



FROM THE DIRECTOR'S DESK



INDIAN CASHEW SCENARIO: ANTICIPATED CHALLENGES AND ESSENTIAL INTERVENTIONS

Indian cashews are preferred world over in comparison to the cashew kernels of other origin. The major importing countries are UAE, Japan, Netherlands, Saudi Arabia, USA, UK, Canada, France, Israel and Italy. As per the export statistics of cashew kernels; currently UAE is the largest importer of Indian cashews, which accounts for about 29.0 per cent of overall exports during 2021-22. UAE, Japan and Netherlands are among the top 3 importers of Indian cashews, with a share of exports being 13.0 per cent and 9.0 per cent, respectively. This strong demand for Indian cashews in international market continues to sustain economic growth and employment generation in major cashew-growing states.

Import of raw cashew nuts has a crucial role in the sustenance and growth of the Indian cashew industry, which accounts for more than half the production of processed and value-added cashew kernels for the domestic and international market. Various initiatives both at the state level and national level for promoting area expansion under cashew cultivation have given positive results. However, a lag time of 4 to 5 years is to be expected for availability of the domestic raw cashew nut (RCN) production for processing. Till then, the Indian cashew industry is bound to depend on imported nuts for continuing their activities.



Currently, the African Cashew Alliance (ACA) has reported that RCN from Benin sell at higher prices in international market compared to competitors in West Africa. Benin RCN are available considerably earlier; apart from the processing characteristics, kernel quality, kernel colour and taste. The RCN from Benin; is the most favoured of the imported origin nuts in India, which accounts for 20 per cent of imported RCN. The major cashew producing countries, Kenya, Tanzania and Mozambique have formed a co-operative framework to promote establishment of processing industries and accomplish better cashew business for betterment of cashew farmers. As the major cashew exporting countries have pledged to promote cashew industry in their countries, many Indian cashew processors and exporters, who have expertise and strong network are exploring the possibility of setting up facilities there. Easy access to raw materials in those countries is the key to profitable operations as it helps cut the import cost of raw nuts from Africa.

In this context, Indian cashew scenario has to adapt and amend itself in production and processing sectors to effectively confront the new challenges arising from these developments. The farming community in the traditional and non-traditional cashew growing zones needs to be made aware of the prospects of cashew cultivation adopting regionally suitable cashew varieties and following the GAP for maximizing raw cashew nut yields. Likewise, the processing industry needs to outgrow its limited activities and collaborate with the production and marketing sectors to ensure its processing requirements along with better returns to cashew growers. These activities are of utmost need in light of the further reduction in RCN available from African countries; which may put the processing industry in jeopardy. The extensive network of research agencies, developmental agencies and extension system can work in a mission mode to augment the cashew production and productivity levels and ensure that India retains its prime position in the World Cashew Scenario. The research work on developing regional crop needs, through this Directorate, AICRP on Cashew and several SAUs and also the rapid adoption of mechanized processing and homestead processing coupled with the increasing health consciousness among the public coupled with higher purchasing capacity, has led to significant increase in domestic consumption of cashew kernels.

I optimistically hope that all relevant agencies concerned with cashew cultivation will put in their timely efforts to enthuse and augment cashew cultivation in our nation to effectively mitigate the possible fluctuations in the wake of the expected changes in near future and ensure prosperity to the producer and processors alike.




(RAVIPRASAD, T. N.)
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FOCUS ON RESEARCH

1. Cashew Protect: An Artificial Intelligence (AI) based website and app for identification of pests, diseases and nutrient deficiencies in Cashew

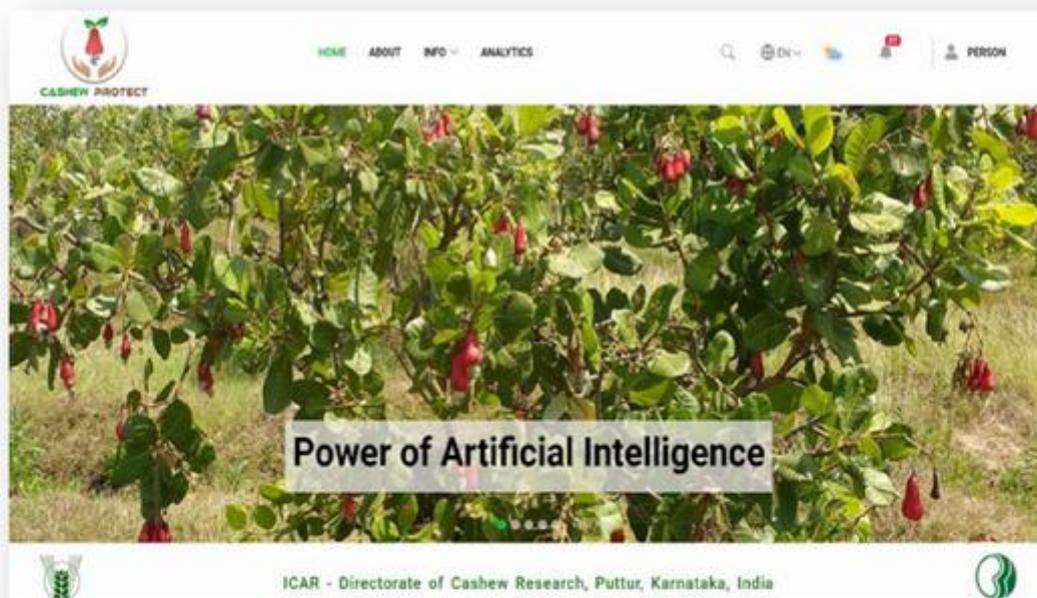
Mohana G.S., Vanitha K., Rajashekara H. and Shamsudheen M.

ICAR-Directorate of Cashew Research, Puttur-574202, Karnataka

Cashew farmers often need expert advice for proper management of pests and diseases in addition to nutrient deficiencies. However, due to various reasons, technical advice is not easily available when it is most required. Recent advances in mobile technologies can help to a greater extent in this connection. Apps and websites based on technologies such as artificial intelligence, visual recognition and deep learning are being developed worldwide for identification of plants / animals / insects including pests/diseases/nutrient deficiencies. These tools have been found to be very useful and are regularly used by farmers in different parts of the world



CASHEW PROTECT



In order to mitigate this constraint, this Directorate has developed the Cashew Protect website and app for identification of pests and diseases of cashew along with nutrient deficiencies (Website-<https://cashewprotect.icar.gov.in/>; App for android phones <https://play.google.com/store/apps/details?id=com.tosall.cashewprotect&pli=1> and app for iOS <https://apps.apple.com/us/app/cashew-protect/id1619732962>).

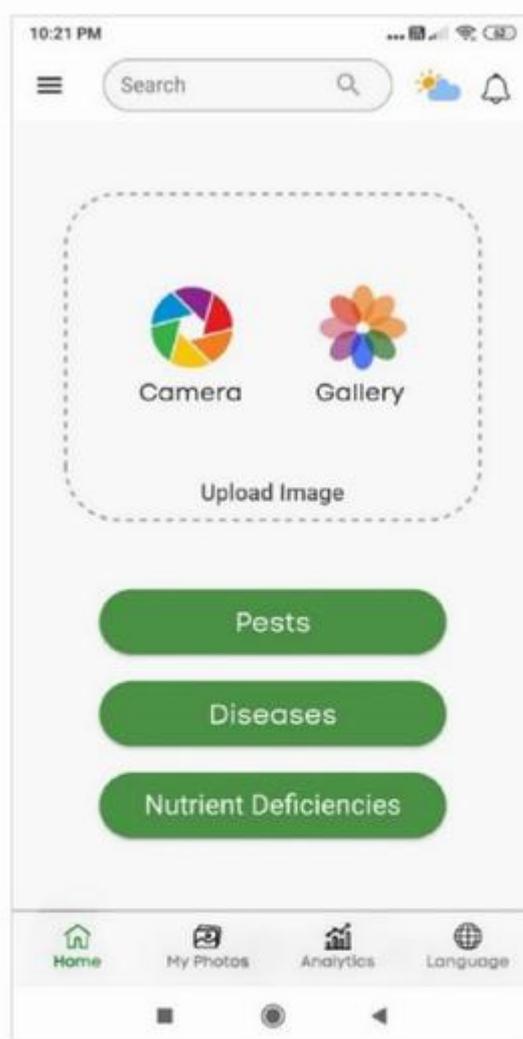
The website/app is targeted to diagnose about 60 cashew pests, 20 diseases and 10 nutrient deficiencies instantly from the uploaded images. However, as of now, in the first phase of the work, it can detect 6 pests and 1 disease.



