

Intercultural operations

Mulching: Immediately after planting, the pits are to be mulched with dried leaves which will induce better sprouting by conservation of moisture and helps controlling weed growth. Coconut leaves and arecanut leaves, both dried and fresh are used as mulch in the interspaces of coconut plantations. Application of *Gliricidia* leaves is also beneficial as it adds more nutrient to the soil.

Weeding: One (or) two manual weeding is necessary depending upon the amount of weed growth, first at 45 days after planting and the second, about one month after the first. Proper mulching decreases the need for second weeding which helps in manpower efficiency.

Plant protection

Collar rot is an important disease, which occurs mainly due to poor drainage, water logging and mechanical injury at collar regions. Brownish lesions first occur on collar regions which spread to the entire pseudo stem and cause complete yellowing of the plant. Using disease free planting materials, maintaining good field sanitation, providing proper drainage, application of neem cake with *Trichoderma* will help in managing the collar rot. Sucking pests like aphids, mealy bugs are also noticed occasionally which could be managed well with spraying neem oil @ 2ml per litre of water.

Harvesting

The crop can be harvested in about 8-9 months after planting. The tubers are harvested in November-December. The harvestable maturity is indicated by yellowing and drooping of the leaves. A light irrigation may be required before harvest of tubers to loosen the soil and to avoid damage of tubers during digging.



The corm yield ranges from 40-50 t/ha depending on the soil conditions and management. This provides a good additional income to the farmers as the price of EFY is about Rs. 30 to 40 per kg at farm gate. About 20 per cent of the harvest need to be kept as seed tubers for the next planting season after 3 or 4 months and the rest can be marketed.

Conclusion

The scientific practices that were adopted by the farmers include basal application of organic manure; seed treatment with cow dung slurry and *Trichoderma viride* before sowing; *Glyricidia* green leaf mulching after sowing and once again after 45 days; Weeding after 45 days followed by earthing up. The farmers have realized average yield of 800 to 1000 kg elephant foot yam from 0.02 ha area plot after about nine months. Considering the market rate of Rs 30- 40 per kg of elephant foot yam tubers, they earned about Rs 24000-30000 from 0.02 ha as additional income from the coconut system. Use of improved varieties such as Gajendra, Sree Padma and adoption of scientific cultivation along with other suitable intercrops such as Cinnamon, Clove, Nutmeg and Black Pepper under coconut plantations will make the coconut based cropping systems profitable and productive in Andaman and Nicobar Islands.

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ELEPHANT FOOT YAM - A PROFITABLE INTERCROP FOR COCONUT GARDENS

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Coconut is the most widely grown crop in the Andaman and Nicobar Islands. It is grown in over 20000 ha area in Andaman and Nicobar Islands. The Growing various annuals and perennials in the interspaces of coconut plantations have been proven to be successful as Coconut Based Farming Systems. Proper selection of crop species or combination of crops with adaption of appropriate management practices are important to get higher income generation and better utilization of natural resources.

EFY – Elephant Foot Yam (*Amorphophallus paeoniifolius*), commonly known as *Suran* or *Jimmikand* is a tuber crop which produces underground stem tuber. The crop is gaining popularity due to of its yield potential under marginal management conditions of the Island cropping systems and its culinary properties.

In India, it is cultivated widely in the states of Andhra Pradesh, West Bengal, Gujarat, Kerala, Tamil Nadu, Maharashtra, Uttar Pradesh, Bihar and Jharkhand. The tubers (called corms) are used as a vegetable after boiling or baking or frying They are reported to be rich sources of carbohydrates, calcium, (50 mg/g), phosphorus (34 mg/g) and vitamin A (260 IU/g).



It is a preferred tuber by different island communities in Andaman and Nicobar Islands for variety of culinary preparations such as fry, chips, curries either alone or in combination with other vegetables, tubers and coconut. In Andaman and Nicobar Islands, ICAR-CIARI has introduced and demonstrated the cultivation of improved varieties such as Gajendra, Sree Padma varieties of EFY. Demonstration of organic production of elephant foot yam under coconut based cropping system have shown to enhance productivity and profitability under Island cropping systems. This crop also offers excellent export potential from India, since it is not generally cultivated commercially in other countries.

Soil and climate

Generally, *Amorphophallus* species grows well under tropical and subtropical humid climatic conditions with a mean annual temperature of 30-35°C and a well distributed rain fall of 1000-1500 mm spread over a period of 6-8 months. It can come up on variety soils but a well-drained sandy loam soil (or) sandy clay loam soil with a pH of 5.5-7.0 is ideal for the growth of this crop. The climate and soil of Andaman and Nicobar Islands is ideally suited for cultivation of this crop.

Propagation

EFY is propagated by use of offsets (or) corms. The off sets are nothing but miniature tubers arising from the mother corm. In some varieties/types, the daughter corms are not produced in which the mother corm is cut vertically into pieces in such a way that each piece has portion of the central bud



from where the plant grow after planting. Depending on the size of mother corm, it is cut into 4



or 6 or more pieces making them to about 300 to 500g weighing pieces. Dipping of planting material in cow dung slurry followed by drying in a shaded place is effective in accelerating the sprouting.

Field preparation and planting

Most coconut gardens in South Andaman are undulated. Hence use of tractors and mechanical devises is difficult. In such places, only manual field preparation is done with pickaxe. Wherever possible, the interspaces could be subjected to ploughing two to three times. Pits of 45 x 45 x 45 cm are dug at a spacing of 90 x 90 cm and the filled with 4-5 kg of FYM and topsoil. About 25 to 40 EFY plants could be accommodated per interspace of coconut depending on the presence of other intercrops such as cinnamon, nutmeg etc. The pretreated planting material is placed vertically in the pits and then covered with soil and compacted lightly. The ideal planting time is March-April under Island conditions. Delayed planting after commencement of monsoon rains, may cause rotting of tubers. Hence, planting should be done at right time.

