



# काजू समाचार

## CASHEW NEWS



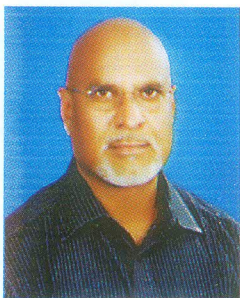
भाकृअनुप-काजू अनुसंधान निदेशालय, पुत्तूर के अर्धवार्षिक वार्ता पत्र  
HALF YEARLY NEWSLETTER OF ICAR-DIRECTORATE OF CASHEW RESEARCH, PUTTUR

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### FROM THE DIRECTOR'S DESK

#### Ultra high density planting in cashew: A technology option for doubling farmers' income



The potential of Crop cashew (*Anacardium occidentale* L.) in the international trade was first realized by India in the early 1900s' through the export of cashew kernels. Presently, India has the largest area under cashew and is also largest producer of cashew in the world.

Cashew area in the country is 1.035 million ha with production of 0.670 million tonnes (2015-16). The present level of production is not sufficient to fulfill the processing requirement of cashew industries in the country (2.0 million tonnes). Most of the area under cashew is in degraded, non-fertile land of east coast and west coast and hilly regions of the country. At present it has very low level of productivity and farmers are getting an income of Rs. <50,000/ha. Poor productivity and low income of cashew farmers is a serious concern.

At this juncture, when the country is looking towards doubling farmers' income, a major technology option available to enhance the productivity of cashew nut and thereby increasing income of cashew farmers is 'Ultra high density' planting in cashew. Ultra density planting in cashew @1111 to 1600 plants per ha or more, maintenance of productive canopy by way of pruning and also for obtaining early benefits of crop harvests and higher yield was developed and standardized and demonstrated for the first time in the history of

cashew research by this Directorate as early as 2002-03 and know as a technology transferred to farmers field. Traditionally the spacing for planting was recommended at 8M x 8M (150 plants/ha) and up late recommendation of high density at the rate of 4M x 4M (625 plants/ha) but a canopy management technique for maintenance of productive canopy was not known and hence the decline in yield performance could not be stopped even till recently.

The cashew varieties having precocious flowering and positive response to pruning such as VRI-3, NRCC Sel-2, Ullal-1, Ullal-4 were most suitable for this kind of planting. The recent hybrid H-130 is most suitable for the purpose having high precocity and good response to pruning. It has very bold nuts (13 g) and long flowering duration.

The complete allotted space can be covered in 3<sup>rd</sup> year of planting and potential yield of the unit land can be realized from 3<sup>rd</sup> to 4<sup>th</sup> year of orchard life onwards. Even if an yield of 2 kg per plant can bring more than 3 tones per ha which will be much superior over existing orchards having National average yield less than 720 kg/ha.

The land preparation can be taken up preferably by making contiguous reverse terraces against the slope at 3 m distance from one another and pits (1M size) be opened at 3 m apart. The pits may be filled with fertile soil and compost upto 2/3<sup>rd</sup> depth of the pit. Grafts of selected cashew variety be planted during the monsoon season and allowed to grow straight without any side sprouts upto 0.25 to 0.50 m



**Initial stage of ultra density orchard**



**2<sup>nd</sup> year of orchard life in ultra density**

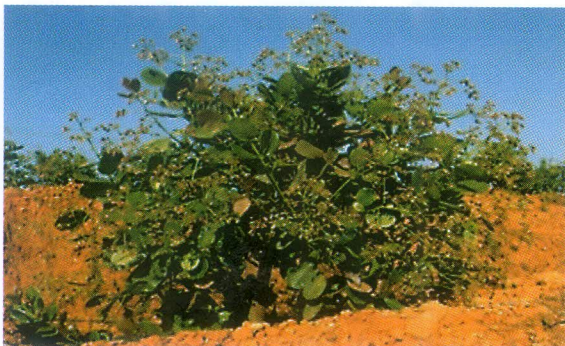


**Pruning and training of plants in ultra density**

height from ground level. Then tip bud can be pinched off to force development of frame work and primary branches and subsequent lateral branches from them. Highly precocious types will flower and fruit during the

year of planting and in some other varieties may be from second season onwards. Once the first harvest is completed (usually during May-June) first pruning at 1 m height from ground level be taken up subsequently

**Flower Bearing in 1 year old plant under ultra density**






every year at same height. After the harvest a spray boardex mixture (1%) be given to prevent the entry of fungal pathogens. Yearly the required dose of fertilizer and manure as local requirement be given and also plant protection measures against major and minor pests.