Artificial Intelligence (AI) and computer vision-based techniques are deployed here. The website/app is constantly being trained with additional data and gets more accurate with time. In the back end application, PHP Laravel framework, MySQL, Windows OS, Apache/NGINX are deployed. React Native/Flutter is deployed in mobile phone application. The AI machine learning system included Python, Windows OS, Tensor Flow as AI framework and GPU server for training. This website/app is available in 11 languages i.e., English, Hindi, Kannada, Gujarati, Marathi, Malayalam, Tamil, Telugu, Bengali, Odia and Garo to cater to the needs of cashew farmers in their local language. Options for contacting experts and sharing photos in social media have been provided in case of no detection or unsatisfactory results.

Most interestingly, it is possible to capture data via users on the number and type of pests, diseases and nutrient deficiencies observed in different countries/regions/districts/taluks during different time periods through this website/app. This will eventually help in early forecasting of these problems and alert farmers in time. Further, it also helps to channelize efforts and inputs required for management by the concerned agencies in an area/region of the country.

This is probably the first ever attempt of developing an AI based app/website in the world and in the ICAR system for cashew. The team behind developing this app/website included the scientists of ICAR-Directorate of Cashew Research, Puttur and the scientists of AICRP- Cashew centers spread across the country. This work has been funded by the RKVY-RAFTAAR program of Government of Karnataka.





2. Interventions in grafting technology of cashew

a. retaining leaves in stock plant

Bhagya H. P., Adiga J. D., Thondaiman V., Babli Mog, Veena G. L., Shamshuddin M., Manjesh G. N. and Manjunatha K.
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Soft wood grafting is the standard practice in cashew propagation. As per the standardized grafting technology, 4 leaves will be retained in rootstock for successful union. An observational trial with i) no leaves, ii) 1 leaf, iii) 2 leaves, iv) 3 leaves and v) 4 leaves (as check) retention on the stock was done. Among the different treatments, grafts without retention of leaves had less survival percentage (40 %) and 100 % survival percentage was observed in 1, 2, 3 and 4 leaves (check) retained at 60 days after grafting and no significant difference was observed as compared to check (Fig. 1 and Plate 1).



Legends: Retaining of stock leaves during grafting a) 0; b) 1c)2; d) 3and e)4

Plate. 1 Grafts having different no. of leaves retained in the stock



**Interventions in grafting technology of cashew :
b. Interstock technology in cashew**

Bhagya H. P., Adiga J. D., Thondaiman V., Babli Mog, Veena G. L., Shamshuddin M., Manjesh G. N. and Manjunatha K.
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The objective of this experiment was to induce dwarfness in cashew by using different interstocks like *Anacardium pumilum*, Nethra Vaaman, KAU-Nihara, Vengurla-7 along with two check varieties (V-4 and Bhaskara). However, *Anacardium pumilum* grafting was not successful and other treatment showed grafting success at 60 days and it varied from 12.5-100 %. The second grafting was done with V-4 and Bhaskara after second month of first grafting. Another set of grafting was also carried out by using interstock and scion simultaneously by using Nethra Vaaman and V-7 as Interstock and V-4 and Bhaskara as scions. The survival percentage varied from 40 - 85 and in control it was 86.67-96.67 after 90 days after grafting (Fig. 2 and Plate 2).

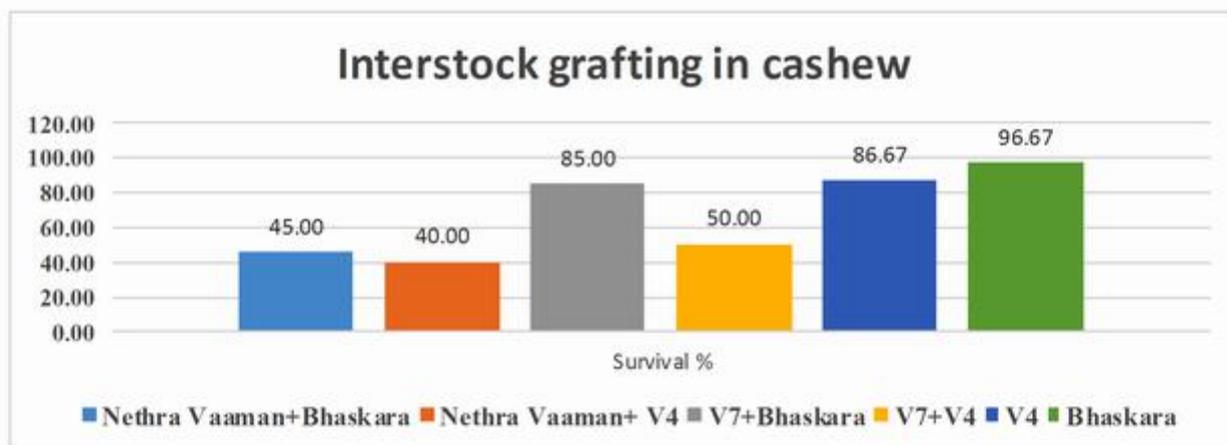


Fig. 1 Effect of number of leaves retained on survival percentage of grafts

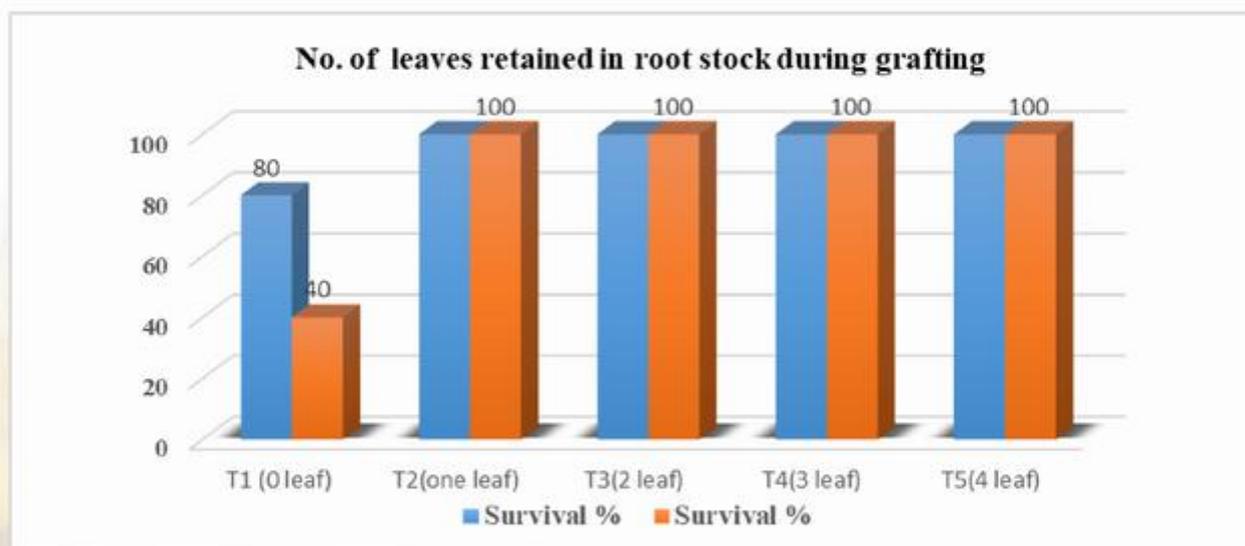


Fig. 2 Survival percentage with different interstocks



Legends: a) Nethra Vaman + Bhaskara; b) Nethra Vaman + V-4; c) V-7 + Bhaskara; d) V-7 + V-4; e) V-4; f) Bhaskara

Plate 2 Grafts with different interstocks

3. Development and evaluation of jaw type cashew fruit collector

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At present, cashew nut collection is extensively done by manual collection of cashew apples with nuts; which have fallen to the ground. This is not only time consuming but is also very tedious. The collection process requires the worker to bend down repeatedly, which causes fatigue and takes lot of time. Due to shortage of labor, timely collection of cashew fruits is delayed and becomes expensive i.e., Rs. 18,000 to 20,000/ha.

