

# ARECANUT CULTIVATION PRACTICES



CPCRI



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ICAR

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Arecanut (*Areca catechu* Linn.) is cultivated in India in an area of 2 lakh hectares with a production of 2.5 lakh tonnes. Important arecanut growing states are Karnataka, Kerala and Assam.

## Climate and Soil

Arecanut requires abundant and well distributed rainfall. It can be grown upto 1000 m altitude in deep and well drained soils without high water table. Laterite, redloam and alluvial soils are most suited.

## Varieties:

Variety	Growth habit	Shape & Size of nut	Yield-Chali (kg/palm)	Recommended for
South Kanara-Local	Tall	Round, Bold	2.0	Coastal Karnataka and Kerala
Mangala	SemiTall early	Round, Small	3.0	-do-
Sumangala	Tall	Oval, Medium	3.28	Karnataka, Kerala
Sreemangala	Tall	Round, Bold	3.18	-do-
Mohitnagar	Tall	Oval to Round, Medium	3.67	West Bengal, Karnataka, Kerala
Mettupalayam	Tall	Elongated, Small	-	Coimbatore district of Tamil Nadu
Thirthahalli	Tall	Oblong, Small	2.0	Malnad areas of Karnataka
Sreevardhan	Tall	Round, Medium	2.0	Coastal

## Raising Planting Material

Mother palms should be early bearers with high percentage of fruit set, and more than ten years old. From these palms, fully ripe and heavier (> 35g) nuts should be selected.

Selected seed nuts are sown 5 cm apart in sand beds with their stalk ends pointing upwards. Beds are to be watered daily.

Three month old sprouts can be transplanted in secondary nursery beds of 150 cm width and of convenient length. Apply basal dose of well decomposed cattle manure @ 5 tonnes per ha. Transplant

the sprouts at a spacing of 30 x 30 cm with the onset of monsoon, provide partial shade, irrigate during summer and provide drainage during rainy season. Periodical weeding and mulching are required.

### **Seedling selection**

Twelve to eighteen month old seedlings with five leaves and high selection index (SI) should be used for transplanting to the main field.  $SI = \text{No. of leaves} \times 40 - \text{height}$ . Shorter seedlings with 5 or 6 leaves are preferred for planting.

### **Planting time**

Planting should be done in May-June in well drained soils, and August-September in clay soils prone to water logging. May-June planting should be preferred in North-East.

### **Spacing and alignment**

Planting at a spacing of 2.7 x 2.7m in North-South line deflected by 35° towards West is recommended. Protect outer row of plants on the South-Western and Southern sides from sun scorching by covering the stem with areca leaves or leaf sheaths or by growing tall and quick growing shade trees.

### **Planting**

Pits of 90x90x90 cm should be dug and filled upto 50 cm with top soil, cowdung and sand. Plant the seedling at the centre of the pit, cover it with soil to the collar level and press around. Banana can be raised as a shade crop in the interspaces.

### **Fertilizer application**

A fertilizer dose of 100 g N, 40 g  $P_2O_5$  and 140 g  $K_2O$  per palm per year is recommended. 12 kg of green leaf and 12 kg compost or cattle manure should also be applied along with fertilizer. During the first and second year after planting only  $\frac{1}{3}$  and  $\frac{2}{3}$  of chemical fertilizers respectively and full dose of green manure and cattle manure are to be applied.

Under rainfed conditions,  $\frac{1}{3}$  of the recommended dose in April-May and  $\frac{2}{3}$  in September-October should be applied. Under irrigated conditions the April-May dose can be applied in February.

During February or April-May broadcast the fertilizer around the base of each palm after weeding and mix with the soil by light forking. During September-October open the basin to a radius of 0.75-1.0 m and to a depth of 15-20 cm, apply the fertilizer and cover with dug soil.

## Irrigation and drainage

Under Dakshina Kannada conditions irrigate the palms once in every 7 days during November-December, every 6 days during January-February and every 4 days during March-May. At each irrigation, 175 litres of water should be applied per palm.

Adequate drainage with 75 cm deep drainage channels should be provided during rainy season.

## Cultural operations

Soil should be loosened with light digging in October-November. Terracing should be provided in undulated lands to prevent soil erosion.

## Cover cropping

*Mimosa invisa*, *Stylosanthes gracilis* and *Calapogonium muconoides* are suitable cover crops. Sowing of these crops may be done during April-May. And it can be cut and incorporated during October.

