काजू समाचार
CASHEW NEWS

भा.कृ.अनु.प. - काजू अनुसंधान निदेशालय, पुत्तूर के अर्धवार्षिक वार्तापत्र

HALF YEARLY NEWSLETTER OF ICAR-DIRECTORATE OF CASHEW RESEARCH, PUTTUR

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FROM THE DIRECTOR'S DESK

New Varieties and Hybrids for Higher Productivity in Cashew

During the last two to three years, there is a huge demand for the planting material of high yielding varieties of cashew. The increased market price of the raw nuts of cashew in the recent years along with several other advantages of crop has fueled the interest among farmers. The advantages of cashew are many; it is predominantly a dry land crop with adaptability to varied soil and climate situations, low pest and disease incidences, comparatively less pre-bearing age for economic harvest and lesser dependence on labour. Moreover, both nut and cashew apple can be utilized for direct consumption and preparation of various products. Hence, there is a considerable scope for rural home scale industries. Further, it does not require a great deal of post harvest handling to sell in the market. Since the domestic as well as international market for cashew is ever increasing, farmers justifiably look at this as a crop of choice compared to other plantation/fruit crops which can be grown without irrigation.

In view of growing demand, concerted efforts have been carried out in cashew varietal improvement by ICAR–Directorate of Cashew Research, Puttur (ICAR-DCR) and other cashew research stations in the country. In recent years, many superior and high yielding varieties have been developed and recommended for cultivation. Among these, the H-130 of ICAR-DCR, Puttur is one of the most promising hybrids in the bold nut category (12-13g nut weight) with cluster bearing habit, positive response to pruning, high yield potential and suitability to ultra density planting. This hybrid is highly precocious and bears flowers and fruits in the very first year of planting and the economic harvest can be achieved in second or third year of planting under ultra-density planting system. The performance evaluation of the hybrid under ultra density planting at 2.5 m x 2.5 m has resulted in the yield of more than 2.5 t ha^{-1} in the 4^{th} year of planting. This is in totally degraded waste land under unirrigated condition. The kernels are in the grade category of W110 – W150 which is not available hitherto in the market. The Directorate has also evolved many more promising genotypes *viz*. NRC- 493 with very vigorous growth with bold nut (14-15g) and cluster bearing type suitable to degraded lands to cover the space in short span of time. Further NRC-492, a dwarf and medium yielding genotype with cluster bearing and small nuts (around 6g) is suitable for ultra density

planting (requires less pruning), H-126, a bold nut medium to high yielding hybrid, H-32-4, a high yielding medium nut size variety have also been identified. These are in the various stages of evaluation and release.

Besides, several new cashew varieties and hybrids have been identified and released by various centers of All India Coordinated Research Programme on Cashew in past few years. Vengurla-9 released by AICRP Cashew Research Centre at Vengurle, Maharashtra is a dual purpose (apple and nut) variety. Further, Balabhadra released from AICRP Cashew Research Centre, Bhubaneswar, Odisha is a variety with bold nut and cluster bearing character in addition to high yield. AICRP Cashew Research Centre at Jhargram, West Bengal has released Jhargram-2 variety which is claimed to be less susceptible to Tea Mosquito Bug damage. Further, Goa- 4 released from Goa Centre is a dual purpose (apple & nut) variety. In essence, there are a number of varieties/hybrids suitable for most of the agro-climatic conditions where cashew is grown.

These varieties/hybrids can bring tremendous improvement in the production of raw cashew nuts with improvement in productivity of the crop. Adoption of suitable varieties in ultra density planting system for early benefits and processing at farm level or by Farmers Producers Cooperatives can bring much needed economic prosperity to the farmers.

M.G. NAYAK
Director (Acting)

FOCUS ON RESEARCH

Pollinators of Cashew, Their Foraging Activity and Bee Flora

K. Vanitha and T.N. Raviprasad

Pollination plays an important role in the reproduction and fruit set of flowering plant communities, and insects play a key role in pollination of majority of plants. Cashew (*Anacardium occidentale* L.) is an insect pollinated crop having sticky pollen grains emphasizing the importance of pollination by the insects and the wind plays little role in cashew pollination. In a panicle, hermaphroditic flowers contribute to less than 10 per cent. The short filament of stamens of hermaphrodite flowers makes self pollination difficult and favours cross pollination (Fig. 1). In general, anthesis occurs between 9.00 am and 2.00 pm, and during the period of study, the peak period of anther dehiscence is from 9.30 am to 11.30 am.