Hence, a jaw type cashew fruit and nut collector has been developed based on the physical properties of the cashew apple and nut. The prototype consisted of main handle, guiding handle, side covers and spring mechanisms. Performance evaluation of the jaw-type fruit collector indicated that the average collection capacity of 26 kg h⁻¹ depending on the density of fruits. The picking efficiency of the collector ranged from 93 to 97 % and percentage of debris was found to be < 3%. This has made the collection of cashew nuts easy for the workers.



A view of jaw type cashew fruit picker



4. Nutrient rich Cashew Apple pomace Powder Cookies

G. L. Veena, J. D. Adiga, Shamsudheen M., Preethi P., Rajashekhar H., Manjesh G. N., Bhagya H. P., Thondaiman V. and Babli M.

Cashew apple pomace powder was used as one of the flour blends for preparation of cookies. Cashew apple pomace (CAPP) was blended with wheat flour, for making cookie dough, here maida (refined flour) was completely avoided. The cookies were subjected to physical, biochemical, and sensory evaluation. The CAPP and wheat flour blend cookies were not significantly different in terms of their weight, diameter, height and spread ratio. However, significant differences were present with respect to volume and density of cookies. The new formulation reported relatively crude protein (6.84%), crude fat (13.3%), and ash (92.30%) contents while it had higher fibre (6.33%) content in it. Cashew apple is rich source of many of the phytonutrients and these functional nutrients are having nutraceuticals properties which in turn makes the product a functional one unlike traditional cookies available.

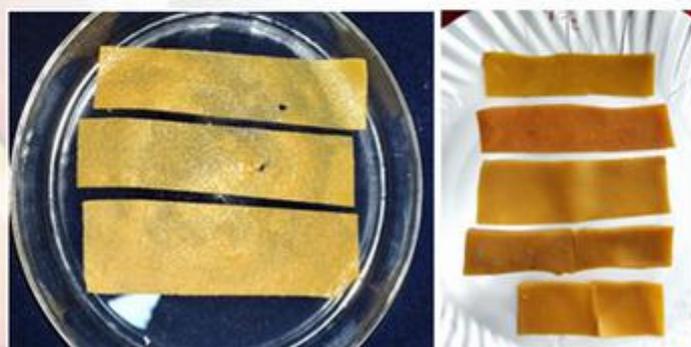


Cashew apple pomace powder cookies

5. Development of Cashew Apple based Fruit Bar

G.L. Veena, J. D. Adiga, Shamsudheen M., Preethi P., Rajasekhar H., Thondaiman V., Manjesh G. N. and Bhagya H. P.

Cashew apple is a season oriented and sensitive to deterioration even when stored under refrigeration condition. The level of consumption and utilization of cashew apple in food industries are very low and lower than that of cashew nut utilization and consumption. The utilization of cashew apple pulp and being incorporated with guava pulp, improved the nutritional and organoleptic qualities of the fruit bars. It was also evident that the incorporation of the cashew apple with guava pulp had no negative effect on its proximate composition; rather it had some positive effects like the increase in ash content, total phenols, antioxidants, flavonoids, and protein etc. Cashew apple is rich source of many of the phytonutrients and these functional nutrients are having nutraceuticals properties which in turn makes the product a functional one unlike traditional fruit leather.



Cashew apple Fruit Bar



MEETINGS CONDUCTED

Institute Research Committee (IRC)

The 35th Annual Meeting of the Institute Research Committee (IRC) was held in hybrid mode at DCR, Puttur and through Zoom platform during 27-28, September 2022 under the Chairmanship of Dr. T.N. Raviprasad, Director (Acting), ICAR-DCR, Puttur. Dr. M.G. Bhat, Former Director, DCR, Puttur in his remarks during Crop Improvement session indicated the need to enhance the productivity and thereby the production in cashew. Dr. G.S. Prakash, Former Head (Fruit Crops), ICAR-IIHR, Bengaluru who chaired the Crop Management session said that scientists should work in close association with farmers. The scientists should meticulously observe the cashew plants for vital clues and evaluate the experimental material. He also suggested that the Vision Document of DCR and ICAR (Vision 2030 and Vision 2050) need to be kept in mind while formulating new projects and while implementing ongoing projects. The scientists presented the achievements made under various ongoing projects and also proposed some new projects for the ensuing years.



IRC in progress and the scientist team of DCR with IRC Experts.

Institute Technology Management Committee (ITMC)

The 21st Institute Technology Management Committee (ITMC) meeting was held on 31.10.2022 in the Committee Room under the Chairmanship of Dr. T.N. Raviprasad, Director (Acting), ICAR-DCR, and Puttur to discuss ITMU activities.

हिन्दी गतिविधियां

इस छ: माही में दो तिमाही बैठक एवं हिन्दी कार्यशालाओं का आयोजन किया गया. दिनांक निदेशालय के हिन्दी समिती के सदस्यों के लिए आयोजित तिमाही बैठक में निदेशालय में हो रही हिन्दी गतिविधियों के बारे में, केंद्र से आये पत्रों के बारे में चर्चा किया गया. राज भाषा कार्यान्वयन को बढ़ावा देने के लिये जरूरी कदम उठाने के बारे में निर्णय लिया गया. दिनांक 23.07.22 को पुत्तूर नगर राजभाषा कार्यान्वयन समिति की सदस्यों के लिये और निदेशालय के सदस्यों के लिए हिन्दी कार्यशाला आयोजन किया गया. कार्यशाला में श्री प्रकाश जी भट्ट, सदस्य सचिव, पुत्तूर टोलिक, सहभागियों को मार्गदर्शन किया. उसी दिन दोपहर में पुत्तूर टोलिक का अर्ध वार्षिक बैठक हुआ. बैठक में सभी सदस्य कार्यालयों के प्रमुख उपस्थित थे. कार्यालयों में हिन्दी की प्रगामी प्रयोग के बारे में चर्चा किया गया. सितंबर 14 से 28 तक हिन्दी पखवाडा मनाया गया. इस अवसर पर आयोजित हिन्दी प्रतियोगिता और अन्य कार्यक्रमों में सभी सदस्य कार्यालयों की सदस्य एवं इस निदेशालय के कर्मचारी बड़े उत्साह से भाग लिए. विद्यार्थियों के लिए भी इस अवसर पर हिन्दी निबंध लेखन प्रतियोगिता आयोजन किय गया था. निदेशालय के अनेक कर्मचारी विविध हिन्दी परीक्षा पास किये हैं. और कुच कर्मचारी फिलहाल आन् लाईन् प्रशिक्षण पा रहे हैं.



PROGRAMMES ORGANIZED

One day Training-cum-demonstration on cashew processing

A training cum demonstration programme on cashew processing was organised for 5 farmers from Badiadka panchayat of Kasaragod on 30th July 2022. The training programme was organised in collaboration with the Badiadka Krishi Bhavana, Kasaragod. The training session was handled by Dr. D Balasubramanian, Principal Scientist (AS & PE) and head of Agri Business Incubation at ICAR-DCR, Puttur. The training covered the basic aspects of cashew processing followed by acquainting the cashew processing machineries. Shelling of raw cashew nuts with the hand-cum-pedal operated shelling machine and peeling were demonstrated followed by hands-on training session. The farmers gave positive feedback about the traing programme.

