The Central Plantation Crops Research Institute (CPCRI) was established in 1970 under the Indian Council of Agricultural Research with headquarters at Kudlu, 5 km north of Kasaragod town. The Institute has a country-wide research network of 10 other centres to cater to the research needs of varying agro-climatic conditions on palms and cocoa. The Regional Stations are located at Kayangulam (Kerala), Vittal (Karnataka) and Minicoy (Lakshadweep). Among the five research centres, two are in Kerala (Palode and Kannara), and one each in Karnataka (Hirehalli), Assam (Kahikuchi) and West Bengal (Mohitnagar). In addition there is a seed farm at Kidu (Karnataka) and a World Coconut Germplasm Centre at Sipighat in Andamans. Adaptive research support to the Institute is provided by 16 centres at State Agricultural Universities under the All India Coordinated Research Project (AICRP) on Palms spread over nine states.

The mandate of CPCRI is to evolve appropriate production, protection and processing technologies for palms and cocoa, to coordinate research under the AICRP on Palms and to transfer the technologies developed on palms and cocoa to the farmers.

Organization

Research programmes are identified at the Annual Research Council meeting for implementation at the various centres of CPCRI. The Institute has a
sanctioned staff strength of 944 including 113 scientists. CPCRI implements a number of collaborative research programmes supported by Department of Biotechnology, Technology Mission for Oilseeds and Pulses, Ministry of Agriculture and Coconut Development Board at the national level and World Bank, PL 480 and Coconut Genetic Resources Network at the international level. The Institute has been recognised as a post graduate research centre by various academic and agricultural universities.

Achievements in brief

CROP IMPROVEMENT

♦ The Institute maintains an excellent germplasm collection comprising 132 accessions in coconut (46 indigenous and 86 exotic), 99 accessions in arecanut (76 indigenous and 23 exotic) and 134 exotic accessions in cocoa.

♦ In coconut, Laccadive Ordinary (LO) and Philippines Ordinary (PO) which give 33% and 51% respectively more copra over local tails are recommended for cultivation in the southern states.

♦ Chowghat Orange Dwarf (COD) × West Coast Tall (WCT), WCT × COD and LO × COD coconut hybrids giving 49% to 77% more copra yield than local tails were released for cultivation.

♦ Embryo culture in coconut has been standardised and found to be very useful in field - collection of coconut germplasm from distant places.

♦ In arecanut, four high yielding varieties viz., Mangala, Sumangala, Sreemangala and Mohitnagar with yield
potential of 2.02, 3.28, 3.10 and 3.67 kg of chali (dried and husked nuts)/palm/year respectively have been released.

- Soft wood grafting using four-month old cocoa seedlings as root stock and selected mother plants as scion gave an average of 70% success.

**CROP MANAGEMENT**

- For high yielding coconut hybrids, the normal dose of 500g N + 320g P₂O₅ + 1200 g K₂O/palm/year is sufficient under rainfed conditions. In root (wilt) affected tracts, an extra dose of 500 g MgO/palm/year is also to be applied.

- For acid soil, powdered rock phosphate has been found to be the cheapest and best source of P.

- The productivity of coconut based high density crop model could be maintained at higher levels even with lower levels of fertilizers by suitable recycling of biomass produced in the system itself.
The high density multi-species cropping system involving arecanut, banana, pepper and cocoa has resulted in a higher net return of about 85 to 100% over arecanut monocrop system.

**CROP PROTECTION**

- Coconut root (wilt) disease which is endemic in the eight southern districts of Kerala from Trivandrum to Trichur is estimated to cause an annual yield loss of 968 million nuts.
- Eradication of root(wilt) affected palms from mildly affected districts of Trivandrum and Trichur, and northern districts of Kerala has been recommended to contain the disease and arrest further spread. In areas of severe incidence, all the heavily infected and unproductive palms (yielding less than 10 nuts/palm/year) and all juvenile diseased palms are to be eradicated.
- Crown choking disease of coconut occurring in north eastern region can be effectively controlled by the application of 50g Borax at half yearly intervals.
- Thanjavur wilt/Ganoderma wilt of coconut can be controlled by application of 100 ml tridemorph 5% through root feeding at quarterly intervals and annual application of 5kg neem cake. Isolation of the diseased palms by digging trenches 1 m deep and 30 cm wide is also to be adopted.
- Drenching of tridemorph 0.3% at quarterly intervals coupled with annual application of 3 kg neem cake during the early stages of infection helps in controlling Anabe disease of arecanut.
- Leaf eating caterpillar of coconut (Opisina arenosella) can be controlled by spraying dichlorvos 0.02% on the foliage. After two weeks, larval parasites followed by pupal parasites may be released for effective pest management.

- Rhinoceros beetle of coconut can be controlled by adopting integrated management practices involving hooking the beetle, leaf axil filling with sevicol (25g) and fine sand (200g) and releasing baculovirus infected beetles.

- The bug Halyomorpha mormorea responsible for tender nut fall in arecanut can be controlled by spraying the bunches with endosulfan 0.05%.

- Spindle bug of arecanut can be controlled by placing perforated polythene sachets each containing each 2g phorate in innermost two leaf axils. The mites can be controlled by spraying the leaves with dicofol 0.05%.

**POST HARVEST TECHNOLOGY**

- A copra moisture meter for estimating moisture content between 5% and 40% in copra has been developed.
Low cost copra dryers using agricultural wastes as fuel have been developed.

Solar copra dryer and an electrically operated tray dryer have also been developed at the Institute.

Technology for production of oyster mushroom from palm wastes has been standardised.

Transfer of Technology/Training

An important activity of the Institute is to disseminate research results to the extension agencies and the farming community. Extension literature in the form of folders, pamphlets etc. are brought out. Training programmes on various aspects of production technology in palms and cocoa are also being organised. The Institute participates/organises Kisan Melas and exhibitions. The Institute also produces quality planting materials of coconut, arecanut and cocoa for supply to the farmers, research centres etc.

Krishi Vigyan Kendra

The KVK was established at Kasaragod during 1993 for effective transfer of technology to the farmers of Kasaragod district. The KVK takes part in National Demonstrations, on-farm research programmes etc.

Library

The Institute subscribes to 272 Indian and 175 foreign journals. A total collection of 19851 books, 20284 back volumes and 11016 other publications are available in the library. The Institute also publishes annual reports, newsletters, palms and cocoa abstracts, technical bulletins, extension pamphlets etc.
Future thrust

The thrust areas of research for the next 25 years include addition to the germplasm, cryopreservation of the germplasm, production of elite planting material tolerant to root(wilt) disease, establishing an advanced centre for MLO diseases, studying the interrelationship of the MLOs diseases in palms, crop loss survey of major pests and diseases and their integrated management, pesticide residue analysis, drought tolerance in coconut and cocoa, studies on organic farming, biofertilizers, fertigation, mechanised devices for dehusking coconut, automatic irrigation system etc. Investigations on value-added products; on-farm research etc. will also receive attention.

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