Though several studies showed that fruit set in cashew is mainly influenced by the activity of pollinators, very little information is available about the effective pollinators of cashew. Documentation of pollinators is very important in a particular locality to understand and address the issue of pollination so as to increase cashew productivity. Studies were undertaken at ICAR-DCR, Puttur to document insect pollinator diversity in cashew, their abundance, foraging behavior and bee flora.

Bees diversity, abundance and foraging activity

It was found that, 40 insect species belonging to 13 families of three insect orders visit cashew flowers. Many of the dipterans are just visitors of cashew flowers, while, wasps move among cashew flowers frequently for nectar as well as prey insects. Similarly, several ant species move over the cashew inflorescence, mainly for extra floral nectarines and honey dew from certain sucking pests. Still, the erratic movement of ants over the flowers may collect pollen and pollinate the flowers, which need further analysis. Based on the observations on foraging activity of different flower visitors, 13 bee species were considered as pollinators of cashew (Fig. 2), in which eight species belong to Apidae (75.6 % abundance) and five belong to Halictidae (Table 1).

Fig. 1. a. Hermaphrodite cashew flower showing style and long stamen, b. Long stamen and staminoids, c. pollen grains deposited on stigma

Table 1. Pollinators of cashew and their abundance at Puttur, Karnataka

Family	Species	Species abundance (%)
Apidae	*Apis cerana indica* F.	16.7
	Apis florae L.	10.3
	Braunsapis picitarsus (Cameron)	20.0
	Braunsapis sp.	8.1
	Ceratina hieroglyphica Smith	11.4
	Ceratina binghami Cockerell	1.5
	Ceratina sp.	0.4
	Tetragonula sp.	5.0
Halictidae	*Lasioglossum* sp. 1	2.2
	Lasioglossum sp. 2	0.6
	Pseudapis oxybeloides Smith	17.6
	Pseudapis sp.	3.1
	Seledonia sp.	3.1

The stingless bees which start early foraging, visited mostly for extra floral nectarines from leaves, flower base, developing nuts and apples, nectar etc. Depending on the sun shine, initiation of activities of bee species was noticed and the peak activity was between 11.00 am and 1.00 pm (Table 2). It is important to note that peak foraging period of pollinators coincides with peak anther dehiscence in cashew, which is very much advantageous for effective pollination in cashew. Time spent by *A. c. indica* for nectar and *P. oxybeloides* for pollen was short (*i.e.,* 1-4 sec), while, it was 3-21, 8-16 and 5-11 sec for *A. florea*, *B. picitarsus* and *Tetragonula* sp respectively. Bees of *C. hieroglyphica*, *Lasioglossum* sp. 1 and *Seledonia* sp. spent 2-6 sec on individual flower.

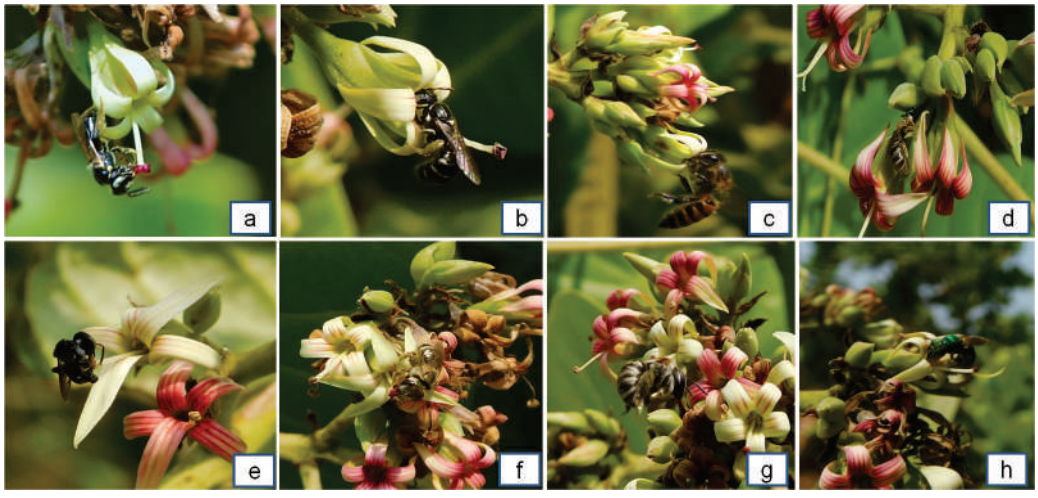

Fig. 2.Cashew pollinators, a. *Braunsapis picitarsus*, b. *Ceratina hieroglyphica*, c. *Apis cerana indica*, d. *Lasioglossum* sp., e. *Tetragonula* sp., f. *Seledonia* sp., g. *Pseudapis oxybeloides*, h. *Ceratina binghamii*.