Scientist-Extension-Farmer Interface meeting on Cashew Production Technologies

Under “Azadi ka Amrut Mahotsav Campaign”, a Scientist-Extension-Farmer interface meeting on Cashew Production technologies was organized on 16th August, 2022.

During the interface meeting farmers sought information regarding the varieties suitable to this coastal region, application of fertilizers as well as, pest and disease management. Since few of the farmers were new to the crop, Dr. T N Raviprasad, Director (Acting) gave an overview of the scientific cultivation practices and about management of important pests in cashew like Tea Mosquito Bug (TMB) and Cashew Stem and Root Borer (CSRB). Dr. J Dinakara Adiga, Principal Scientist (Horticulture) during his interaction with the farmers informed about fertilizer recommendation for the crop while, Dr. Eradasappa E, Senior Scientist (Genetics and Plant breeding) explained about the varieties suitable to this region. Dr. Veena G L, Scientist (Fruit Science) briefly explained the scope of value addition of cashew apple. Dr. Rajashekara H, Scientist (Pathology) gave a brief orientation to the farmers on diseases like anthracnose in cashew and the application of Bordeaux paste as a control measure. An important concern raised by the farmers during the interface meeting was regarding the low price for raw cashew nuts which make cashew farming less profitable.

World Soil Day Celebrations

World Soil Day is celebrated on 5th December, 2022 to create awareness and advocate the importance of healthy soils and the need for sustainable management of soil resources. The theme for this year is “Soils: Where Food begins”. As a part of the World Soil Day celebrations at the Directorate, a soil health camp was organized in the farmer’s field in Bettampady village of Puttur in which 31 farmers participated.

The camp aimed at sensitizing the farmers on the importance of soil health in ensuring food and nutritional security and highlighted the need for soil health analysis for sustainable management of soil resources. ‘Soil Health Cards’ were distributed to the cashew farmers during the soil health camp and farmers were given advisories on soil management based on the soil health analysis. Dr. D Balasubramanian, Principal Scientist (AS&PE) briefed about the soil health card programme of Govt. of India and he emphasized on the importance of judicious application of nutrients including micronutrients, based on soil test report.

Following the distribution of soil health cards , the importance of integrated approach in soil nutrient management, use of ‘Soil Health Cards’ and status of the soil health based on the reports of soil health analysis and recommended measures to enhance the fertility of the soil were explained. Dr.Shamsudheen M, Senior Scientist (Soil Science) , Dr. Bhagya H.P., Scientist (SPM and AP) and Dr. Veena G L, Scientist (Fruit science) participated and coordinated the event and assisted in giving advisories to the farmers.



TRAININGS ORGANISED

On-farm training and demonstration on “Training and pruning technique in Cashew”: organized by ICAR-CPCRI, KVK, Kasaragod and ICAR-DCR, Puttur on 26.07.2022

Front-Line Demonstrations (FLD) of cashew were laid out in Kasaragod District, initiated by KVK, ICAR-CPCRI, which has been adopted by 10 farmers. In this connection, as a part of the 75th Azadi Ka Amrit Mahotsav, an On-farm training and demonstration of “Training and Pruning techniques in Cashew” was organised in 4 FLD plots (< 1 year old) at Kudlu village, Kasargod. During the visit, Dr. Saritha Hegde introduced the farmers and briefed them about the technology adopted by farmers in the FLD plots. The farmers have adopted the High-density planting technique with pruning responsive varieties (VRI-3, Sel-2, and Ullal-1). Dr. Thondaiman.V., addressed the practical aspects of the initial care and maintenance of cashew plants. Dr. Manjesh,G.N. briefed about the technique of training and pruning, its advantages, and aftercare and carried out on-farm demonstration on training and pruning techniques to be adopted in Cashew.



FLD on Cashew: “Training and Pruning techniques” organized in collaboration with ICAR-CPCRI, KVK, Kasaragod, Kerala dated 31.10.2022

A front-line demonstration was conducted in the initially established cashew plantations of Kolathur, Kasaragod, in collaboration with KVK, ICAR-CPCRI, to disseminate the knowledge on cashew pruning practices and farm advisory by Scientists of Horticulture discipline of this Directorate; Dr. Manjesh G.N., Dr. Veena G.L., and Dr. Bhagya H.P. explained and demonstrated the training and pruning techniques to be adopted in cashew plantations. Dr. Saritha Hegde and Dr. Benjamin Mathew, SMS, ICAR-CPCRI, KVK coordinated the FLD plots and training program. FLD farmers could get hands-on experience in training and pruning as well as other management practices of cashew.



Drone Technology Demonstrations:

A total of 44 drone technology demonstrations were conducted for creating awareness on spraying of agricultural chemicals/micronutrients/organic pesticides. The activities were done under the scheme on “Drone Technology Demonstration (DTD)” funded by Central Sector Scheme of Dept. of Agriculture & Farmers Welfare, implemented through ATARI (Sub Mission on Agricultural Mechanization) with aim to sensitize about application of drones in agriculture among the farmers, extension workers and other stakeholders. These demonstrations were held during Sept. to Dec. 2022 at DCR campuses, CPCRI Kidu campus, and different villages of Vijayanagara, Koppal, Chitradurga and Belagavi districts and the crops covered were cashew, coconut, sugarcane, banana, maize drumstick, Bengal gram and cotton in various locations.

The team of scientists involved in Drone Technology Demonstrations are Dr. Manjunatha K., PI of the project and Scientist (Farm Machinery & Power); and Co-PIs viz., Dr. Siddanna Savadi, Scientist (Biotechnology); Dr. T.N. Raviprasad, Principal Scientist (Agrl. Entomology); Dr. J. Dinakara Adiga, Principal Scientist (Horticulture); Dr. Shamsudheen M., Senior Scientist (Soil Science) and Dr. Aswathy Chandrakumar, Scientist (Agrl. Extension).





Exposure visit to ICAR-DCR, Puttur

Several farmers, input dealers, students and other officials from various Agricultural Universities, and Departments, as well as KVKs have visited the Directorate during this period. They were shown the museum, cashew nursery and the technology showcasing plots to appraise about the achievements and technologies developed by ICAR-DCR.

Programmes under TSP Scheme

STC/Tribal Sub Plan programme

Following activities were taken up under the STC/TSP programme.

a. Area expansion under Cashew

A total of 6305 cashew grafts of improved varieties of cashew like Ullal-3, Bhaskara, and Vengurla-4 were distributed to the farmers of Chitradurga district and Dakshina Kannada district.

b. Demonstration on soil sampling

Soil health is important for achieving the vision of “Swasth Dharaa, Khet Haraa” and for ensuring food security in the country. With an aim to sensitise the farmers on the importance of soil sampling in soil health management, ICAR-Directorate of Cashew Research, Puttur organized a demonstration in Bettampady under the Tribal sub plan programme of the Directorate on 10th November, 2022 in which 22 farmers from nearby villages had participated.

A team of scientists comprising of Dr. Shamsudheen M., Senior Scientist (Soil Science), Dr. Bhagya H. P., Scientist (Spices, Plantation, Medicinal and Aromatic Plants) and Dr. Veena G. L., Scientist (Fruit Science) visited the farm of Smt. Anitha, who is a progressive farmer practicing integrated farming system in Bettampady. The importance of soil health in ensuring productivity of crops, sensitization on the ‘Soil Health Card’ initiative of Govt. of India and the procedure of collecting soil samples for soil testing for different crops were highlighted followed by a method demonstration. by the scientists for enhancing the knowledge of the participants in arecanut plantation.

c. Skill Development training

A Skill Development training was organised for 31 farmers under the Tribal Sub Plan programme of the Directorate on 17th October, 2022. Dr. T. N. Raviprasad, Director (Acting), ICAR-DCR, Puttur interacted with the farmers and highlighted on the importance of adopting proper management measures in Cashew orchards for better yields. Keeping in view of the demand for cashew grafts, the technical sessions focussed on cashew nursery production techniques.

