Raise intercrops in Arecanut Plantations for higher returns

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Arecanut is one of the most important cash crops of Kerala State. Being a perennial crop, it occupies the land for a number of years and if the cost accounting benefit analysis of this single crop is compared with that of a high yielding triple crop of cereal grown in an year in another piece of land of the same extent, then the total net return will be much less. Areca palm has a long pre-bearing age of five to eight years and the farmers may not get practically any return during this period. With the low income in the early years of bearing, fluctuation in the market price, failure of the crop due to unfavourable weather condition, incidence of pests and diseases, arecanut growers are put to great financial difficulties. To make arecanut cultivation more dependable, the farmers may raise intercrops so that they could get additional monetary return. The wide inter-row space in arecanut gardens further offers opportunity for raising intercrops.

No authentic information is available in the choice of the intercrop in arecanut plantation as its success depends on the root distribution, feeding habit of main and intercrop, ability to grow under filtered shade, capacity of the intercrop to withstand the dripping during monsoon etc. Keeping in view of these requirements, an experiment was laid out during 1964 at the Regional Arecanut Research Station (presently Central Plantation Crops Research Institute, Sub-Station) Peechi.

Experimental details

A field experiment with Latin Square Design was laid out with five treatments viz, (1) control (no intercrop), (2) pepper, (3) ginger, (4) pineapple and (5) elephant-foot-yam, replicated five times in an existing arecanut garden planted in 1961.

The general properties of the soil are pH 5.3, organic carbon 0.23%, available P_2O_5 52 kg /ha. and K_2O 168 kg./ha. Each treatment occupied the interspace of 80 areca palms, each palm being spaced at 2.7 m $\times$ 2.7 m apart. Areca palms were fertilized at 125 kg. N, 50 kg P, and 175 kg. K/ha. during August-September. Basin type of irrigation was followed for the palms during summer months (December-May) of each year. The details of agronomic practices adopted for the intercrops during 1968 and 1969 are discussed below.

Pepper

Rooted cuttings of 'Karimunda' variety of pepper was planted in July, 1967 at two cuttings per palm, 30 cm. away from the base using arecanut as a standard. While planting, southern side was avoided to reduce the damage to tender vine from sun. Manures were applied in basins taken 15 cm. deep and 30 cm. away from the base of the

vine. Compost was applied during May-June of each year. N at 100 kg./ha. was applied in July-August; P at 160 kg. and K at 60 kg. were applied in October-November in basins and forked in.

Ginger

Bits of seed rhizomes weighing 18 g. to 15 g. having minimum of two nodes were planted at 25 cm. apart during June in all the years in the shallow pits 5 cm. cube dug on raised beds taken in between the rows of palms. Pits were then covered with well rotten cattle manure, at 25 tonnes/ha and mulched with green leaves. Fertilizers were applied at 60 kg. N, 60 kg. P, and 150 kg. K/ha. The entire P and half each of N and K were applied as basal dressing. The remaining N and K were applied as top dressing 45 days after planting. Earthing up and mulching were also given. A second earthing up and mulching was given four months after planting. The crop was harvested in 229 days.

Pineapple

Pineapple suckers were planted in 1964 equidistantly at three in each trench of 125 cm. × 60 cm. dug in between two rows of palms. Suckers were manured at 100 kg. N, 40 kg. P, and 200 kg. K/ha. in two split doses, one each just before and after monsoon, over a basal dose of 15 tonnes of cattle manure per hectare.

Yam

Bits of seed material of yam, having a small portion of the central bud, weighing about 0.75 kg. to 1.0 kg. were planted in pits of 50 cm. cube. Two pits were dug at 90 cm. apart in the same row of arecanut palm. Planting was done in April. Pits were covered with well decomposed cattle manure at 10 tonnes/ha. and mulched. Fertilizers were applied at 80 kg. N, 35 kg. P and 80 kg. K. The entire dose of P and K and ½ N were applied as basal dressing. The remaining ½ N was applied two months after planting. The yam was harvested in 240 days.

Results

Growing intercrops in arecanut garden had no significant adverse effect on the yield of areca palms during both the years. Amongst the intercrops tried, yam stood first followed by ginger and pineapple as regards dry matter production from unit area.

Table. Cost accounting analysis per hectare with intercrops.

Intercrops	Yield in kg./ha.			Mean cost of production	Gross income (Rs.)	Net income (Rs.)
	1968	1969	Mean yield			
Pepper	*	*	*	590	—	—
Ginger	3240	2060	2650	1215	2120	905
Pineapple	2146	1760	1953	469	1172	703
Yam	3730	4760	4245	1149	2547	1398

* Not started yielding.

Pepper has not come to bearing as planting was done in 1967. The yield of yam in 1968 was less when compared to 1969. This was because yam was grown in the same pit where it was grown during previous years. When the location of pit was

changed in 1969, there was an increase in yield.

A perusal of cost accounting analysis of different intercrops growth with arecanut (Table) reveals that growing of yam, ginger and pineapple as intercrops in arecanut plantation can give additional monetary return. The studies also indicated that raising of intercrops is not only a source of higher return from unit area per unit of time, but also provides food and employment opportunity particularly in the context of food scarcity and under employment in the country and thus worth adopting by farming community.

Recommendations

1. Intercrops like yam, ginger and pineapple can be grown in arecanut gardens without appreciable adverse effect on the main crop of arecanut provided the intercrops are also adequately manured. This manuring may take care of any drop in yield that the main crop of arecanut may show. The slight reduction in yield of arecanut would be made up by the returns from the intercrop.

2. Cost accounting analysis have shown that amongst the intercrops tried yam stood first followed by ginger and pineapple.

3. The decline in the yield of yam when grown year after year in the same location can be overcome by changing the pits.

4. Intercropping in areca plantation will be a paying proposition to the farming community particularly in the context of acute food shortage and under employment in the country and in the light of fluctuating price of arecanut.

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