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SIXTY YEARS OF COCONUT RESEARCH IN INDIA

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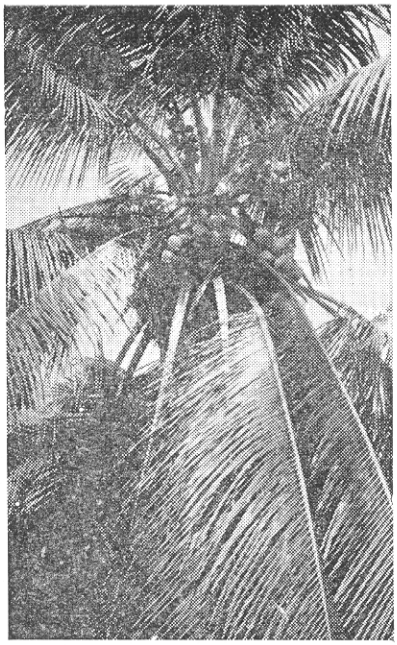


The first coconut hybrid planted in 1934

THE coconut palm is one of the most important tree crops of the world. It is the most beautiful among the palms with its slender but strong tall ringed trunk, adorned at the top by a graceful crown of giant featherlike leaves. The coconut palm yields more products of use to mankind than any other tree. Every part of the tree finds a variety of uses to mankind. In spite of its varied uses and economic importance, scientific research on the crop was initiated only from the year 1916.

The Beginning of Research

India was the first to take up systematic research on coconut. Research work was started at Kasaragod and Nileshwar, by the then Madras Government in 1916. The object of starting these Stations was to study in detail, cultural and other aspects of coconut cultivation in different types of soil. To obtain the representative soil types on which coconut palms are generally grown on the West Coast, three separate blocks [Nileshwar I (Pilicode), Nileshwar II and Nileshwar III] of vacant lands near Nileshwar, Cannanore District, Kerala were acquired. For preliminary investigations and immediate experimentation, a block of existing garden was also acquired at Kasaragod. The gravelly laterite types of soil of the Pilicode Station is usually met with in the high lands of the West Coast. Nileshwar II and Kasaragod Stations have deep red loamy soils. The largest area under coconut in the West Coast has this type of soil. The Nileshwar III Station was mainly started for investigating the feasibility of raising coconut in the littoral sand of which there is an extensive area in the coastal belt. The object has subsequently been considerably enlarged to include (1) botanical study of the palm including morphological characters and inherent and environmental variations, (2) manurial requirements under local conditions with ultimate aim of finding out the most profitable dose of common and easily available manures, (3) importance of proper cultivation of the interspaces in a coconut garden, (4) breeding work to evolve and distribute superior planting material which would ensure high yields, and (5) miscellaneous trials for the benefit of the coconut growers in particular and the agriculturists of the tract in general.

These Stations were under the control and guidance of the Deputy Director of Agriculture, Tellicherry, till 1931, when they were transferred to the Oilseeds Specialist, Lawley Road P.O., Coimbatore.

Indian Central Coconut Committee

The Second World War created conditions which meant higher prices for coconut. But the Indian coconut industry could not cope up with the situation. It was in these circumstances that the Indian Central Coconut Committee was set up in 1945 to take measures for the improvement, and development of coconut to serve the entire need of the country.

In 1947, to intensify research and development of coconut, the Indian Central Coconut Committee took over the Coconut Research Station, Kasaragod and reorganised research under four disciplines, namely agronomy, botany, cytogenetics and analytical chemistry. Almost at the same time the menace of the root (wilt) disease in the State of Travancore was noticed to assume serious proportions. With financial assistance from the ICAR, the State Department of Agriculture of the erstwhile Travancore State set up a pathological

laboratory at Quilon under the leadership of Dr K.P.V. Menon, Pathologist and Dr K.M. Pandalai, Soil Chemist. To intensify research on the diseases and pests, the Central Coconut Research Station, Kayangulam was set up in 1948, headed by Dr K.P.V. Menon as Joint Director,. Shri C.M. John assumed charge of the Director, Central Coconut Research Station at Kasaragod in 1950.

