Research efforts on coconut improvement at Regional Agricultural Research Station, Pilicode

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Introduction

Coconut research in India was started as early as in 1916 with the establishment of research stations at Kasaragod, Nileshwar-I (Pilicode), Nileshwar II & III. These station were located the west coast of the erstwhile Madras State, representing the three major soil types on which coconuts are generally grown. Later, these stations were taken over by the Indian Central Coconut Committee in 1947. With the formation of Kerala State in 1956, three stations of Pilicode & Nileshwar came under the Department of Agriculture. The Kasaragod station was taken over by ICAR in 1970 and is functioning as CPCRI, Kasaragod. The Stations at Nileshwar II and Pilicode were taken over by the Kerala Agricultural University in 1972. During implementation of National Agricultural Research Project (NARP), these stations were pooled together elevated as Regional Agricultural Research Station with an objective of strengthening agricultural research in the Northern regions of Kerala, comprising the Districts of Kasaragod, Kannur, Kozhikode and Malappuram with effect from June 1st 1980.

The Regional Agricultural Research Station, Pilicode is located in Pilicode Village of Hosdurg Taluk in Kasaragod District and is geographically located at 13°N latitude and 75°E longitude at an elevation of 15m above MSL. It is about 55 km North of Kannur town by the side of NH-66. The Station is 130km South of Mangalore Air port and 3 km East of Cheruvathur Railway Station. Nileshwar station is situated in Nileshwar village of Hosdurg Taluk in Kasaragod District and is about 65 Km North of Kannur

town lying on either sides of NH-17 and is about 1 .6 km South West of Nileshwar Railway Station. The extent of area of RARS, Pilicode is 57.87 ha and that of Nileshwar is 17.25 ha. The Station receives 3379 mm of average annual rainfall. The mean maximum and minimum temperature of the location is 33°C and 23°C respectively.

The thrust area of research is to perform as the lead centre for research on coconut and coconut based farming system. Hybrid vigour in coconut was first reported from this station. The first ever hybrid T x D (WCT x CDG) was developed and planted at Nileswar campus during 1936 which still exists at this campus. Later under the crop improvement programme this station had released the high yielding coconut varieties namely, Lakshaganga (Laccadive Ordinary X Gangabondam), Keraganga (West Coast Tall X Gangabondam), Ananthaganga (Andaman Ordinary and Gangabondam), Kerasree (West Coast Tall X Malayan Yellow Dwarf), Kerasowbhagya (West Coast Tall X Straight Settlement Apricot), Kerasagara (Pedigree is Seychelles of South East Asia) and Keramadhura (Pedigree selection from Malayan Green Dwarf). Of these Keramadhura is a variety suited for tender nuts. It has good copra yield compared to dwarf palms. Most of the package of practice recommendations of coconut for management and crop protection were developed from this station.

The station maintains a unique collection of coconut germplasm consisting of 35 exotic and 40 indigenous types. Philippines Ordinary, Lakshadweep Ordinary, Cochin China, Java, New Guinea and Spicata were found to be highly suitable for cultivation in the northern zone under rainfed conditions. Philippines Ordinary and Lakshadweep Ordinary ranked first in yield of copra and number of nuts, respectively. Under All India co-ordinated programme of Palms two programmes are being conducted namely, collection, conservation and evaluation of local germplasm of coconut and performance of Dwarf x Dwarf hybrids of coconut in different agro- climatic regions. Third generation inbred plantation is another unique programme of this station.

The details of varieties released from Regional Agricultural Research Station, Pilicode are given below.

Lakshaganga

This variety was developed through hybridisation method. Parentage is Laccadive Ordinary X Gangabondam. It was released in 1988. The features of this variety are early bearer, suitable for rainfed system, drought tolerance, copra weight 195 gm, and 70 % oil content. Key characteristics are tall tree with nut weight of 677 gm, weight of husked nut is 380gm. Annual productivity is 108 nuts/tree. It can be recommend for cultivation at any part of Kerala.