Table 2. Foraging activity of important bee species in cashew

Bee species	No. of flowers visited/ trip	Peak foraging hours	Time spent on each flower (sec)
A. c. indica	6-20	10.00 -16.00	1-4
A. florea	3-11	10.00 -14.00	3-21
B. picitarsus	4-7	11.00 -13.00	8-16
C. hieroglyphica	3-5	11.00 -14.00	2-6
Tetragonula sp.	2-3	08.00 -14.00	5-11
Lasioglossum sp. 1	2-3	11.00 -13.00	2-5
P. oxybeloides	3-5	11.00 -13.00	1-4
Seledonia sp.	3-5	11.00 -13.00	2-5

Foraging reward

Bees in general visited cashew flowers for nectar as well as pollen. Certain bees visited mainly for pollen, while, few bees mainly for nectar and extra floral nectarines. For *A. c. indica* and *A. florea*, nectar was the major foraging reward, which collected pollen accidentally upon touch of its body parts on anthers. For *Tetragonula* sp., foraging reward was nectar from extra floral nectarines following pollen and nectar. Since pollen was the foraging reward for most of the bee species, fresh male flowers were most preferred. Most bees collected pollen followed by nectar in the same male flower or vice-versa. Nevertheless, it was observed that the same hermaphrodite flower was visited by multiple bee species consequently thus ensuring pollination. Almost all bee species preferred fresh flowers with white petals for foraging.

A. c. inidca colonies were established at Shantigodu farm of DCR, Puttur to understand its potential of establishment and sustenance in cashew ecosystem. The colonies shifted during December -January when cashew was in bloom could establish successfully and yielded up to 4 kg honey per hive with a super chamber within 3-4 months period. The quality of extracted unprocessed honey was analyzed for its physico-chemical properties and found to be of superior quality. Hence, apiary can be helpful to cashew farmers.

Bee flora

During non-flowering period, bees also foraged on surrounding flora. The weed bee flora in the cashew plantations include *Spermacoce hispida*, *Alternanthera* spp., *Mimosa pudica*, *Tridax procumbens*, *Lantana camara*, *Thevetia* sp., *Ixora* spp., *Leucas aspera*, *Vedalia trilobata*, *Melastoma malabathricum*, *Blumea* sp., *Passiflora foetida* etc. Flowers of perennials *viz., Terminalia* spp., *Caesalpinia* sp., *Antigonon leptopus*, *Semecarpus pranau*, *Peltophorum pterocarpum, Delonix regia, Cassia* spp. also attracted plenty of bee species. Flowers of *V. trilobata* were visited by *A. c. indica, A. dorsata, A. florea, Ceratina* spp. *Braunsapis* sp. and *Xylocopa* sp. Among the flora, *Antigonon leptopus* (Polygonaceae) which profusely blooms throughout the year was recorded as most preferable for *Braunsapis* sp., *Certaina* spp., *A. florea* and few other wild bees, thus can be utilized for conservation of bee species. Enhancing bee flora will ensure bee survival and conservation which in turn enhance cashew pollination and productivity.

Fig. 3. Bee flora a. *A. leptopus*
b. *V. trilobata,* c. *T. procumbens*

PROGRAMMES ORGANIZED

Annual Cashew Day - 2018

The annual cashew day was celebrated on 21st March 2018 at the Directorate of Cashew Research, Puttur, Dakshina Kannada. The programme was inaugurated by Dr. Narayanaswamy, Vice Chancellor, UAHS, Shivamogga. On the occasion, the cashew hybrid of ICAR-DCR, H-130 was released for evaluation in the farmers' fields. This hybrid has precocious flowering behaviour and suitable for high density planting. It has bold nuts weighing around 12-13 g and yield levels are also high. In the programme, the Memorandum of Understanding for licensing of six cashew nut processing machinery technologies was exchanged with the private company, Pro B products, Bengaluru. In the inaugural address, Dr. Narayanaswamy congratulated the Director and institute for the achievements made over the years on cashew production and processing technologies. Shri. Gurunath Odugoudar, Progressive farmer of Gadag district, Former board member of University of Agricultural Sciences, Dharwad,