Dr. J. Dinakara Adiga, Principal Scientist (Horticulture) explained about grafting and important management measures to be taken for the maintenance of graft. Dr. Shamsudeen M., soil scientist, explained to the farmers about the importance of nutrient management in Cashew. Dr. T. N. Raviprasad, Director (Acting) and Principal Scientist (Agrl. Entomology) handled a session on important pests and their management. This was followed by a hands-on-training on soft wood grafting wherein Dr. Bhagya H., Scientist (SPM & AP) explained about the basics of softwood grafting and Dr. Thondaiman V., Scientist (SPM & AP), Dr. Manjesh G. N., Scientist (SPM &AP) and Dr. Veena G. L. demonstrated softwood grafting techniques to the farmers.



d. Distribution of benefits

A total of 41 Soil Health Cards were distributed to farmers belonging to ST community in Puttur. Vegetable seed kits were also distributed to 40 ST beneficiaries of Kasaragod and Puttur.

Award for Best Stall

ICAR-CPCRI organized a Mega Kisan Mela and Agri Expo at Kidu in connection with the Golden Jubilee celebrations during 19-23 November, 2022. During this event, ICAR-DCR was conferred the first prize for the Best Stall under the Government category. The stall showcased the cashew production technologies, damage symptoms of major pests in cashew, different cashew kernel grades, nuts of different high yielding varieties, value added products developed from cashew apple and also android apps developed by the institute.

The stall attracted farmers, entrepreneurs, students and various dignitaries who were part of the ICAR institutes, State Agricultural Universities, KVKs and private organisations. Farmers mainly enquired about the availability of cashew grafts of various high yielding varieties like Nethra Jumbo-1, canopy management in Cashew and also regarding the management of Tea Mosquito Bug (TMB) and Cashew Stem and Root Borer (CSRB).

Program under SCSP Scheme

Area expansion under Cashew

A total of 10,776 cashew grafts of improved varieties of cashew like Ullal-3, Bhaskara, and Vengurla-4 were distributed to the farmers of Chikkamagaluru, Hassan and Dakshina Kannada district covering an area of 67.35 ha.

Distribution of Agriculture implements and method demonstration on “Training and pruning in Cashew” to SCSP beneficiaries of Kasaragod, Kerala

A program was organized in collaboration with ICAR, CPCRI-KVK, Kasaragodu to distribute agriculture implements and conduct method demonstrations on 24th August 2022. The event was attended by Dr. T. N. Raviprasad, Director (Acting), ICAR-DCR, Puttur, Dr. Ravi Bhat, Principal Scientist, ICAR-CPCRI, Kasaragod, Dr. Manoj Kumar, Principal Scientist, KVK, Kasaragod, Dr. Saritha Hegde, SMS, KVK, Kasaragod. During this program, pruning shears and secateurs were distributed to the 11 beneficiaries. Dr. Manjesh, G.N. Scientist, (Hort.), Nodal Officer SCSP and Dr. Thondaiman, V., Scientist (Hort.) carried out a method demonstration on “Training and pruning of Cashew” to the beneficiaries at the front-line demonstration plots identified by KVK, Kasaragod.





Two-day training program on “Scientific Cashew cultivation” and distribution of Cashew grafts to SCSP beneficiaries of Chikkamagaluru District, Karnataka

A training program cum distribution of cashew grafts under the Scheduled Caste-Sub Plan (SCSP) program was organized for the beneficiaries of Chikkamagaluru, District held from 26 to 27th August 2022 with the support of ICAR-KVK, Chikkamagaluru. During this program, Dr. Manjesh, G.N. Scientist (SP&MAP), Nodal officer-SCSP, and Dr. Eradasappa E., Senior Scientist (Plant breeding), Former Nodal officer-SCSP, briefed about the implementation of the scheme to the beneficiaries. A total of 3788 cashew grafts were distributed to SCSP beneficiaries of Kanivehalli, Kythanabeedu, Sadarahalli, Shankarapura, Chikkakurubarahalli, Kamsagara, Banoor, Byadarahalli, Keresanthe. A total of 24 beneficiaries from Chikkamagaluru taluk (14) and Kadur taluk (10) received the grafts. Dr. J.D. Adiga, Principal Scientist, Horticulture, delivered a talk on practical aspects of “Scientific Cashew cultivation” and a monitoring visit was made to the plots of previous beneficiaries located at Devagondanahalli, Sadarahalli, Ishwarahalli, Baktharalli, Kythanabeedu .



Distribution of Cashew grafts and training program on “Scientific Cashew cultivation” to SCSP beneficiaries of Chikkamagaluru District, Karnataka on 3-4 November 2022.

A training cum distribution of Cashew grafts under the Scheduled Caste-Sub Plan (SCSP) program was organized for the beneficiaries of Chikkamagaluru, District held from 03rd to 04th November 2022. During this program, Director, Dr. T.N. Raviprasad, and Dr. Manjesh G.N., Scientist (SP&MAP), Nodal officer-SCSP briefed about the implementation of the scheme to the beneficiaries. In this event, a total of 3750 (No's) of Cashew grafts were distributed to SCSP beneficiaries (31) of Chikkamagaluru District of village Viz Lakya, Bilikahalli, Gungarahalli, Karehalli, Gundasagara. The resource person Dr. J. D. Adiga and Dr. Thondaiman V. (SP&MAP), Member - SCSP briefed about the cultivation and aftercare of cashew. Monitoring visits to beneficiary farmers' plots in Devagondanahalli, Sadarahalli, Ishwarahalli, Baktharalli, Kythanabeedu were also taken up.





Distribution of Cashew grafts and Advisory on “Cashew cultivation” to SCSP beneficiaries of Hassan District, Karnataka, dated 16-17 November 2022.

In this program, a total of 3200 cashew grafts were distributed to 27 SC beneficiaries of K. Housur, Kalliborekaval, Mootikere, Koramangala, Bramadevarahalli villages of Hassan District. The Nodal officer SCSP, Dr. Manjesh G.N., and Dr. Veena G.L. Member SCSP advised about good agricultural practices in cashew. Monitoring visits to the plots of previous beneficiaries at Sadarahalli, Narasipura, Nagarahalli, Banur, Gunsagara, and Lakya of Chikkamagaluru were done for effective implementation of the scheme.



Kisan Diwas was organized for the farmers under the SCSP and STC/TSP project

The “Kisan Diwas” was organized at this Directorate for the farmers under the SCSP & Tribal sub-plan programme on 23rd December 2022. During the event, Shri. Kadamajalu Subhash Rai, a progressive farmer delivered the speech by highlighting the importance of farmers’ efforts in promoting agriculture. Shri. Uday Kumar M., a progressive farmer addressed the gathering with his success stories in agriculture and horticulture. Subsequently, a farmer-scientist interaction session was arranged in which farmers interacted with the scientists about nutrient management, plant protection and disease management in cashew. Dr. J. Dinakara Adiga, Director, ICAR-DCR, Puttur, narrated the objective of conducting Kisan Diwas and briefed about ICAR-DCR’s achievements and schemes for the benefit of the cashew farmers. As a part of the Kisan Diwas celebration, vegetable seed kits were distributed to 80 SC and ST from Bettampady, Kuriya, and Kemminje villages of Puttur, Karnataka, and Karadka village of Kasaragod, Kerala attended the “Kisan Diwas”.



PM Kisan Samman Sannam - 17th October 2022:

The skill development training on various aspects of Cashew production for SC and ST farmers was organized as a part of PM Kisan Samman Sannam 2022 under SCSP and STC/TSP. Technical presentations were done for the benefit of farmers regarding cashew nursery production techniques which included preparation of the potting mixture, grafting and aftercare of cashew grafts, nutrient management, and pest and disease management. The hands-on training on softwood grafting in cashew was conducted for 71 farmers from Puttur, Chikkamagaluru and Kasaragod.