The results of experiments conducted at Directorate and on farm trials in the farmers field revealed that at 2<sup>nd</sup> season of planting upto 1.5 kg/plant and 3<sup>rd</sup> season onwards about 2-3 kg/plant average yield can be harvested which may bring 12-18 quintals of rawnuts from an acre from 3<sup>rd</sup> year onwards. This harvest is possible and achieved by farmers under good management and intensive care in the field.



### One year old ultra high density plot with NRCC Selection-2 Variety

The technology is well taken by the farmers and growers and more than 100 farmers in various growing regions in Karnataka, Kerala and Tamil Nadu. More awareness about the technology and financial assistance of NHM if extended for this technology can bring revolution in cashew cultivation and production and the targeted requirement of rawnuts in the country can be made available in short span of 4-5 years.

  
(M.G. Nayak)  
Director (Acting)

## FOCUS ON RESEARCH

### Impact of Frontline Demonstrations (FLD) in Cashew

Sajeev M.V. and M.G. Nayak

ICAR-Directorate of Cashew Research, Puttur-574 202, Karnataka

The cashew cultivation in India mainly confines to the states of Kerala, Karnataka, Maharashtra and Goa along the West Coast and Tamil Nadu, Andhra Pradesh, Orissa and West Bengal along the East Coast region. It is also grown in plains like Chhattisgarh, Gujarat, Bihar and Northeast Hill Regions like Meghalaya, Manipur and Tripura and also in Andaman and Nicobar Islands. In India, it is cultivated in an area of 10.35 lakh ha with a production of 6.70 lakh tonnes (2015-16). India has the maximum area (21.6%) under cashew nut and is the third largest producer (17.3%) of raw nuts in the

world. After Vietnam, the country is the second largest exporter, accounting for 34 percent of the world's export of cashew kernels. As far as Karnataka State is concerned, Dakshina Kannada District is the major cashew producing region. Increasing production in this district will contribute largely for the Karnataka state's production. Cashew cultivation receives dwindling importance in Dakshina Kannada District in relation to the prices of other crops like arecanut, cocoa, rubber and coconut.

To improve the cashew cultivation scenario of major cashew-growing regions, DCR, Puttur had implemented Frontline Demonstrations of latest Cashew production technologies over past three decades. Assessment of the impact of recommended cashew production technologies under these FLDs are very important for giving feedback to research system. Hence, to explore the applicability of technology impact premise in the context of Cashew cultivation, the present study was undertaken at DCR with the objective to measure the impact of different varieties on area, production and productivity of cashew and to measure the impact of recommended production technologies on cashew production and productivity in Dakshina Kannada district of Karnataka under FLDs.

Methodology and Instrument to measure impact of FLD in Cashew was developed and the tool was used to measure impact of FLDs on area, production and productivity of cashew in South Karnataka. Data have been collected from FLD farmers who have completed at least 10 years under cashew cultivation and analyzed for measuring the impact of FLD on area, production and productivity of cashew, social and economic benefits accrued and adoption of recommended cashew production technologies in comparison with non FLD farmers of the region. The technology gap and extension gap existing in major cashew varieties were measured and documented along with the status of technology utilisation of FLD farmers in comparison with other cashew farmers.

### Performance of major cashew varieties under FLD

Twelve major cashew varieties under FLD were studied to assess their performance (Table 1; Fig. 1). The variety 'Bhaskara' was identified for the highest yield under demonstration to the tune of 5.77 kg/tree closely followed by variety 'Ullal-3' (5.03 kg/tree). Variety Ullal-1 (4.79 kg/tree) and Madakkathara-2 (MDK-2: 4.60 kg/tree) also were found to give comparatively better yield in relation to other varieties. Varieties Priyanka (4.51 kg/tree) and ullal-4 (4.00 kg/tree) closely followed while varieties VRI-3, NRCS-2, Vengurla-7 and Vengurla-4 were found to perform poorly both in FLD and Non-FLD plot.

