Growing Arecanut-The Right Way*

ARECANUT PALM which yields the coveted betel nut or *supari* is an important crop in Kerala, Mysore, Assam, West Bengal, Tamil Nadu and Maharashtra. The crop occupies a total area of of 1,60,800 hectares in our country and produces 1,37,800 tonnes of nuts.

Superior planting material

Arecanut, a seed propagated, cross-fertilised, perennial crop presents innumerable challenges to the scientists attempting to produce genetically superior planting material. One of the established methods of improvement in such cases is to identify characters of high heritability. The heritability of a character is a measure of the extent to which that character is passed on from a parent to its progeny. When heritability of a number of characters is high, the performance of a palm possessing these characters is a good indication of its value, both as a mother palm for direct selection as well as for breeding. The heritability of some of the important characters in arecanut is given below :

Characters	*Heritability* (%)
Number of nuts yielded	20
Total weight of nuts yielded	20
Age at first bearing	72
Number of female flowers produced	8
Percentage of nut set	33

From the above, it will be seen that heritability of yield is rather low. Collection of seed arecanuts from high yielding mother palms, as practised hitherto will, therefore be of limited advantage. A study of the age at first bearing which has the highest heritability showed that early bearing plants also give much higher yield than late bearers (Table 1). The consistently superior yield of palms coming to bearing early coupled with the fact that this character has high heritability shows the advantage of collecting seednuts from such palms. Selection of nuts from palms having high percentage of nut set will also be useful. For planting, one-

Table I : YIELD PATTERN OF PALMS COMING TO BEARING AT DIFFERENT STAGES

Age of first bearing	*Percentage of occurrence*	*Mean yield (No. of nuts) in different years*				*Total*
		I	*II*	*III*	*IV*	
5	62	109	211	255	305	880
6	32	..	139	148	208	495
7	4	..	..	58	95	153
8	1	..	..	..	34	34
9	1	..	..	..	..	..

*Shri K V. Ahamed Bavappa. Director. Central Plantation Crops R s. Instt., Kasaragod. Kerala. Based partly on : (i) Ann. Rep. Central Plantation Crops Res. Instt. Kasaragod. 1969-70: (ii) Improvement of Arecanut Palm (*Areca Catechu L.*). *Indian J. Genet.*, Pl. Breed., 27 (1). pp. 93-100.

year old seedlings having maximum number of leaves and minimum height alone should be selected. To be precise, the number of leaves present at the time of planting is to be multiplied by 40 and the height of the concerned plant subtracted from this figure. Plants which have a high value for this alone should be selected. For example, if a plant has five leaves and 90 cm. height, the value will work out to $5 \times 40 - 90 = 110$, and suppose the values range from 50 to 150, plants having higher values may be selected to the extent practically feasible.

Selected seednuts should be sown after harvest five to six centimetres apart in sand beds under partial shade with their stalk end pointing upwards and watered daily.

A high yielding variety (Fig. 1), which yields on an average 206 per cent over the local, has been recently evolved. This variety which is ready for release to the cultivators is an early bearing semi-tall, having nuts of good marketing quality and pest and disease tolerance comparable with the local.

Better management

It has been found that under the West coast conditions, arecanuts planted at a spacing of 2.7 m. $\times$ 2.7 m. give both high yield as well as maximum net profit.

In a freshly transplanted field, elimination of plants which have less than 20 cm. girth after one year growth and less than four nodes after two years' growth, was found to increase the overall yield of plantation by about 10 per cent. A similar study of the bearing palms in a plantation and rejection of about 16 per cent of the palms which give less than 100 fruits per year will increase the production potential of the plantation and also reduce its maintenance cost.

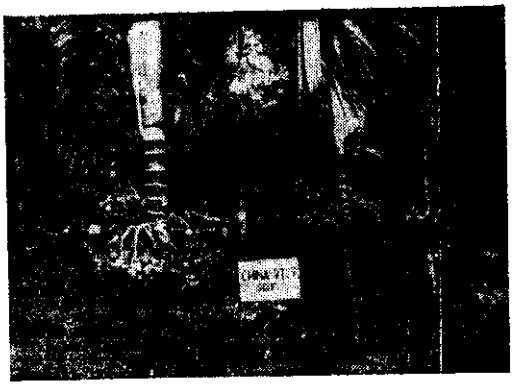

Fig. 1 : **A high-yielding arecanut variety ready for release.**

Growing banana as an intercrop during the initial four years of the arecanut plantation has been found not to have any adverse effect on the growth of arecanut palms. In Southern Kerala, where arecanut gardens are not normally irrigated, it was found that manuring with irrigation gives three times as much yield as manuring alone. Bearing arecanut palm requires 100 gm. nitrogen, 40 gm. phosphorus and 140 gm. potash. Two third of the fertilizer dose should be applied in September-October and the balance of one-third in February over a basal application of 12 kg. each of green leaf and compost.

Crop protection

Fruit rot caused by *Phytophthora arecae* may be controlled by spraying one per cent Bordeaux mixture. Spindle bug can be controlled by spraying of crowns with Endrin 20 per cent EC (one litre in

(*Continued on page* 27)

of lentil in-between two rows of winter planted sugarcane has been found to be an advantageous practice. Lentil can be grown after any *kharif* crop like maize, sorghum, paddy, etc. Particularly on fields which are vacated late after harvesting a late paddy variety, there may not be any other choice, but to grow lentil only.

Plant protection

Seedling blight and rust are two prominent diseases of lentil. In case of seedling blight, plants start to die just after emergence, which results in a reduced plant stand. Seed should be treated with 0.25 percent thiram and the seeds of only improved varieties should be used. Crop is affected by pod borer during the reproductive growth. Protective spray of thiodan or metasystox would be quite effective, if done after the onset of flowering. The rust starts appearing with the onset of flowering. Protective sprays of wettable sulphur (2-3 kg. per ha.) or dusting of sulphur powder (20-25 kg. per ha.) could help the crop.

Harvesting

Depending upon the varieties, the lentil takes about 120 to 150 days for its maturity. The duration of maturity is mainly dependent on the sowing time. Early planted crop takes more time whereas late-planted crop takes comparatively less time to mature. Fully mature crop is harvested and dried for about a week and grain and straw are separated by conventional methods or by the use of a multipurpose thresher.

On an average, one can expect about 20-25 quintals of grain and about the same quantity of straw with the use of improved varieties and agronomic practices.

(*Continued from Page* 24)

800 litres of water) or BHC 50 per cent wettable powder (250 gm. in 100 litres of water). Whereas mites can be controlled by spraying the lower surface of leaves with either Kelthane, 186 ml. or Akar-338, 100 ml. or Trithion, 126 ml. in 100 litres of water. Combination sprays of insecticides and fungicides whenever possible will reduce the cost of application.

Recently, certain other pests, such as mites have been found to attack tender arecanut fruits. These appear in the months of March to July in Kerala and cause severe nut shedding. Effective control of the pest has been found possible by spraying bunches with Rogor 30 EC, a systemic acaricide, at the rate of one cc per litre of water.