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CPCRI AND COCONUT RESEARCH

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THE classics of India have rightly eulogised the coconut tree as 'Kalpavriksha'—the all giving tree. It is also one of the five legendary 'Devavrikshas' or Godly trees. In terms of geographical distribution, it ranks first among the oil-yielding crops of the world as it is grown in as many as 76 developing countries. Currently the country produces 5,961 million nuts annually from [illegible] million hectares of coconut plantations. Coconut contributes one per cent of the GNP and two per cent of the total agricultural income of India which ranks third in the world production of coconut.

Research. India was the first country to take up systematic research on coconut. Research work was started at Kasaragod and Nileshwar of the then Madras Presidency (now in Cannanore District, Kerala) in 1916. The Kasaragod Station is the headquarters of the Central Plantation Crops Research Institute since 1970. Since coconut is important not only to Kerala but also to other states such as Karnataka, Tamil Nadu, Andhra Pradesh, Maharashtra, Orissa, West Bengal, Assam and Gujarat, an All-India Co-ordinated Project for the improvement of this crop was sanctioned by the Indian Council of Agricultural Research in 1971 with headquarters at Kasaragod in order to intensify and co-ordinate the work at national level. At present there are 71 scientists working on 46 projects on coconut in the 10 disciplines namely, plant breeding, agronomy, soil science, biochemistry, physiology, pathology, entomology, nematology, microbiology and processing at the Institute. In addition, there are 55 scientists working on 48 experiments at the 13 co-ordinating centres located in 8 states.

Higher Production

Coconut, being a perennial crop, locks up the area planted for centuries. Under such a situation, mistakes committed in crop husbandry practices can cause continued damage on productivity. Higher plant densities due to indiscriminate planting aggravated by the small holding size of the crop (average 0.22 ha) affect production adversely. Similar is the case if the stand is sparse. Taking into account the facts that all efforts to maximise production per unit area, time and inputs should be based on a clear understanding of the existing efficiency of utilisation of the natural resources such as land and sunlight and applied inputs coupled with crop compatibility, the Institute has given a lead during the last half a decade in developing crop combinations and cropping systems that can substantially increase production. It is now possible to increase the net income by as much as 300 per cent through appropriate crop combinations grown under good management and irrigation. Further studies on increasing the efficiency of applied nutrients and water, possibility of developing built-in self generating and recycling organic waste systems and other favourable effects of such crop mixes are under way. However, the long-term effects of such intensive exploitation, if any, on the soil are also being studied with considerable interest.

Better Security to the Farmer

In monocrop systems price fluctuations, crop losses due to pests and diseases, etc., affect the economy of the farmer adversely. Inter and mixed cropping programmes are one of the best methods of crop insurance against such hazards. Reducing the cost of production through better farming efficiency is yet another method that can partly offset the instability in the net return. Researches initiated in this direction do show that these are exploitable areas.

Coconut is by and large a garden land crop mostly grown in small holdings. Owing to this reason, it is one of the most ideal crops for developing a balanced plant-animal-human ecosystem. Investigations in progress show that exceedingly compatible and mutually supporting life systems which can maintain themselves to a great extent from the point of view of nutrient supply and energy requirement through the appropriate recycling of the generated organic wastes could be developed. This can also be a tool for increasing the

efficiency of farming. Employment opportunities that could be developed through the above intensive cropping programmes and systems are two-fold. For cultivating the same area, there is a 50 per cent to 500 per cent increase in man days per year depending upon the crop combination or cropping system. Besides the additional production that is obtained through such efforts generates further employment opportunities through additional agro-based industries for processing them. While formulating new research programmes such areas which have socio-economic bearing are given higher priority.

Support to other Research Centres

The Institute has in its collection 64 indigenous and 32 exotic cultivars collected from 26 countries. It is probably the largest collection of coconut germplasm maintained at any coconut research centre anywhere in the world. Planting material from these collections is regularly being made available to all the co-ordinating centres of the All-India Co-ordinated Research Project as well as to the different universities. Some of these varieties which have proved to be superior to the local cultivars as well as the hybrids evolved using certain others are in great demand and large scale programmes for production of these hybrids and multiplication of varieties are under way in different States. The nucleus planting material required for these centres is made available by the Institute in addition to the technology involved. The Institute has also a project on hand for a world wide collection of coconut germplasm which is receiving the attention of the FAO.

Linking Research and Development

To ensure a better flow of the know-how developed at the Institute to the farmers' fields, the different agencies responsible for coconut production, namely, the department of agriculture of different states, the Coconut Development Council and the agricultural universities are linked through a series of training programmes organised by the Institute. Extension staff of the department of agriculture engaged in coconut development, teaching staff of the farmer's training centres and scientists working at different coconut research stations in the country are all trained at the Institute. Training is also arranged to the farmers in specialised areas such as hybrid seed production. The Institute also imparts training to those research and extension staff deputed by various international agencies such as FAO and different aid programmes.

The Institute supplies quality planting materials of 'west coast tall' and a number of other varieties. The seed garden established in Kidu reserve forest in an area of 102 ha will produce annually about 1.2 million nuts of genetically superior 'west coast tall' and 'Lakshadweep ordinary' varieties and their hybrids with 'dwarf orange' and 'Gangabondam'.

Though research efforts on coconut made so far have enabled the evolution of high and early bearing hybrids, development of coconut-based management practices and cropping systems and control of pests and diseases, it is intriguing that the average yield per palm has not increased over the last 20 years. Rather it has shown a declining trend. The International Symposium on Coconut Research and Development being organised by the Institute to mark the 30th year of Coconut Research in the country will not only discuss all these aspects but also will spare no pains to formulate further research programmes on diseases which have evaded solution so far.