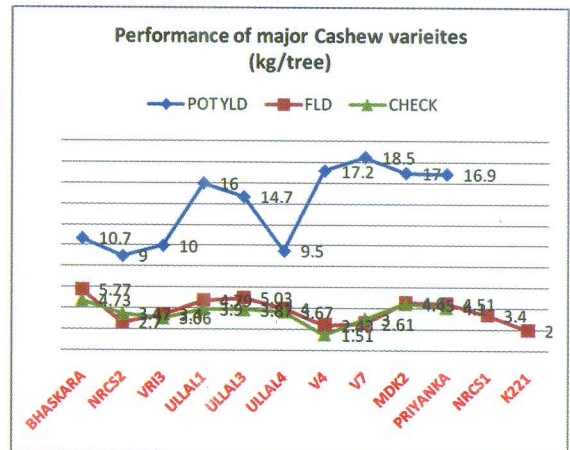


Fig. 1: Performance of major cashew varieties under FLD

Table 1: Impact of cashew varieties on production and productivity of cashew

Variety	Production (kg/tree)				Productivity (kg/ha)			
	Check	Rank	FLD	Rank	Check	Rank	FLD	Rank
Bhaskara	4.73	1	5.77	1	737.88	1	905.89	1
NRCS-2	3.47	7	2.70	8	541.32	7	423.9	8
*MDK-2	4.45	2	4.60	4	694.2	2	722.2	4
Ullal-3	3.87	5	5.03	2	603.72	5	789.71	2
Ullal-1	3.9	4	4.79	3	608.4	4	752.03	3
Ullal-4	3.67	6	4.00	6	572.52	6	628	6
VRI-3	3.06	8	3.40	7	477.36	8	533.8	7
V-4	1.51	10	2.43	10	235.56	10	381.51	10
V-7	3	9	2.61	9	468	9	409.77	9
Priyanka	4.1	3	4.51	5	639.6	3	708.07	5

\* Madakkathara-2

Variety Bhaskara recorded the highest productivity of 906 kg/ha under FLD against 738 kg/ha in Non-FLD farms. Ullal-3 yielded second highest productivity of 790 kg/ha among FLD farmers while variety Madakkathara-2 yielded second highest productivity (694 kg/ha) among Non-FLD farmers. Variety Ullal-1 recorded third highest productivity of 752 kg/ha among FLD plots while variety Priyanka recorded third place in productivity among non-FLD farmers with output of 640 kg/ha.

### Technology and extension gap in major cashew varieties

Technology gap was the lowest in 'Bhaskara' (4.93 kg/tree) where as it was very high in 'Vengurla-7' (15.89 kg/tree) and 'Vengurla-4' (14.77 kg/tree), while extension gap was high in variety 'Ullal-3' (1.16 kg/tree). Very high technology gap was observed with respect to yields of all major cashew varieties grown in this region (Fig. 2).

### Technology utilisation status of FLD and Non-FLD farmers

Technology utilisation status of demonstration

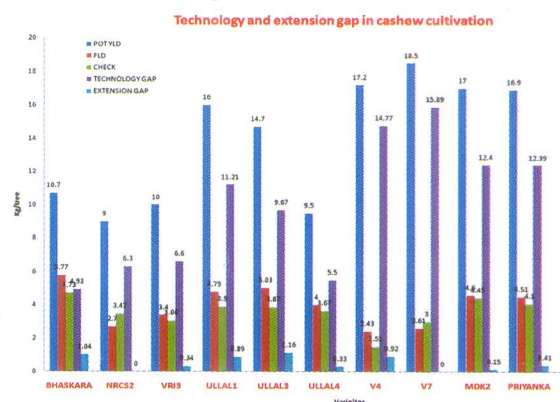


Fig 2. Technology and Extension gap in Cashew cultivation

farmers were found to decline after period of financial support and the Adoption Index of major cashew production technologies among these farmers were recorded as 48 against 40 in case of check farmers (Table 2). Majority (36%) of FLD farmers belonged to High adoption category while majority of check farmers (44%) belonged to medium adoption category.

Table 2: Technology utilisation status of FLD and Non-FLD farmers (n1+n2=129)

Cashew Production Technologies	Adoption Index		Farmers under various levels of adoption (%)					
			Check			FLD		
	Check	FLD	Low	Medium	High	Low	Medium	High
Planting and Initial Care	73	72	23	52	25	28	48	24
Soil and Water Conservation	48	53	33	35	32	26	30	44
Manures and Fertilizers	30	36	33	14	53	33	24	43
Pruning and Training	43	50	32	35	33	35	22	43
Plant Protection	20	30	45	26	29	37	33	30
Intercropping	22	30	75	20	5	63	4	33
Harvesting and Post Harvest	43	43	24	39	37	19	43	38
Overall Adoption Index	40	48	32	44	24	32	32	36

### Constraints faced by FLD farmers

The major constraints faced by FLD farmers were identified (Table 3) as price fluctuations/poor price (80%), low availability of labour (70%), attack of Tea Mosquito Bug (61%) and attack of Cashew Stem and

Root Borer (36%). Other constraints reported were flower drying (35%), poor yielding varieties (23%), problems in collection of nuts/theft (21%), price control by processors (17%), lack of cashew farmers associations (11%) and lack of subsidy after third year of planting (33%).

