PROFITABLE MANAGEMENT OF ARECA GARDENS

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In India arecanut gardens occupy an area of 1,84,500 ha with a production of 1,91,400 tonnes of arecanut. The large scale cultivation of arecanut is done in Kerala, Karnataka and Assam, the three states accounting for 90 per cent of the area under the crop. It is also grown in Tamilnadu, Maharashtra, West Bengal, Meghalaya etc. in small areas.

In the West coast region where arecanut is grown the rains (around 3000 mm per annum) are received in about 160 days leaving about half-the-year dry. Due to high intensity rainfall this area is characterised by open textured soil generally lateritic or sandy loam. Basically these soils are poor, but they respond to good management.

Arecanut palm takes five to seven years from seed to first bearing. Failure to undertake proper management will result in poor yield. At the present price arecanut cultivation appears to be profitable. Due to high labour cost, which will be on the increase in the years ahead the use of labour saving devices is desirable. In the case of plant nutrients supply the availability of organic manures is limited and the chemical fertilizers are becoming costly. Therefore for a profitable management an optimum supply of organic manures and fertilizers is necessary.

In arecanut gardens an optimum spacing is important. From the experiment conducted at the Central Pantation Crops Research Institute, Regional Station, Vittal a spacing of 2.7 m × 2.7 m has been found to be the optimum. The interspace available can be profitably used for raising green manure crops, fodder grasses or other suitable crops. The choice of the crops depends on the needs of the farmer.

In the field experiments at the Central Plantation Crops Research Institute, Regional Station, Vittal green manure crops like *Pueraria javanica* and *Mimosa invisa* have yielded upto 14 tonnes of green matter per hectare per year, when raised under arecanut garden where palms are spaced at 2.7 m × 2.7 m. In terms of plant nutrients this works out to nearly 100 kg N; 16 kg P_2O_5 and 60 kg K_2O per hectare. Besides, the green manure crops thus raised cover the interspace and minimise soil erosion. Further, tender cuttings of these crops can be used as green fodder. Fodder crops like Guinea grass also come up well in arecanut gardens.

Under South Kanara, North Kanara and Coastal Kerala conditions the following intercrops are found suitable to grow in arecanut gardens.

1. Banana
2. Pine apple
3. Elephant foot yam
4. Pepper
5. Cocoa

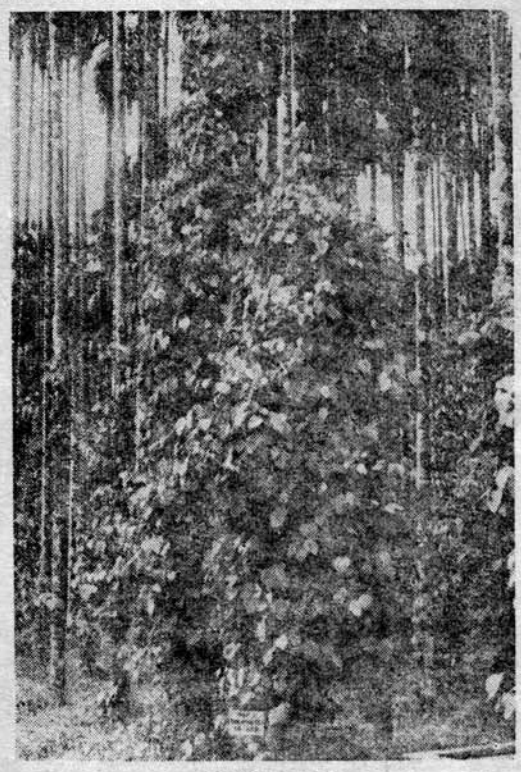
Domestic consumption and marketing are the factors to be considered in the choice of intercrop. Lack of organised marketing for the sale of fruits and vegetable is a major constraint. If the farmer has an assured market he can go for crops like pine apple and elephant foot yam. The marketing problem is different for cocoa and pepper. Dried pepper can be stored for a long time and sold when the market is favourable. In most of the cocoa growing regions proper arrangement now exists for the purchase of cocoa through co-operatives. Raising of food crops in the interspace of arecanut gardens also deserves encouragement. Considering the above facts there is scope for raising pine appel and banana in a limited scale and other portion can be inter planted with pepper and cocoa. All the intercrops should be manured separately.