Keraganga

This variety is developed through hybridisation method. Parentage is West Coast Tall X Gangabondam. It was released in 1989. This variety takes five years for flowering, 75% more copra yield (201 gm) than WCT, 69 % oil content. Key characteristics are tall tree with nut having 20.20 cm polar diameter, 16.45 cm equatorial diameter and 1182 gm weight. Weight of husked nut is 760 gm and Kernel thickness is 1.20 cm. Annual productivity is 100 nuts/tree. It can be recommend for cultivation in rainfed, coastal and mid-land regions.

Ananthaganga

This variety was developed through hybridisation between Andaman Ordinary and Gangabondam. It was released in 1989. The features of this variety are it takes six years for first harvest. Copra yield (216 gm)- 77%, which is more than WCT, drought tolerant, oil content of 68%. Key characteristics are tall tree


Lakshaganga


Keraganga


Ananthaganga


Kerasree


Kerasowbhagya

Keramadhura

with nut having 22.6 cm polar diameter, 16.85 cm equatorial diameter and 1100 gm weight. Weight of husked nut is 795 gm and kernel thickness is 1.29 cm. Annual productivity is 95 nuts/tree. It can be recommend for cultivation in rainfed, coastal and mid-land regions.

Kerasree

This variety is developed through hybridisation method. Parentage is West Coast Tall X Malayan Yellow Dwarf. Released in 1992. it takes six years for first harvest. Suitable for all types of soil under rainfed system and the copra yield is (216 gm). The oil content is 66%. Key characteristics are tall tree, light green nut with 17.02 cm polar diameter, 16.52 cm equatorial diameter and 1011 gm weight. Weight of husked nut is 524.65 gm and Kernel thickness is 1.13 cm. Annual productivity is 140 nuts/tree. It can be recommend for cultivation in rainfed, coastal and mid-land regions.

Kerasowbhagya

This variety is a hybrid between West Coast Tall X Straight Settlement Apricot. It was released in 1993. The features of this variety are suitable for moderate management conditions and is drought tolerant. Copra content is 196 gm and the oil content is 68%. Key characteristics are tall tree, light orange nut with 21.08 cm polar diameter, 17.07 cm equatorial diameter and 1019 gm nut weight. Weight of husked nut is 694 gm and the kernel thickness is 1.3 cm. Annual productivity is 130 nuts/tree. It can be recommended for cultivation in coastal regions.

Kerasagara

This variety is developed through selection method of crop improvement. Parentage is Seychelles (South East Asia). (Was released in 2006.) The features of this variety are, it takes eight years for flowering and gives 75 % more copra yield (203.4 gm) than WCT and oil content 68 %. Key characteristics are tall tree, light green nut with 27 cm polar diameter, 1.05 cm equatorial diameter and 1300 gm nut weight. Weight of husked nut is 575 gm and kernel thickness is 1.5 cm. Annual productivity is 99 nuts/tree. It can be recommended for cultivation throughout Kerala.

Keramadhura

This variety is developed through selection from Malayan Green Dwarf. It was released in 2013 as a dual purpose variety suited for tender coconut and copra products. It is a superior genotype suitable for dual purpose with excellent quality as tender nuts. The copra yield is (196 gm/nut). Key characteristics are semi-tall tree, oval nut, crown and nuts green in colour, thickness of kernel is 1.27 cm. Annual productivity is 119 nuts/tree. It can be recommend for rainfed and irrigated conditions.

Conclusion

Under crop production programme, the station has been producing and supplying hybrid seedlings of the above varieties. These varieties are preferred throughout the state and in many places of southern India. Distribution of seedlings starts from June and completes by August through farmers registration. A network programme on centre of excellence in value addition of agricultural crops is being operated at this station. Technologies for commercial level production of various value added products from coconut have been standardised at this centre. This includes Virgin Coconut Oil (hot & cold processed), Danthapala oil, coconut water syrup, coconut water vinegar, coconut water wine, coconut chutney powder, coconut chips, coconut pickle, coconut curry paste, coconut laddu and face cream. The training has conducted training programmes on value addition in coconut based products for the farmers of North Kerala. ■