TRANSFER OF TECHNOLOGY

Advisory Visits / Consultancies / Talks delivered / Exhibitions attended

T. N. Raviprasad	<ul style="list-style-type: none"> Delivered a lecture on “Latest trends in cashew cultivation and its adoption by cultivators” in a workshop on cashew Recent developments in cashew practices and its management, cashew nursery and cashew apple processing and other related aspects organized by Karnataka Cashew Development Corporation Limited Mangalore 	09.09.2022
J. Dinakara Adiga	<ul style="list-style-type: none"> Delivered a lecture on “Cashew orchard training, pruning and post-harvest practices” in a workshop on cashew Recent developments in cashew practices and its management, cashew nursery and cashew apple processing and other related aspects organized by Karnataka Cashew Development Corporation Limited Mangalore 	09.09.2022
Mohana G.S.	<ul style="list-style-type: none"> Visited the co-ordinating centre at Hogalagere for monitoring of experiments under AICRP, Cashew. Visited co-ordinating centre at AICRP- Cashew Bapatla, AP for monitoring of the experiments 	16.07.2022 25.09.2022
Rajashekara H.	<ul style="list-style-type: none"> Delivered a lead talk on “Race distribution pattern of Pyricularia oryzae Cavara causing rice blast from North-Western Himalayan region” in 62nd Annual International Conference of Association of Microbiologists of India (AMI): Microbes and Society: current trends and future prospects held at the University of Mysore, Mysuru, Karnataka. 	21.09.2022 to 23.09.2022



K. Vanitha	<ul style="list-style-type: none"> Acted as resource person and delivered a talk on 'Pest and disease management in cashew' for the Diploma in Agriculture Extension Services for Input dealers (DAESI) training programme for Batch-IV and Batch - V, organized by ICAR- KVK (D.K.), Mangaluru. 	16.11.2022 and 28.12.2022
K. Vanitha Siddanna Savadi Bhagya H.P. Veena G. L. Babli Mog Manjunatha K.	<ul style="list-style-type: none"> Participated in the Mega Kisan Mela and Agri Expo held during 19-23 November, 2022 at Kidu, CPCRI regional station by putting up an exhibition stall for demonstration of cashew production technologies of ICAR-DCR; which received 'Best Stall Award' among Govt. organisation category. 	19-23 November, 2022
Manjunatha K.	<ul style="list-style-type: none"> Delivered the online guest lecture on Applications of UAV for crop protection as part of a three-day online training under IDP-NAHEP organized by the Department of Farm Machinery & Power Engineering, College of Agricultural Engineering & Technology, CCS HAU, Hisar. Delivered a talk on "Status of Farm Mechanization in India: Challenges and Way Forward" for B. Tech. (Ag. Engg.) students of ALVA's Institute of Engineering & Technology, Moodbidri. 	22.11.2022 and 29.11.2022 16.12.2022
Manjesh G. N.	<ul style="list-style-type: none"> Delivered a lecture on the topic entitled "Commercial nursery management in Cashew" and Value addition in cashew apple to the DAESI program participants organized by KVK, Mangalore, Karnataka. As a resource person delivered a lecture on the topic "Commercial nursery management in Cashew" and Value addition in cashew apple to the DAESI program participants organized by KVK, Mangalore, Karnataka. 	10.11.2022 30.11.2022



<p>Veena G L</p>	<ul style="list-style-type: none"> • Coordinated three days entrepreneurs cum skill development training programme on value added products from fruits and vegetables where 76 members participated from different parts of Karnataka from 28th to 30th November through online mode (F.No. DCR-PME(RKVY-COVID)/2020 dated 28.11.2022). • Delivered a lecture on Cashew apple handling commercial uses, products, and its other applications in a workshop on cashew Recent developments in cashew practices and its management, cashew nursery and cashew apple processing and other related aspects organized by Karnataka Cashew Development Corporation Limited Mangalore 	<p>28.11.2022 to 30.11.2022</p> <p>17.10.2022 and 27.12.200</p>
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Publications

Sl. No	Research Articles
1.	<p>Preethi P., Shamsudheen M., Thanushree K., Vijay Rakesh Reddy S., Ravi Pandiselvam, Ramesh S.V., Sachin A.J., Manikantan M.R., and Veena G.L. 2022. Synergistic effect of powdered cashew sprout cum cotyledon and cereals on improving the biochemical and physical properties of extrudates. <i>Journal of Food processing and preservation</i> 46(1)</p>
2.	<p>Chaithra K., Bhoomika H.R., Veena G.L., Dushyantha Kumar B.M., Shivaprasad M. and Ravi C.S. 2022 Correlation and path coefficient analysis for yield and yield attributing traits in cashew (<i>Anacardium occidentale</i> L.) genotypes. <i>Biological Forum – An International Journal</i>, Issue No. 0975-1130.</p>
3.	<p>V. Ramteke P. Preethi G.L. Veena and Y.S. Nirala 2022 Impact of foliar application of primary nutrients on growth and yield contributing traits in cashew (<i>Anacardium occidentale</i> L.) <i>Journal of Environmental Biology</i> Vol 43:477-483.</p>

Books/Book Chapters/Popular Articles/others

1.	<p>Mohana G. S., 2022, Cashew Genetic resources in India, in the e - book by Eradasappa, E., Venkat Rao B., Aswathy Chandrakumar (2022), Cashew production and post-harvest technologies, National Institute of Agricultural Extension Management (MANAGE), Hyderabad and ICAR- Directorate of Cashew Research, Puttur, Karnataka India:</p>
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2.	K. Sethi, S. Sahoo, M. Dash, R. Kumari, P.K. Panda, Mohanna G.S. and T.N. Raviprasad, 2022, Evaluation of Cashew germplasm based on morpho-economic traits. The Pharma Innovation 11(10): 1025-1031
3.	Gajbhiye R.C., Khapare L.S., Zote V.K., Pawar S.N., Salvi S.P., Sawant B. N., Salvi B. R., Haldankar P. M., Mohana G. S. and Raviprasad T. N., 2022, Minimum descriptors of cashew germplasm accessions, Catalogue- II. AICRP on Cashew, Regional Fruit Research Station, Vengurla, Maharashtra
4.	Chandrakumar A., 2022, Application of contemporary ICTs for TOT in cashew and extension strategies for promoting cashew, in the e- book by Eradasappa, E., Venkat Rao B., Aswathy Chandrakumar (2022), Cashew production and post-harvest technologies, National Institute of Agricultural Extension Management (MANAGE), Hyderabad and ICAR- Directorate of Cashew Research, Puttur, Karnataka India: 150-152.
5.	Eradasappa E., Venkat Rao B. and Aswathy Chandrakumar (2022). Cashew Production and Post-Harvest Technologies. Hyderabad: National Institute of Agricultural Extension Management (MANAGE), Hyderabad & ICAR-Directorate of Cashew Research, Puttur, Karnataka, India.

Technical Bulletins/Extension Folders

Sl. No	Title
1.	K. Vanitha, T.N. Raviprasad and Rajashekara H. Tea mosquito bug and its management in cashew. Extension folder (5/2022) in Kannada. Translation by Mr. Ravishankar Prasad. ICAR-DCR, Puttur.
2.	K. Vanitha, T.N. Raviprasad and Veena G.L., 2022 Pollinators of cashew and their importance. Extension folder. ICAR-DCR, Puttur.
3.	V. Thondaiman and K. Vanitha. Nethra Jumbo - 1 Adhiga varumaanam tharum oru kalapina mundiri ragam. 2022. Extension folder in Tamil. ICAR-DCR, Puttur.
4.	Brochure on Sudharita Geru Taligalu (Improved cashew varieties) published in Kannada: Authors: Dr. Mohana, G.S. and Dr. E. Eradasappa
5.	Brochure on Nethra Jumbo – 1 : a new cashew hybrid for higher income (English and Kannada). Authors: Drs E. Eradasappa, J. D. Adiga, Mohana G.S., B.M. Muralidhara, Siddanna Savadi and Manjesh G.N.
6.	Brochure on Nethra Ganga (H-130) A new cashew hybrid with bold nut (English and Kannada) Authors: Drs E. Eradasappa, Mohana G.S., Adiga J.D., Siddanna Savadi, Manjesh G.N. and Veena G.L.
7.	Brochure on Nethra Vaaman: A dwarf variety of cashew (English and Kannada) Authors: Drs Mohana G.S., Eradasappa E. and Nayak M.G.