Fundamental Research

Under the able guidance of Dr J.S. Patel, the then Oilseeds Specialist, substantial fundamental studies were initiated for the first time in the world on the genetic and agronomical aspects of coconut. The scientists involved during this period were Sarvashri C.M. John, E.K. Nambiar and late Shri G.V. Narayana, Shri A.P. Anandan and the late Shri M.M.K. Marar. Introduction and evaluation of the germplasm, from within and outside India, exploitation of hybrid vigour in coconut, selection of mother palms, seed nuts and seedlings in the nurseries, correlations between morphological characters and yield, spacing, depth of planting, tillage and manuring were some of the important aspects studied. A monograph on the coconut palm by Dr J.S. Patel was brought out during this period by the Government of Madras.

Crop Improvement

Crop improvement work in coconut can be deemed to have started in the early thirties of this century when a dozen types from countries like New Guinea, Cochin China, Java, Siam the Philippines, Fiji, Strait Settlements, etc. were introduced and planted at the Coconut Research Station, Pilicode, for evaluation and selection. Progenies of these were later planted in 1940 at the Coconut Research Station, Kasaragod. Among these early introductions 'New Guinea', 'Cochin China', 'Java', 'Siam' and 'Laccadives' appeared to be promising. Promising types were also introduced from the important coconut-growing areas of India. Large scale introductions were started at Kasaragod during 1955 and at present the germplasm bank has an assemblage of 64 exotic collections from 26 countries and 32 indigenous varieties of coconut, the largest collection of coconut in the whole world.

The indigenous as well as the exotic collections were also screened for important economic characters. Another important genetic investigation initiated during this period was the evaluation of characters influencing the productivity of coconut. The results confirmed the utility of selection of high-yielding mother palms.

The First Hybrid

The first hybrid was produced by crossing local West Coast Tall with the Chowghat Dwarf Green and the hybrids were planted at Nileshwar in 1934 for evaluation. The TXD hybrids planted in 1934 at Coconut Research Station, Nileswar, which was the earliest plantation of hybrids in the Indian Union continued to give very satisfactory performance. Genetic investigation and breeding work were further intensified since 1947.

The demands for hybrid seedlings of coconut have ever been on the increase since the evaluation of the hybrids and now large scale production programmes are in progress to meet the increasing demand. Mention may be made of the elite seed garden at Kidu farm and the various other seed farms set up by the States and the Central Government. It is also worth mentioning in this context some enterprising coconut growers who have set up large scale plantations raised purely with hybrids; one such example is that of Shri M.K. Nambiar in Payanad village of Bhagamandala Taluk bordering Kerala.

Agronomy

Various experiments were conducted on the different agronomic practices best suited for coconut. Husk burial, trenching, green manuring, spacing, depth of planting, application of fertilizer, etc. These agronomic trials conducted in the earlier years were aimed at determining the optimum manurial and cultural practices. The sources of nutrients were mostly of organic origin like cattle manure, green manure, groundnut cake, ash, and bonemeal. Effect of inter and mixed

Earliest experimental plantings of coconut (1918) at the Central Coconut Research Station, Pilicode (Nileshwar)

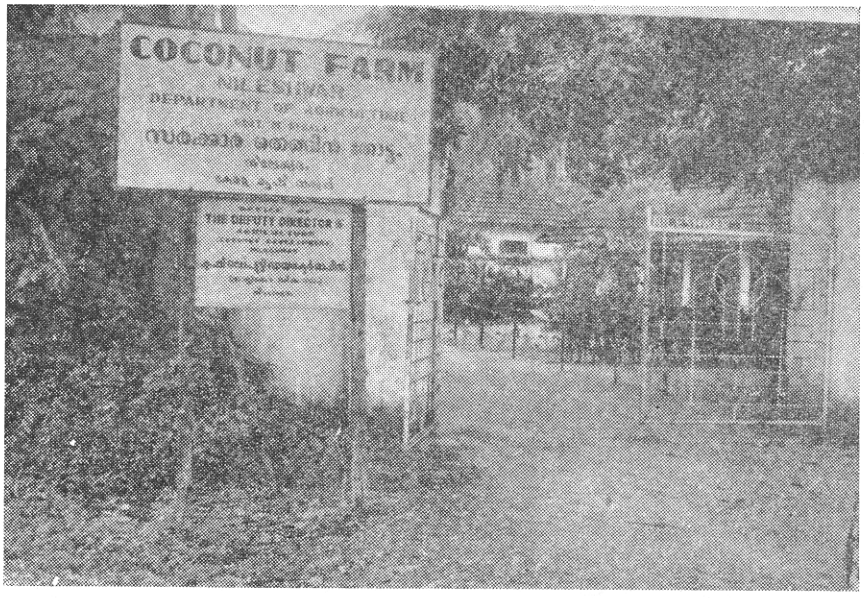
cropping and summer irrigation was not studied. These field trials provided sufficient indications on the agronomic requirements of coconut base on which later field experiments laid out on sound lines since 1950's. It has been possible to standardise the cultural and manurial requirements of coconut from these later experiments. Problems and prospects of inter and mixed croping, with special emphasis on small holdings, have been studied in greater detail.