shared his experience on introduction of cashew crop into the non-traditional cashew growing regions of Karnataka. Shri B.K. Ramesh, ICAR Governing Body member and Dr. Ananda K.S., Head, Regional Station, ICAR- Central Plantation Crops Research Institute, Vittal, also spoke on the occasion. Later, an interactive session between farmers and scientists was held. On this occasion, an exhibition was arranged on cashew production technologies, different cashew varieties and cashew apple products. More than 200 cashew farmers participated besides nursery men, representatives of KVK, development departments and scientists.

Foundation Day of ICAR-DCR 2018

ICAR-Directorate of Cashew Research, Puttur celebrated its 32nd foundation day on 18th June 2018. The function started with release of "Ultra High Density Planting (UHDP)" technology developed at ICAR-DCR by Shri. Sanjeeva Matandur, Member of Legislative

Assembly, Puttur constituency, Karnataka. It was followed by the lecture on "Ultra High Density Planting in Cashew" by Dr. M. G. Nayak (Acting Director). In his inaugural address, Shri. Sanjeeva Matandur talked about role of agriculture in Indian society and the recent impacts of urbanization on agriculture. Guest of Honour, Shri. Prakash Natelkar, Managing Director, Karnataka Cashew Development Corporation, Mangaluru, congratulated the Director and institute for the achievements made over the years for improving the economic status of the cashew farmers of the country. Dr. Ventkatesh, N. Hubballi, Director, Directorate of Cocoa and Cashew Development, Kochi, called for adoption of a village by ICAR-DCR, to promote cashew cultivation. He said there is a large scope for increasing the cashew production in the country as there is 15-20% rise in

the domestic consumption of cashew. Guest speaker, Fr. Prakash A. Monteiro, Campus Director, St' Philomena College, Puttur, spoke on ethics in profession. Another guest speaker, Shri. Prasanna Rai, Head, Botany Department, St' Philomena College, Puttur, stressed on maintaining soil health and judicious use of natural resources. More than 120 participants consisting of cashew farmers, representatives of KVK, development departments, media and scientists attended the function.

International Day of Yoga

International Day of Yoga was celebrated at ICAR-DCR on 21st June 2018 to spread the awareness about yoga among staff members. On the occasion, Shri K. Prasanna explained about the importance of yoga, benefits of different *asanas*, how the different *asanas* need to be performed and the science behind each of the *asanas*. He demonstrated the sequence of many *asanas* along with the Suryanamaskar. The programme concluded with a pledge that yoga will be performed by the staff regularly for building a strong and healthy India.

MEETINGS

राजभाषा हिन्दी कार्यान्वयन

इस छः माही में निदेशालय में राजभाषा कार्यान्वयन समिति की दो तिमाही बैठकों का आयोजन हुआ। इसके अतिरिक्त पुत्तूर नगर राजभाषा कार्यान्वयन समिति (नराकास) की एक अर्धवार्षिक बैठक भी आयोजित हुई।

7 फरवरी को पुत्तूर नराकास की 33वीं अर्धवार्षिक बैठक का आयोजन हुआ। बैठक में पुत्तूर नगर के विभिन्न केंद्र सरकारी कार्यालयों के प्रतिनिधि भाग लिए। बैठ्क में इन कार्यालयों में हो रही हिन्दी के काम-काज के बारे में चर्चा हुई और जरूरी दिशा निर्देश भी दिए गए। इस बैठक के अवसर पर राजभाषा कार्यान्वयन कार्यालय, बेंगलुरू से आए राजभाषा अधिकारी उपस्थित थे। उन्होंने सदस्यों को अर्ध वार्षिक रिपोर्ट भरने के बारे में मार्गदर्शन किया।