8. Brochure on Geru hannina samskarane (Cashew Fruit processing). Authors: Drs Rajkumar A.D. and Preethi P. Translation to Kannada by Drs Mohana, G.S. and Eradasappa E.

Conference/Symposium/Training attended/Training organized

<p>Mohana G. S.</p>	<ul style="list-style-type: none"> • Delivered a talk on 'Useful applications and websites for agricultural extension professionals' in International ITEC Training Programme on 'Computer Applications in Agricultural Extension' held during 13– 27th September, 2022 at MANAGE, Hyderabad and • Presented an invited paper on "Cashew Protect: An Artificial Intelligence (AI) based website and app for identification of pests, diseases and nutrient deficiencies in Cashew in the national workshop on 'Smart management of Agricultural Resources for transforming Indian farms at CTCRI Trivandrum'. 	<p>24.09.2022</p> <p>15.12.2022</p>
<p>Bhagya H.P.</p>	<ul style="list-style-type: none"> • Oral presentation was given on "Identification and selection of promising oil palm genotypes for high FFB and oil yield traits" at National symposium on Horticultural crops of Humid Tropics for Nutritional and Livelihood security (NSHCHT) organized by Regional Station, ICAR-IIHR, Chettalli. 	<p>02.12.2022 and 03.12.2022</p>
<p>Manjesh G. N.</p>	<ul style="list-style-type: none"> • Hands-on Training Program on "Advances in Biochemical Techniques and applications" organized at the Department of Biochemistry North-Eastern Hill University Shillong, Meghalaya, India Under the aegis of the Department of Science & Technology (DST), Government of India. • Delivered oral presentation on "Growth dynamics of cashew nut and apple in relation to modified BBCH scale" in National symposium on Horticultural crops of Humid Tropics for Nutritional and Livelihood security (NSHCHT) at Regional Station, ICAR-IIHR, Chettalli. 	<p>01.09.2022 to 08.09.2022</p> <p>02.12.2022 and 03.12.2022</p>



<p>Manjunatha K.</p>	<ul style="list-style-type: none"> • Participated in the DGCA-Certified Remotely Piloted Aircraft System (RPAS) Training Course for the RPAS flying training and pilot license (online) and offline at Drone Destination Pvt. Ltd., Pyramid Meditation Room, Om Shanti Retreat Centre Road, Patti Kawan, Bhora Kalan, Haryana-122 414 • Participated and presented oral presentation on Performance evaluation of roller-type fruit collector authored by Manjunatha K., Ravindra Naik and Adiga J. D. in 56th Annual Convention of Indian Society of Agricultural Engineers (ISAE) on Agricultural Engineering Innovation for Global Food Security and International Symposium on India @2047: Agricultural Engineering Perspective at Tamil Nadu Agricultural University, Coimbatore. 	<p>10.10.2022 to 11.10.2022</p> <p>17.10.2022 to 22.10.2022</p> <p>09.11.2022 to 11.11.2022</p>
<p>Siddanna Savadi</p>	<ul style="list-style-type: none"> • Participated in the DBT sponsored Training on Biosecurity and Biosafety: Policies, Diagnostics, Phytosanitary Treatments and Issues organized by the ICAR-NBPGR in virtual mode. • Participated in the talk by Dr. T. Ramasami on Science and Technology: For Low Resource Setting and Coping with Diversity Challenges organized by Tata Institute for Genetics and Society (TIGS), Bengaluru. • Participated in the DGCA-Certified Remotely Piloted Aircraft System (RPAS) Training Course for the RPAS flying training and pilot license (online) and offline at Drone Destination Pvt. Ltd., Pyramid Meditation Room, Om Shanti Retreat Centre Road, Patti Kawan, Bhora Kalan, Haryana-122 414 • Participated in the online training on RNA world: Advanced bioinformatics for deciphering regulatory molecules organized by Division of Agricultural Bioinformatics, ICAR-Indian Agricultural Statistics Research Institute, New Delhi-110012 in online mode. 	<p>02.08.2022 to 11.08.2022</p> <p>22.08.2022</p> <p>10.10.2022 to 11.10.2022</p> <p>17.10.2022 to 22.10.2022</p>



	<ul style="list-style-type: none"> • Participated in the National Symposium on Horticultural Crops of Humid Tropics for Nutritional and Livelihood Security organized by CHES, ICAR-Indian Institute of Horticultural Research, Chettalli, Kodagu, Karnataka and presented on the topic Development and utilization of genomic resources in cashew. • Participated in the Knowledge Series lecture on Intellectual Property Rights (IPR) in Biotechnology Prosecution of Biotech Patents by Ms. Chitra Sundar, Advocate & Patent Agent, in the webinar organized by BioNcube, WIPO-TISC and IPFC at AIP-ICRISAT. 	<p>3.11.2022 to 9.11.2022</p> <p>02.12.2022 and 03.12.2022</p> <p>13.12.2022</p>
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SUPPLY OF PLANTING MATERIAL

- A total of 30,000 cashew grafts were procured from Vengurle Center and supplied to ICAR Research Complex, Manipur for planting under NEH program
- A total of 25,000 cashew grafts from DCR Puttur was transported to ICAR Research Complex, Manipur, for planting under NEH program.

STAFF NEWS

Recognitions/Awards

<p>Dr. Mohana G. S.</p> <ul style="list-style-type: none"> • Recognised as PG guide from Mangalore University on 10-10-2022 • Recognised as PG guide from UAHS, Shimoga on 19-10-2022 	
<p>Dr. Rajashekara H.</p> <ul style="list-style-type: none"> • Co-Chaired the Technical session V&VI: Agricultural Microbiology and Environmental Microbiology in 62nd Annual international conference of association of microbiologist of India (AMI): Microbes and Society: current trends and future prospects from September 21-23rd, 2022 at University of Mysore, Mysuru, Karnataka. 	



Dr. K. Vanitha

- Received the award (3rd position) “Best paper for oral presentation” on ‘Influence of cashew flower eating caterpillars on cashewnut yield and their management measures’ in the ‘International Conference on advances in Agricultural, Veterinary and Allied sciences for improving livelihood and environmental security; conducted during September 28-30, 2022 organized by ICAR-Indian Grassland and Fodder research Institute, RRS, Srinagar, ICAR-NAHEP, Birsa Agricultural university and BADCL, Baramula at University of Kashmir, India.
- Conferred upon ‘Avvaru Seethrama Memorial Award-2021’ for important contributions in the field of Entomology by Applied Zoologists Research Association, Bhubaneswar, conferred during the XVIII AZRA International Conference on “Advances in Applied Zoological Researches towards Food, Feed & Nutritional Security and Safer Environment” on 10-12 November, 2022 at Hotel Suryansh, Bhubaneswar, Odisha.
- The article entitled ‘ Invasive ant species recorded in cashew plantations with reference to yellow crazy ant, a threat to ecosystem’ authored by K. Vanitha, T.N. Raviprasad, K. Jayaprabhavathi and H. Rajashekara published in Agriculture and Food: e-Newsletter, 8 (4) was awarded with ‘Best Article award’ on 20.10.2022.



Dr. Siddanna Savadi

- Received the DGCA-Certified Remote Pilot Certificate with a certificate No. PC11220000174 for the ROTORCRAFT Unmanned Aircraft System (UAS) to fly the Small class UAS in the Visible line of sight (VLOS) on 07 November 2022.
- Under the guidance of Dr. Siddanna Savadi, Scientist (Biotechnology); Ms. Manju Manuel, M.Sc. (Biotechnology) student at ICAR-DCR, Puttur, received first prize for the oral presentation on the M.Sc. thesis research “Screening of novel SSR markers for polymorphism and genetic diversity analysis in cashew” in the Interdisciplinary seminars on Recent advances in technology organized by Vimala College, Thrissur on 19 December 2022



Dr. Manjunatha K.