**Table 3: List of constraints faced by FLD cashew farmers**

Constraints	FLD (%)	Non-FLD (%)
Poor price/Price fluctuation	80	83
Low availability of labour	70	71
TMB attack	61	41
CSRB attack	36	35
Flower drying	35	20
Poor yielding varieties	23	17
Collection of nuts / theft	21	13
Price control by processors	17	12
Lack of cashew farmer association	11	12
No subsidy after initial years	33	-

The results clearly indicate that FLD in cashew has very good impact with farmers under FLD reporting better productivity and adoption of cashew production technologies. However the performance seems to even up with other farmers after the subsidy period is over. Socio-economic and bio-physical factors along with policy environment have a larger contribution in explaining cashew production and productivity and technology component alone cannot be expected to bring a positive impact. Understanding the above dynamics in technology impact can help researchers and extension agencies working in cashew sector to design better innovations and effective outreach strategies.

## PROGRAMMES ORGANIZED

### ICAR-DCR, Puttur celebrates Agricultural Education Day – 2016

The ICAR-Directorate of Cashew Research, Puttur organized the 'Agricultural Education Day 2016' on 03-12-16 on the theme "Scope of Agricultural Education". The programme was organised in association with

Sudana School, Puttur and Karnataka State Education Department. More than 1000 students and teachers from various schools of Puttur and nearby towns participated in the programme.



**Talk on 'Scope of Agricultural Education' by Dr. M.G. Nayak, Director (Acting), DCR**

The students were exposed to the research and extension activities of the Directorate. The theme lecture of the programme was delivered by Dr. M.G. Nayak, Director (Acting), DCR in a student friendly manner where the scope of Agricultural Education was dealt in detail and as appreciable by students. The students were introduced to the importance of agriculture and vast opportunities in job market by the speaker. The programme generated immense curiosity and wide appreciation among the students and teachers.

### WORLD SOIL DAY

On 5<sup>th</sup> December 2016 World Soil Day was celebrated at ICAR-DCR, Puttur. A team from ICAR-DCR visited the cashew farmers of nearby villages i.e. Kuriya, Mundur and Purusharakatte. There, importance of soil testing and soil sampling methodology were explained to the farmers and method demonstration on soil sampling was done in farmers fields. Soil samples collected were taken to ICAR-DCR soil science laboratory.



The samples are being processed and analysed to prepare soil health cards and will be distributed immediately.

A soil test is essential to determine soil fertility levels and make good nutrient management



Mixing and quartering of the sample

decisions. A critical step in obtaining accurate soil tests is collecting representative samples in the field. A composite soil sample should represent a uniform field area. In general, sampling is done at the rate of one sample for every two hectare area.



## राजभाषा हिन्दी कार्यान्वयन

इन छ माही में काजू अनुसंधान निदेशालय में हिन्दी कार्यान्वयन समिति की दो बैठकों को आयोजन किया गया। बैठकों में कार्यालय में हो रही हिन्दी गतिविधियों के बारे में विचार-विमर्श कर आवश्यक सूचना समिति की सदस्यों को दी गई। वार्षिक कार्यक्रम के अनुसार आवश्यक लक्ष्य प्राप्ति के लिए जरूरी कदम उठाने के बारे में चर्चा की गयी। जुलाई महीने में पुचूर नगर राजभाषा कार्यान्वयन समिति की 30वीं अर्ध वार्षिक बैठक का आयोजन किया गया, जिसमें विभिन्न सदस्य कार्यालयों के प्रधान उपस्थित थे। उसी दिन सुबह से दोपहर तक सदस्यों के लिए हिन्दी कार्यशाला का आयोजन किया गया। कार्यशाला में निदेशालय के सभी कर्मचारियों सहित विभिन्न सदस्य कार्यालयों से 40 कर्मचारियों ने भाग लिया।

सितंबर 14-28 तक हिन्दी पखवाड़ा का आयोजन किया गया। इस अवसर पर कर्मचारियों और विद्यार्थियों के लिए

विभिन्न प्रतियोगिता का आयोजन किया गया। डॉ नागरत्ता, हिन्दी प्राध्यापिका, युनिवर्सिटी कालेज, मंगलूरु, मुख्य अतिथी के रूप में उपस्थित थी।



डॉ नागरत्ता, मुख्य अतिथी द्वारा संबोधन

## MEETINGS

### Annual Group Meeting of Scientists of AICRP on Cashew-2016

The Annual Group Meeting of Scientists of All India Coordinated Research Project on Cashew-2016 was held during 27<sup>th</sup> - 29<sup>th</sup> December 2016 at Regional Research Station (TNAU), Vridhachalam, Tamil Nadu.

