits disease resistance to root wilt when compared to other varieties. The performance of this cultivar was assessed by the Central Plantation Crops Research Institute (CPCRI) for its disease tolerance and released as a recommended cultivar for planting under the name 'Kalparaksha'.

Tender nut Variety

Nowadays people are more conscious about the virtues of tender coconut water as a health drink. A drastic change is visible among the farmers in the habit of harvesting only ripe coconuts at the 12 month. The reluctance in harvesting of nuts at 5-6 month stage has become a past story. There is no immediate going back from this positive development. The message on the wonder benefits of tender coconut is percolating down to the common man too. It is now not considered merely as a thirst quenching drink

Continued on page 35



Care young palms in the initial years.

Sufficient attention will have to be paid to the young palms in the early years of growth. The planted seedlings should be shaded and irrigated properly during the summer months. Irrigation with 45 litres of water once in 4 days has been found to be satisfactory in all soil types. Provision of proper drainage is also equally important in areas subject to water logging. If planting is taken up in littoral sandy soil, application of 0.15 m³ of red earth is recommended.

The pits should be cleared of weeds periodically. Soil washed

down by the rains and covering the collar of the seedlings should also be removed. The pits should be widened every year before application of manure. The pits should be gradually filled up as the seedlings grow. The palms should be frequently examined for any insect or fungal attack and necessary remedial measures taken up promptly.

Conclusion

Under the present condition in which prevalence of relatively high proportion of old and diseased advanced unproductive trees,

limited farm resources, high labour charges and high price instability, Indian coconut industry has to meet the increasing domestic demand. Productivity of coconut gardens should be increased to the maximum potential by adopting the technologies available. Productivity of any crop depends on the quality of planting material. Hence systematic replanting and restructuring of senile unproductive as well as disease advanced plantations with high yielding varieties so as to maintain optimum sustainable planting density is essential in this changing environment.

Continued from page 24

but as a mineral drink that cures most of the diseases and lost health. Technically the liquid endosperm, tender nut water, is the most nutritious wholesome beverage that the nature has provided to the mankind. Therefore it is the responsibility of the Board that the seedlings of tender nuts are made available to the needy.

The Central Plantation Crops Research Institute has identified Chowghat Orange Dwarf as a good variety for tender nut purpose. Other identified varieties which are good for tender nut purpose are

Malayan dwarfs and hybrids. But the seedlings of these varieties are not sufficiently available to meet the requirement. The Board is taking maximum efforts to collect quality seed nuts from all available source and raise seedlings for meeting the local demand. The Board is also trying to inculcate the message of planting at least 25 % dwarf in the new planting and replanting programme so that future requirement of tendernuts would be easily met. This will ensure a reasonable income to the farming community too.

A pilot project for replanting and rejuvenation scheme of the Board which is being implemented in three districts in Kerala in 1.33 lakh ha is aiming to replant 50% of the cut and removed palms. After three years of the implementation of this project, nearly 20 lakh palms will be cut and removed. Through this project the Board aims to replant approximately 10 lakh palms. As the tender coconut

is dominating in the market as a health drink, the Board is advocating the farmers to plant 25% dwarf and 25% hybrid varieties. The Board, therefore is bestowing special emphasis in the production and distribution of good quality seedlings especially the dwarf and hybrid varieties to the farmers through its Demonstration cum Seed Production farms. The production of seedlings targeted for next year from all DSP Farms in 11 lakh.

Contact Address

Shri. Sardar Singh Choyal
Assistant Director
Demonstration cum Seed
Production Farm
Neriamangalam Pin – 686 693
Ph : 0485 2554240
E mail – cdbnrlm@yahoo.in
cdbnrlm@gmail.com

Acknowledgement:

Assistant Director and Field
Officers DSP Farm,
Neriamangalam.



*Elephant foot yam grown as
intercrop*