निदेशालय के और नराकास के सदस्य कार्यालयों के कर्मचारियों के लिए नियमित रूप से हिन्दी कार्यशालाओं का आयोजन किया गया। कार्यशाला में श्री टेकचंद, उपनिदेशक (कार्यान्वयन), बेंगलुरू द्वारा दैनिक काम-काज में उपयोग होनेवाले पत्र लेखन, मसौदा लेखन, नोट लिखना आदि के बारे में प्रशिक्षण दिया गया।

Research Advisory Committee (RAC) Meeting

The 1st meeting of 8th RAC was held during 1st and 2nd June 2018. The meeting was started with the introductory remarks of Chairman of RAC, Dr. R.S. Rathore. Following this, Action Taken Report of previous RAC recommendations was presented by Dr. J. D. Adiga, Principal Scientist & Member Secretary (RAC). This was followed by remarks from members of RAC, Dr. W.S. Dhillon, ADG (Hort-1), Krishi Bhawan, ICAR, New Delhi and Dr. P.C. Lenka, Former Dean, OUAT, Bhubaneswar. Dr. Subhash Chander, Principal Scientist (Agricultural Entomology), ICAR-IARI, New Delhi and Dr. Hebbar, P.S., Principal Scientist (Plant Physiology and Biochemistry), ICAR-CPCRI, Kasaragod were the subject matter specialists for the RAC. Thereafter, presentations on progress of research in Crop Improvement, Crop Management, Crop Protection and Post Harvest Technology were made by scientists of DCR. For each section, many useful suggestions were offered by RAC members.

Institute Research Committee (IRC) Meeting

The 31st annual meeting of Institute Research Committee (IRC) of ICAR- DCR, Puttur was held on 27th and 28th June, 2018 under the Chairmanship of Dr. M.G. Nayak, Director (Acting). There were five technical sessions chaired by experts of the field. Dr. M.K. Rajesh, Principal Scientist (Biotechnology), ICAR-Central Plantation Crops Research Institute, Kasaragod was the resource person for the technical session on 'Crop Improvement'. Dr. G.K. Mukunda, Professor (Horticulture), UAS, Bengaluru was the resource person for 'Crop Management'. For Crop Protection and Post Harvest Technology sessions, Dr. P. Shivarama Bhat, Principal Scientist (Agricultural Entomology), and Dr. R.B. Tiwari, Principal Scientist (Horticulture), Division of Post Harvest Technology, ICAR-Indian Institute of Horticultural Research, Bengaluru were the resource persons, respectively.

In each session, the results of various ongoing projects were presented along with new project proposals by the scientists of DCR and were discussed in detail. The technical programme of the projects for the year 2018-19 was also finalized.

TRAININGS

Training Programme on Cashew Production Technology

A training programme on "Cashew Production Technology" was organised for Tribal farmers of Chembu village, Madikeri Taluk on 27th February 2018 at Sri Vishnumurthy temple, Kudrepaya. The Chief Guest of the programme, Mr. Madhava. K. K, President, Gram Panchayath, Chembu urged the tribal farmers to take the full benefit of the financial assistance given by different government agencies. Dr. J. D. Adiga, Principal Scientist (Horticulture), ICAR-DCR, Puttur delivered detailed lecture on various aspects of cashew production technologies like varieties, site selection, planting, maintenance of plants with proper pruning and training, fertilizer application, soil and water conservation, pest management, harvesting and value addition. Later, the trainees were taken to the field where different

aspects of managing cashew plants, identification of pests like CSRB and TMB followed by their management were explained. The programme was attended by about 50 tribal farmers.

TRANSFER OF TECHNOLOGY

Agricultural Education Tour to Kerala

Eight TSP farmers were taken on agricultural education tour to Kerala during 12th to 14th March 2018. On the first day, the farmers visited ICAR-Indian Institute Spices Research, Kozhikode and were exposed to pepper propagation techniques, nutmeg and turmeric varieties. At Cashew Research Station, Madakkathara, Kerala, they were exposed to different cashew varieties, cultivation practices and value addition aspects of cashew apple. Later, a visit was made to Agricultural Research Station, Mannuthy, where the concept of Food Security Army was explained and different machineries for paddy cultivation were shown. They also visited a farmer's cashew plantation to learn about the eco-friendly ways of controlling Tea Mosquito Bug. Subsequently, they visited Regional Research Station, Pilicode to know about different value addition possibilities in coconut and cashew.