## Inter/Mixed Cropping

Banana, pepper, cocoa can be grown in areca interspaces. In addition, acid lime and betelvine can also be grown with arecanut in Maidan parts of Karnataka and West Bengal.

## Plant Protection

### Pests

Mites (red and white)  
(*Raoiella indica* Hirst and  
*Oligonychus indicus* Hirst)  
The mites multiply during  
summer months

### Control

Spray dicofol (kelthane) 2 ml/lit.  
of water  
or  
formothion (Anthio 25 EC)  
or  
dimethoate (Rogor 30 EC) 1.5  
ml/lit of water.  
Repeat spraying at an interval of  
15-20 days if there is recurrence  
of pest.

### Spindle bug

(*Carvalhoia arecae* Miller  
and China)

Placement of 2 g Phorate granules  
(Thimet 10 G) in perforated poly-  
bags in the innermost leaf axils of  
areca palms during April is an  
effective management practice for  
maintenance of areca gardens free  
of spindle bug infestation.  
Efficacy of the insecticide lasts for  
8 months. As new leaves emerge  
polybags are to be shifted to the  
innermost leaf axils.

**Root grub**  
(*Leucopholis burmeisteri* Brenske)

Phorate (Thimet 10 G) applied @ 15 g per palm gives effective control of the pest. Apply Phorate to the soil around the plant twice a year, once in May before the onset of south-west monsoon and again in Sept.-Oct. after the monsoon. Repeat the treatment for 2-3 years continuously.

Collect the adult beetles at 18.30 to 19.30 hours, after 8-10 days of pre-monsoon showers and kill them.

**Tender nut drop**  
(*Halyomorpha marmorea* F)

Spray endosulfan 0.05% or Fenvolarate 0.02% to the bunches of the affected palm and few palm around it.

### **Diseases**

### **Control**

**Koleroga or Mahali**  
(*Phytophthora arecae*)

Spray Bordeaux mixture 1% to the bunches at least two times at an interval of 40-45 days. The first spray should be given immediately after the first few monsoon showers. If the monsoon prolongs, a third spray is essential. Collect all the infected nuts and other plant parts and destroy.

**Bud rot**  
(*Phytophthora arecae*)

Remove the infected tissue completely and treat the wound with Bordeaux paste. Spray Bordeaux mixture (1%) to the crown of healthy palms which are in the vicinity of the affected palm.

Remove Koleroga affected bunches and destroy them.

**Inflorescence die back and button shedding**  
(*Collectorichum gloeosporioides*)

Spray Indofil M-45 @ 3g/lit. of water at the time of opening of female flowers in most of inflorescences. If necessary, second spray should be given 20-25 days after the first spray. Remove the fully affected inflorescences and destroy by burning to prevent the spread and severity of the disease.

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**Anabe roga or foot rot**  
(*Ganoderma lucidum*)

It is difficult to identify the diseased palm in the early stages of infection. Proper management of the garden is the best way to check the occurrence of disease. Improve drainage. Drench the root zone of the affected palm with 0.3% Calixin at quarterly intervals @ 15-20 litre/palm + root feeding calixin (125ml/palm) during January, March, July and October.\*\*

\*\* Apply 2-2.5 kg neem cake per palm per year.

Phytosanitary measures like cutting and burning of the dead palms along with bole and roots should be followed strictly.

**Yellow Leaf Disease**

Since the disease is not amenable to control by conventional plant protection measures, other means of containing the disease have to be adopted. Yield of palms in the disease affected garden can be increased by adopting the recommended management practices. Remove the diseased palms in the mildly affected areas to prevent further spread of the disease.

**Harvesting and processing**

Harvesting of nuts at correct stages is very important for obtaining the produce of better quality. In chali preparation only ripe nuts are harvested. It should be ensured that only fully ripe nuts are harvested for preparation of Chali. The out-turn of Patora and Koka will be more if unripe or under-ripe nuts are harvested, which fetch low price in the market. After harvesting, the ripe nuts will have to be sun-dried for about 40-45 days. It is essential to spread the nuts uniformly in a single layer for drying. Proper drying of the nuts is important to prevent fungal infection of the nuts in the drying yard. Turning of nuts once a week may be attended to for uniform drying and better quality of produce. If the requirement for the market is tender processed nuts, then harvesting green fruits at an appropriate stage of about 6 months maturity is essential since produce prepared out of over-matured fruits fetches lower price in the market.

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