



Mixed Cropping System in Arecanut Plantation

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Arecanut palm (*Areca catechu* L) belongs to family Palmae. It is one of the most important commercial crops in the South East Asia as common masticatory. It has the quality of supplying stimulation to nervous system, increasing secretion of saliva in mouth which aids digestive system, removes bad odour from mouth. Ancient Ayurvedists used arecanut for some of its medicinal qualities for manufacturing aphrodisiac medicines, for skin diseases, diabetes, blood pressure, leprosy, fever, leucoria, urinary stones, rheumatism, intestinal worms, seminal weakness, Jaundice, gastritis, hyper-acidity etc. by blending with other herbs. Arecanut is also used as appetizer, carminative, manufacturing soap, chewing gums, dyes, chocolates, toothpaste, cosmetics, after-shave lotion, and ulcer cleaning tincture. In native medicines also various parts of areca palm bark, roots, leaf sheath, juice of tender, raw and dried nuts, flowers *etc* are used for different purposes. India is one of the most important areca growing countries in the world, being cultivated from pre-historic period. Areca nut grows in much of the tropical Pacific, Asia and parts of East Africa and mostly grown in India, China, Bangladesh, Myanmar, Thailand, Malaysia, Indonesia, Philippines and Srilanka. In India, the cultivation of arecanut is mostly confined to Karnataka, Kerala, West Bengal, Assam and all North Eastern states. It is also cultivated to a small extent in Tamil Nadu, Maharashtra, Andhra Pradesh, Goa, Pondicherry, Andaman and Nicobar Islands. The share of Karnataka, Kerala and Assam in terms of total area under cultivation and production is around 83 per cent. Karnataka stands first both in terms of area and production followed by Kerala and Assam.



Fig. Mixed cropping system in Arecanut Plantation

Multi-storey cropping is practiced for growing two or more crops in the inter spaces during main crop growing season and which include both inter and mixed cropping. Arecanut has a long gestation period; the long pre-bearing age of arecanut has prompted farmers to grow different annual or biennial crops for economic sustainability. So, many crops, particularly short duration crops were reported ideal for growing under areca nut in the initial period of 5-6 years. In later years, as the arecanut canopy increases, mixed cropping with other shade tolerant perennial crop species could be



grown. Crops like dioscorea, elephant foot yam, taros were grown in pits or trenches, while pineapple and banana, ginger, turmeric, arrowroot, chilies, etc. were planted in raised beds of convenient size and were recommended for the particular locality. Various species in mixed cropping should be selected according to the age of the palm, shade tolerance and amount of light penetration to the ground level. It is practiced mainly through use of interspaces for growing other crops of shorter duration, which effectively utilized the soil moisture at different depths of soil and intercept solar energy at different height. The main advantage of multiple cropping in arecanut was the ability to provide substantial increase of diversified crops and income per unit area through better utilization of resources like land, space, light and nutrients.

Brief review of mixed cropping in Arecanut Plantation:

Arecanut is a perennial crop and it can produce fruits up to 40 to 50 years. Intercropping in plantation crop garden helps to meet the food requirement, besides increasing the net returns per unit area (Nair and Verghese, 1976). Areca nut based cropping systems have been developed for different places and net returns from the garden have been increasing manyfold. The root distribution pattern studied in arecanut revealed that at a spacing of 2.7m x 2.7m could effectively use only 30% of the total land area (Bhat and Leela, 1968). Different intercrops raised and their diversity was reported by Bavappa (1951) and about 32.7-47% of sunlight can penetrate through the 14 years old arecanut canopy (Muralidharan, 1980). Nair *et al.*, (2000) conducted an experiment in a 25-year-old coconut plantation at Spighat, to observe the possibilities of intercropping with different cucurbitaceous vegetables like *Luffa cylindrica*, *Luffaa cutangula*, *Lagenaria siceraria*, *Cucurbita moschata* and *Trichosanthe sanguine*.

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