Exhibition

Mega Kisan Mela and Agri-Business Expo - 2018: ICAR-DCR, Puttur participated Mega Kisan Mela and Agri-business expo at ICAR-Central Plantation Crops Research Institute from 5th to 10th January 2018. The Directorate put up an exhibition stall showcasing the technologies developed by the Directorate and AICRP centres on cashew. The stall was visited by many farmers, students, extension functionaries, researchers and public from different parts of Kerala, Karnataka, Tamil Nadu, Gujarat and other regions of the country.

National Horticulture Fair - 2018: ICAR-DCR, Puttur participated in the National Horticulture Fair organised by ICAR-Indian Institute of Horticultural Research, Bengaluru during 15th-17th March, 2018. The technologies on varieties, production aspects, post harvest handling etc were exhibited. Scientists of ICAR-DCR attended to queries of visitors. More than 5000 participants from Karnataka, Tamil Nadu, Telengana, Andhra Pradesh and Maharashtra visited the stall.

Mera Gaon Mera Gaurav (MGMG) Programme

Programme at Aletti: A MGMG programme was organised at Aletti village, Dakshina Kannada district of Karnataka on 23rd February 2018. Twenty five farmers had participated and issues on scientific cultivation of cashew were discussed.

Programme at Irde, Bettampady: A MGMG programme was also organised by the scientists of ICAR-DCR, Puttur at Irde, Bettampady village of Dakshina Kannada district, Karnataka on 28th March 2018. More than 20 people including farmers, Gram Panchayat members and students attended the programme. In the interaction session, farmers were given information about management of cashew and other plantation crops.

Advisory Visits / Consultancies

- Dr. M.G. Nayak, Director (Acting) made advisory visits related to cashew production practices at Hogalagere and H-Cross, Kolar on 19th April 2018.
- Dr. M.G. Nayak, Director (Acting) co-chaired the technical session on plantation crops in Seminar on Breeding of perennial crops held at ICAR-CPCRI, Regional Station, Vittal on 27th April 2018.
- Dr. M.G. Nayak, Director (Acting) participated in the National level training on cashew production technology for officers of development departments organised by DCCD, Kochi and delivered a lecture on "Cashew varieties and high density orcharding at Bankers Institute of Rural Development (BIRD), Mangaluru on 30th May 2018.
- Dr. M.G. Nayak, provided consultancy to the BAIF, Vishakapatnam and SERP – Vijayanagaram, Andhra Pradesh on rejuvenation of cashew during 30th June and 1st July 2018.
- Dr. D. Balasubramanian, Principal Scientist (AS & PE) provided technical consultancy to M/s Helpers of Handicap, Kudal, Maharashtra from 26th to 28th May, 2018. Lajawab Cashew Processing is operating under M/s Handi Help Welfare Foundation employing 142 numbers of physically challenged people. Problematic areas in the line of processing were identified and appropriate solutions were suggested. Skill enhancement training was imparted. Besides, machinery requirement for improving performance of processing was also recommended.

Technology Commercialisation/ Trade Mark/ Patents

- Six post harvest technologies developed by Dr. D. Balasubramanian, Principal Scientist (AS & PE) at this Directorate *viz.,* Radial arm type cashew kernel extracting machine; Rotating type roasting machine for raw cashewnuts; Dual mode dryer for raw cashewnuts; Hydraulic juice extractor for cashew apples; Concentric drum type rotary sieve grader for raw cashewnuts and Cashew shell cake based updraft gasifier have been commercialized to private machinery manufacturer on the basis of non-exclusive licensing. A MoU was signed between ICAR-DCR, Puttur and M/s Pro B Products, Bengaluru on 21.03.2018.
- Trademark is registered for the 'ICAR-DCR Institute's logo' (3217680) on 01.02.2018.

TV Programmes / Radio Talk

B.M. Muralidhara	Delivered a radio talk on "Future fruit crops of Coorg region" in the series of radio programmes organized by department of Horticulture, Madikeri	12th January 2018
M.G. Nayak	Delivered lecture on "Ultra Density Planting" through AIR, Mangaluru	22nd February 2018

Supply of Planting Materials

A total of 63, 767 cashew grafts of high yielding varieties were supplied to the farmers and developmental agencies under institute revenue generation programme, from Kemminje and Shantigodu farms during January - June, 2018.

Technical Publications

1. Annual Report – ICAR-Directorate of Cashew Research, Puttur, Karnataka (2017-18), Eds: Dr. Mohana, G.S., Dr. Vanitha K. and Dr. Siddanna Savadi .

