

# ARECANUT CULTIVATION

## The garden and its maintenance

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ARECANUT comes up well in places having an altitude up to 1000 m. It grows in a variety of soils; the laterite soils of the West Coast, red loamy soils of Mettupalayam (Tamil Nad), the alluvial soils of Assam and West Bengal and the loam of Orissa.

### Site Selection and Planting

The foremost factor that has to be considered in establishing a garden is to see whether the site selected has adequate irrigation facilities. The soil also should be deep and well-drained, without high water table. Being very susceptible to sun-scorch, arecanut palms need adequate protection from exposure to south-western sun. Proper alignment of the plantation will totally prevent scorching of the stem due to sun. In the square system of planting at a spacing of 2.7 m × 2.7 m the north-south line should be deflected at an angle of 35° towards west. The outermost row of plants on the southern and south-western sides can be protected by growing tall and quick-growing shade trees.

Pits of 90 cm cube dug 2.7 metres apart both ways are used for planting seedlings. The seedlings are planted in the centre of the pit, covered with soil to the collar level and pressed around. Planting is done usually in the month of May-June in well-drained soils, but in clayey soils subject to waterlogging, the planting can be postponed to August-September to obtain better establishment. A shade crop of banana can be raised with advantage which in addition to giving protection to seedlings from sun-scorch, also gives good return.

### Manuring

A steady and high yield will depend to a great extent on the availability of adequate supplies of plant nutrients in the soil throughout the life cycle of the crop. In perennial crops like arecanut this problem requires special consideration since the crop will be in the field for a number of years. Since almost all arecanut growing areas are situated in regions of heavy rainfall, the soils are severely leached and eroded, thus making them poor in major plant nutrients and organic matter. Annual application of 100 gm N, 40 gm P<sub>2</sub>O<sub>5</sub> and 140 gm K<sub>2</sub>O per bearing palm applied in two split doses as shown in the following schedule is recommended for bearing palms.

Manure	Quantity per tree	Time of application
Suphala (15:7.5:15)	533 gm	September-October
Calcium ammonium nitrate	100 gm	February
Muriate of potash	100 gm	February
Green leaf	12 kg	September-October
Compost or cattle manure	12 kg	September-October

Instead of suphala suitable combinations of fertilizers like Factamphos (20:20), ammonium phosphate, calcium ammonium nitrate, rock phosphate, superphosphate, bone-meal, muriate of potash, etc. to supply the required quantity of nutrients can also be used.

Under rain-fed conditions, application of second dose of fertilizers (February) may be taken up in March-April after the receipt of adequate summer rains. Wherever the application of straight fertilizers is practised under rain-fed conditions, half of the quantity may be applied in March-April and the remaining quantity in September-October. For young palms full dose of green leaf and compost or cattle manure may be applied from the first year of planting itself and 1/3 the quantity of fertilizer in first year, 2/3 in the second year and full dose from the third year onwards. Manuring during September-October is done in basins of 3/4 to 1 metre radius made all round the palm to a depth of 15 to 20 cm. The second application of fertilizers may be done around the base of each palm after weeding. The fertilizers are worked into the soil by a light forking.

The soils of arecanut-growing areas are acidic in reaction. Application of lime corrects soil acidity, increases the availability of plant nutrients, reduces phosphorus fixation in the soil, enhances the microbiological activity and improves the general condition of the soil. Besides, lime supplies plant nutrient such as calcium and ultimately increases crop yield. Lime at the rate of 0.5 kg per palm may be broadcast and worked into the soil by forking once in two to three years. The application of lime may be completed at least three weeks prior to manuring in September-October.

### Irrigation and Drainage

The palms are to be irrigated once in 3 to 5 days depending upon the soil type. In southern Kerala

where arecanut is grown mainly under rain-fed conditions it was found that manuring with irrigation gives three times more yield than manuring alone. Adequate drainage should also be provided since the plants are unable to withstand waterlogging. Drainage channels which are 25 to 30 cm deeper than the bottom of the pits should be opened and the water drained out of the plots.

**Cultural operations.** A light forking or digging with *mammari* fork or *mamati* to break up the irrigation crust and to uproot weeds may be done with the close of the monsoon generally in October-November. Where the land is slopy, terracing may be carried out to prevent soil erosion. Scything of the weed growth may be taken up as and when found necessary.

**Cover cropping.** Cover crops, in addition to supplying organic matter to the soil, control surface run-off. Leguminous crops are preferred to non-leguminous crops because of their ability to fix atmospheric nitrogen and enrich the soil. Of the different green manure-cum-cover crops tried, *Mimosa invisa* (thornless mimosa), *Stylosanthes gracillis* and *Calapogonium mucunoides* have been found to be suitable. In order to reduce competition for soil moisture between cover crop and arecanut it is advisable to take up the sowing of cover crop seeds in the month of April-May with the pre-monsoon showers. The green matter can be cut and applied to the arecanut palms by October.

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### CUMIN CULTIVATION IN RAJASTHAN

The crop is harvested by uprooting the whole cumin plant which is tied into bundles for drying on threshing floor. Seed is separated by beating the plants with a stick. The inert material is separated by winnowing. The high yields of cumin, therefore, can be obtained provided the recommended practices are properly followed. Four to five quintals per hectare can easily be produced, if above-mentioned improved techniques are followed.

No serious insect damage has been noted on cumin.

Powdery mildew locally known as 'Chachiya' does affect the crop adversely. This disease can be controlled by timely dusting of finely powdered sulphur or other compounds of sulphur available in the market. Sulphur powder be dusted at 25 kg/ha or wettable sulphur be sprayed at 0.2 per cent sulphur concentration. Dusting or spraying be done twice on the crop—one after 50 days of sowing and other at the time when the sky is overcast with clouds. Cumin crop is also susceptible to Fusarium wilt—which can be checked by sowing disease-resistant varieties. Cumin blight also sometimes affects the crop which can be checked by spraying with Bordeaux mixture (2:50) or copper fungicides at 0.2 per cent or Zineb at 0.2 per cent.

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