- Received the DGCA-Certified Remote Pilot Certificate with a certificate No. PC11220000173 for the ROTORCRAFT Unmanned Aircraft System (UAS) to fly the Small class UAS in the Visible line of sight (VLOS) on 07 November 2022.





Dr. Bhagya H.P.

- Received Young scientist award in the International Scientist Awards on Engineering, Science and Medicine, held on 23-July-2022, online India, Organized by VDgood Professional Association.



Dr. Veena G. L.

- Recognised as an editor for the Agriculture and Food e-newsletter magazine.
- Awarded with Best article award for the article “Nutraceutical values of fruit crops” in Agriculture and Food e- Newsletter



Prakash G. Bhat

Nominated as Member of Board of Studies for Hindi Language by Vivekananda College of Arts, Science and Commerce, Puttur, an autonomous college.



Appointment

- Dr. J.Dinakara Adiga, Principal Scientist (Fruits Science) was appointed as Director w.e.f. 12.12.2022(FN).

Transferred

- Sri. K.V. Ramesh Babu, Asst. Chief Technical Officer was relieved from this Directorate 15.12.2022 (AN), consequent on his transfer to ICAR-Indian Institute of Horticultural Research, Bangalore.
- Dr. H.P Bhagya., Scientist (Spices, Plantation, Medicinal and Aromatic Plants) from ICAR – Indian Institute of Oil Palm Research, Pedavegi, has reported for duty at this Directorate w.e.f. 17.08.2022(FN).

Promotion

- Dr. Manjesh G. N., Scientist (Spices, Plantation, Medicinal and Aromatic Plants) has been promoted from the pay Matrix 10 to next higher pay Matrix Level – 11 w.e.f 05.07.2021.
- Smt. Reshma K., Personal Assistant has been promoted to Private Secretary w.e.f 27.07.2022



INFORMATION ON AICRP - CASHEW

AICRP- Bhubaneswar

- Seven cashew genotypes, A-1/17, B-5/18, G-6/18, H-2/18, H-3/18, K-1/18 and L-5/18 found promising with respect to nut weight, shelling %, mean annual nut yield and cumulative nut yield at 2nd harvest have been identified for further evaluation in Advanced Varietal Trial.

AICRP-Vengurla

- Catalogue of minimum descriptor of 86 characterized germplasm accessions has been published.
- Thiomethoxam 0.2 g/l was found to be best for management of thrips and Lambda cyhalothrin 0.6 ml/l for tea mosquito bug.

AICRP - Jhargram

- A new cashew variety (Bidhan Bonsai Kaju – JGM282) which has high responsiveness to pruning [suitable for UHDP and HDP] and having high yield, cluster bearing, high shelling percentage, short internode length, less susceptibility to disease, was released for West Bengal after evaluating for 16 years.

Tribal sub plan / SCSP/ NEH / MGMT

AICRP- Bhubaneswar

TRIBAL SUB-PLAN

Cashew plantations of 3.92 ha under Area Expansion programme in seven farmers' field at Lam-baguduri village of Khajuripada block in Kandhamal district was accomplished. 700 cashew grafts along with fertilizers, insecticides, fungicide and weedicide were distributed.

SC SUB-PLAN

Plantation of 3.56 ha of cashew under Area Expansion programme in eight farmers' field at Nathipada village of Banapur block in Khordha district was accomplished. 700 cashew grafts along with fertilizers, insecticides, fungicides and weedicides were distributed.

AICRP-Madakkathara

- TSP training programme conducted at CRS, Madakkathara for the Plackathadam tribal settlement, Peerumedu on 24.09.2022 and at Peerumedu, Idukki on 22.12.2022. SCSP training programme was conducted at CRS, Madakkathara for the SC farmers of Idukki district on 24/09/2022





AICRP-Hogalagere

- SCSP programme was conducted in Mutthakapalli village of Srinivasapura Taluk, Kolar District on 29-11-2022 on Cashew scientific production technologies.

SCSP Training programme in Mutthakapalli village, Srinivasapura Taluk, Kolar District



AICRP – Tura

- Input distribution cum training programme on Cashew Production Technology was organized at KVK campus on 30th June, 2022. Around 55 nos. of cashew farmers from West Garo Hills district participated and received inputs such as micronutrients, knapsack sprayer, foot sprayer and tree



Programmes organized

AICRP- Madakkathara

Inauguration of planting of evaluatory trials of dwarf genotypes by Hon'ble Vice Chancellor, KAU





AICRP-Vengurla

Trainings were organised on on Management of Pest and disease of Cashew was organized at Sawantwadi on 19/09/2022; Kunde, on 23/12/2022; Kudal on 15/09/2022 ; Malvan on 27/09/2022 and Nandgaon on 29/09/2022. to the Agril. Department Staff at Vengurla, Dist. Sindhudurg on 27/12/2022 Organized field demonstration on Management of Cashew Stem and Root Borer at Janvali, on 29/11/2022.



TRANSFER OF TECHNOLOGY

Publications

Poduval, M., 2022. Effects of climatic factors on different cashew (*Anacardium occidentale* L.) varieties. *Bangladesh Journal of Botany*, 51(3):527–539.
<https://doi.org/10.3329/bjb.v51i3.61999>.

Technical bulletins/Extension Folders/Leaflet

Several publications viz., Cashew calendar, Cashew the cash crop (Malayalam), Brochure on products (Malayalam), Pocket diary on Management of Pest and Disease of Cashew were brought out from CRS Madakkathara.

Supply of Planting Material

AICRP- Madakkathara	A total of 30,585 cashew grafts of improved varieties were supplied for cultivation.
AICRP- Bhubaneshwar	3,847 no. of grafts of different high yielding cashew varieties were supplied to farmers and developmental agencies from this AICRP on Cashew during July-December, 2022.
AICRP-Vengurla	A total of 6035 cashew grafts of different varieties were supplied.
AICRP-Hogalagere	Cashew grafts of different varieties (800 grafts) have been supplied to the farmers.
AICRP - Jhargram	6000 grafts. 20000 scions (BPP - 8, Bidhan Jhargram – 2, Vengurla - 7 and Dhana) were supplied to the nurserymen.



STAFF NEWS

Recognitions/Awards

Dr. Nasiya Beegum A.N. from Madakkathara Centre received the Insect Environmentalist Award for the Best Insect Photography (Senior Grade)

Appointment/Transfer

AICRP-Vengurla

- Dr. R. C. Gajbhiye, Horticulturist-Cashew AICRP-Cashew, RFRS, Vengurla centre was transferred to College of Horticulture, Dapoli on dated 25.07.2022 and Dr. (Mrs.) M. B. Kadam has taken the charge of Horticulturist at AICRP-Cashew, RFRS, Vengurla on 01.08.2022.
- Dr. (Mrs.) M. B. Kadam, AICRP-Cashew, RFRS, Vengurla centre was transferred to MCAER, Pune (MS) and Dr. R. T. Bhingarde, Associate Professor of Horticulture has taken the charge of Horticulturist at AICRP-Cashew, RFRS, Vengurla on 08.12.2022.

AICRP- Hogalagere

- Dr. Srikantaprasad D., Assistant Professor (PSMA), has joined as Scheme Head and Horticulturist in AICRP on Cashew at HREC, Hogalagere
- Dr. Jagadish, Assistant Professor (Agronomy) has joined as Jr. Horticulturist in AICRP on Cashew at HREC, Hogalagere

Superannuation

- Dr. Meera V., Menon., Professor (Agronomy) Cashew Research Station, Madakkathara farm superannuated from service on 30.11.2022.



Published by:

Dr. T.N. Raviprasad

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