Visit of Dignitaries

Name	Address	Date of visit
Dr. Narayanaswamy	Vice Chancellor, UAHS, Shivamogga	21 March 2018
Shri. Sanjeeva Matandur	Member of Legislative Assembly, Puttur	18 June 2018
Shri. Prakash Natelkar	Managing Director, Karnataka Cashew Development Corporation, Mangaluru	18 June 2018
Shri. Ventkatesh Hubballi	Director, Directorate of Cocoa and Cashew Development, Kochi	18 June 2018
Fr. Prakash A Monteiro	Campus Director, Philomena College, Puttur	18 June 2018
Dr. R.S. Rathore	Chairman, Research Advisory Committee	1 to 2 June 2018
Dr. W.S. Dhillon	ADG (Hort-1), Krishi Bhawan, ICAR, New Delhi	1 to 2 June 2018
Dr. P.C. Lenka	Former Dean, OUAT, Bhubaneswar	1 to 2 June 2018
Dr. Subhash Chander	Principal Scientist (Agricultural Entomology), ICAR-IARI, New Delhi	1 to 2 June 2018
Dr. Hebbar. P.S.	Principal Scientist (Plant Physiology and Biochemistry), ICAR-CPCRI, Kasargod	1 to 2 June 2018
Dr. M.K. Rajesh	Principal Scientist (Biotechnology), ICAR- Central Plantation Crops Research Institute, Kasaragod	27 June 2018
Dr. G. K. Mukunda	Professor (Horticulture), UAS, Bengaluru	27 June 2018
Dr. P. Shivarama Bhat	Principal Scientist (Agricultural Entomology), ICAR-Indian Institute of Horticultural Research, Bengaluru	28 June 2018
Dr. R.B. Tiwari	Principal Scientist (Horticulture), Division of Post Harvest Technology, ICAR-Indian Institute of Horticultural Research, Bengaluru	27-28 June 2018

STAFF NEWS

Inter- Institutional Transfers

- Dr. Janani P, Scientist (Spices, Plantation, Medicinal and Aromatic Plants) has been relieved of her duties w.e.f. 30-06-2018 (AN), consequent on her transfer to ICAR-Central Potato Research Institute, Shimla, Himachal Pradesh.

Retirement

- Shri. K. Seetharama, Technical Officer retired on superannuation on 31st May, 2018.
- Shri. S. Pernu, Skilled Support Staff retired on superannuation on 31st May, 2018.

Honours/Recognitions/Awards

- Dr. K. Vanitha, Scientist (Agric. Ento.) - Received 'Dr. Mrs. Jagadiswari Rao Women Scientist Award – 2017' of the Applied Zoologists Research Association, Bhubaneswar during XVI AZRA International conference on "Applied Zoological Research for Sustainable Agriculture and Food Security," 9-11 February, 2018 at Banaras Hindu University, Varanasi.

- Dr. Preethi. P, Scientist (Fruit Science) - Recognised as the PG teacher at University of Agricultural and Horticultural Sciences (UAHS), Shivamogga w.e.f. 12-03-2018 and University of Horticultural Sciences (UHS), Bagalkot w.e.f. 21-03-2018. She also received EET CRS Top list, 2018 Scientist award by the Education Expo TV team, Greater Noida, India on 18th March 2018 at Hyderabad.

- Dr. Siddanna Savadi, Scientist (Biotechnology) - Received Young Achiever Award 2017 from Society for Advancement of Human and Nature (SADHNA), Nauni, Himachal Pradesh during 24th February 2018. He was also recognised as the PG teacher at University of Agricultural and Horticultural Sciences (UAHS), Shivamogga w.e.f. March 2018 and University of Horticultural Sciences (UHS), Bagalkot w.e.f. 24th April 2018.

- Mr. B.M. Muralidhara, Scientist (Fruit Science) - Received Top 25 Young Scientist award by the Education Expo TV Research Branding Company Award during 17th June 2018 at Bengaluru.

ICAR – Inter Zonal Sports Meet

- ICAR-Inter Zonal Sports Meet was held at ICAR-National Academy of Agricultural Research Management, Hyderabad during 21-25, February 2018, in which Mr. P. Abdulla, Chief Technical Officer bagged runner up in Carrom.

भाकृअनुप
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