Banana

This is a traditional intercrop in arecanut gardens. The plant is a surface feeder and therefore root competition is expected. The optimum number for banana as an intercrop is about 1/3 the areca palms. Only one or two healthy suckers are to be retained along with the mother plant. Once in three or four years banana is to be replanted in new pits and old clump removed.

Pepper

Theoretically all areca palms can be used as standards for pepper. But trees aged 15 years and above and less than 40 years are more suitable. At least one tree out of four or five has to be left without pepper



Pepper areca

to facilitate spraying and harvest operations. Rooted cuttings should be planted at least half-a-meter away from the palm in suitable pit and supported separately. After one year growth a channel is opened upto the base of palm. Vine released from the support is buried in the channel and trained to areca palm. By this technique the pepper roots can grow away from areca bole and reduce root competition.

Cocoa

Cocoa is a promising intercrop in arecanut garden. In the garden where palms are spaced at 2.7 m × 2.7 m cocoa plants can be planted at 2.7 m × 5.4 m spacing. Under irrigated condition pods will be available for harvest from the third year of planting. The same level of nutrients as for arecanut palm (100 g N, 40 g P_2O_5 and 140 g K_2O) has been recommended for cocoa. Rodent menace is a problem for cocoa growing. Clean cultivation and avoiding bushy growth near the garden reduce the attack. In addition, if baiting and trapping are practised the pest problem can be minimised. A well maintained five year old cocoa plant may yield about 100 pods per year. Cocoa plant also smoothers weed growth and adds a large quantity of leaf litter to the soil.

Cocoa areca

Elephant foot yam

This tuber crop does not stand water stagnation. In between arecanut rows this can be planted 1½ m apart. It has to be manured heavily with organic matter, potash and phosphate manures. After two or three seasons the site has to be changed.

The following Table gives a broad idea of the economics of the intercrop cultivation in arecanut garden where the palms are spaced at 2.7 m × 2.7 m.

Name of the crop	No. of plants	Gross yield (per hectare)	Gross income Rs.	Expenditure Rs.	Net income Rs. (per ha)
Banana	450	400 bunches (6000 kg)	2500·00	1000·00	1500·00
Elephant foot yam	2500	5000 kg	2000·00	1000·00	1000·00
Pine apple	3000	2500 kg	2000·00	1000·00	1000 00
Pepper	1000	1000 kg	8000·00	3000·00	5000·00
*Cocoa	700	3000 kg	14000·00	6000·00	8000·00

*Yield after 5 years.

Culling out unproductive palms

In a garden, palms receiving identical agronomic treatment do not yield uniformly. Few palms yield very poorly year after year. To even out expenditure and give a margin of profit atleast a palm should yield 200 to 250 nuts per year. Poor yielding palms year after year should be marked and removed and the resulting gaps planted with quality seedlings of high yield potential.

Manuring

Studies carried out at Central Plantation Crops Research Institute, Regional Station, Vittal has shown that one bearing arecanut palm requires for optimum yield 100 g N, 40 g P_2O_5 and 140 g K_2O per palm per year in addition to 25 kg cattle manure or compost. For perennial crop like arecanut slow release of nutrients is desired. Hence for supplying phosphorus rock-phosphate may be a better choice than super phosphate. Nitrogen and potash may be given in split doses to avoid leaching and run off loss during heavy rain.

Drainage and irrigation

Arecanut crop does not flourish in water logged soils. Depending on terrain and soil texture drains should be opened and excess water drained off. In summer months the crop should be irrigated once in five to seven days. In peak dry months of April and May irrigation should be given at shorter interval of four or five days. Perfo and drip irrigation save water and labour but are capital intensive.

Plant protection

The only disease that is universally present is *Koleroga* or *Mahali*, a fungus disease that attacks during monsoon. Correctly prepared 1% Bordeaux mixture should be sprayed to fruit bunches and inflorescences in the beginning of monsoon and the spraying repeated once in five or six weeks depending on rain intensity as a prophylactic measure.

Harvesting the produce and preparing for market.

Only fully tree ripe nuts are harvested and immediately sundried on a well exposed drying yard. Turning the fruits or heaping the lot and then spreading once in 4 or 5 days is important for uniform drying. A moisture content of around 7% is desired in the final produce.