In the fifties, diseases and pests of coconut palm were the major areas of thrust in research at the Central Coconut Research Station, Kayangulam. Control schedules were worked out for the major pests and diseases other than root (wilt), which went a long way in increasing production. The voluminous and valuable information gathered as a result of the investigations were compiled and a monograph by Drs K.P.V. Menon and K.M. Pandalai was published in 1958.

With financial assistance from the Indian Central Coconut Committee, research stations were also set up in different coconut-growing tracts of the country to investigate the local problems.

The Coconut Research Station, Balaramapuram was first started in 1948 at Pachaloor, 8 km from Trivandrum on the Trivandrum Agricultural College, Vellayani Road in the typical red loam soil. The Coconut Research Sub-Station, Kumarakom was started in December 1947 with the financial assistance from the Indian Central Coconut Committee in a plantation of Mr. R.G.A. Baker taken on lease. Later it was acquired by the Government in the year 1958. This station is situated in the eastern bank of Vembanad lake in Kumarakom village of Kottayam district.

A serious 'wilt' disease of coconut was reported from the coastal areas of Thanjavur and other southern districts of Tamil Nadu during early fifties. The object of the Pathology Laboratory at Muthupet was to investigate into the casual organisms and other factors responsible for the wilt disease which occurs in the coastal and in some interior districts of the State and to devise suitable control measures for the same.



Coconut Farm started in 1916 under the Department of Agriculture, Kerala, at Nileshwar

The Regional Coconut Research Station, Veppankulam was established in 1958. It was originally sponsored jointly by the Government of Tamil Nadu, and the erstwhile Indian Central Coconut Committee. At present this forms a subcentre under the All-India Co-ordinated Coconut and Arecanut Improvement Project.

The Regional Coconut Research Station, Arsikere was started in the year 1958 by the Department of Agriculture, Karnataka and was handed over to the Department of Horticulture in the year 1963. Once again it was transferred to the University of Agricultural Sciences, Bangalore, in the year 1965. This Station is located 7 km from Arsikere town and 1 km interior from the main Hassan-Arsikere road (via Harenahalli), Borankippal village.

The Regional Coconut Research Station, Ambajipeta was established on 18th May 1975. The total area of the farm is 24 ha and it was acquired permanently by the Government of Andhra Pradesh. This has since been taken over by the Andhra Pradesh Agricultural University, Hyderabad.

The All-India Co-ordinated Coconut and Arecanut Improvement Project in Orissa started in June 1975 at Golabandh. The project started functioning at Konark from 6th April 1976 as the former place was considered unsuitable for research work because the land was situated right on the seashore containing pure littoral sand alone.

The Regional Coconut Research Station, Ratnagiri was established in July 1955 by the Indian Central Coconut Committee. The Research Station is situated in Bhatiye Village. Since 1972 the Research Station is functioning under the technical and administrative control of the Konkan Krishi Vidyapeeth, Dapoli, Ratnagiri district. At present the centre is financed by the ICAR under the All-India Co-ordinated Coconut and Arecanut Improvement Project, Subcentre, Ratnagiri.

With the abolition of Indian Central Coconut Committee in April 1966 the Indian Council of Agricultural Research took over the Central Coconut Research Stations at Kayangulam and Kasaragod.