During the inaugural session Dr. D. Saraladevi, Dean, HC&RI(W), Tiruchirappalli delivered the welcome speech. Dr. M.G. Nayak, Acting Director and PC-AICRP, Cashew Directorate of Cashew Research Puttur presented the Project Coordinators Report followed by felicitation to Dr. N. Kumar, Former Dean (Horticulture), TNAU, Coimbatore and Dr. H. Hameed Khan, Former Project Coordinator (Palms) and Former Head (Crop Production), CPCRI, Kasaragod. The Chief Guest of the inaugural session, Dr.W.S.Dhillon, ADG (Hort. Sci.), ICAR, New Delhi delivered the Chief Guest address where he informed that the Per capita availability of horticultural produce is 100g but the requirement is about 230g. He further mentioned that the world's horticultural productivity is almost 17 tonnes/ha whereas in India it is only 13 tonnes/ha for which we have to strive hard to achieve the gap of 4 tonnes to reach the world average. . The inaugural session was presided by Dr. M. Maheswaran, Director of Research, TNAU who released the publications before his presidential address. Dr. M.S. Aneesa Rani, Professor and Head of Regional Research Station, Vridhachalam gave the vote of thanks.

Thirty one delegates from 12 AICRP Cashew Centres and 3 coordinating centres from different parts of India, rapporteurs, scientists and staff of Regional Research Station and KVK, Vridhachalam, Vegetable Research Station, Palur and Sugarcane Research Station, Cuddalore participated in the inaugural session. The technical session was started with the Action Taken Report on the recommendations of the previous year by Dr. Mohana, G.S., PC Cell In-charge. The presentations were made in three main sessions viz., Crop Improvement, chaired by Dr.N.Kumar, Former Dean (Horticulture), TNAU, Coimbatore; Crop Management chaired by Dr.H.Hameed Khan, Former Project Coordinator (Palms) and Former Head (Crop Production), CPCRI, Kasaragod and Crop Protection chaired by Dr.K.Samiyyan, Dean, AC&RI, Eachankottai, Thanjavur. The Plenary session was chaired by Dr. K. Ramasamy, Vice Chancellor, TNAU wherein he unfolded

the developments made by the countries like Taiwan, Vietnam, Israel with lesser land, rainfall or working force. He informed that in India, target should be fixed for achieving the agricultural productivity. He said that scientists should be the part for the development of the country.

A session on Interaction of development departments and research centres was chaired by Mr. S Kannan, Executive Director & Secretary, The Cashew Export Promotion Council of India, Kollam, Kerala. He elaborated the cashew market, current situation of India and need of the hour for cashew industry to improve the status of India among the Global level during the narration of the cashew kernel import and export and situation of India among the leading countries. He also requested the scientific community that each and every technology has to be uploaded in the website for the industrial development. Farmers inquired about various issues such as CSRB attack in established cashew orchard and cultivation practices for cashew in changing climate scenario. Two progressive farmers of cashew planters of different places viz., Mr.Ramalingam (Ariyalur district), Mr. Narayanasamy (Cuddalore District) illustrated their achievements and expressed their problems in cashew cultivation and also suggested to develop insurance for cashew which will help farmers during natural vagaries.



### Institute Research Committee (IRC) meeting

The 29<sup>th</sup> annual meeting of Institute Research Committee (IRC) of ICAR- DCR, Puttur was held on 13<sup>th</sup> and 14<sup>th</sup> October, 2016 under the Chairmanship of Dr. M.G. Nayak, Director (Acting). Dr. K. Vanitha, Scientist (Agricultural Entomology) and Secretary, IRC welcomed the resource persons and all the scientists of DCR. Dr. M.G. Nayak, Director (Acting), DCR made introductory remarks and expressed his gratitude to the resource persons of 29<sup>th</sup> IRC. There



were five technical sessions chaired by experts of the field. Dr. A.R. Desai, Senior Scientist (Fruit Science), ICAR- Central Coastal Agricultural Research Institute, Goa was the resource person for the technical session on “crop improvement”. Dr. N. Yadukumar, former Principal Scientist (Agronomy), DCR, Puttur was the resource person for ‘crop management and transfer of technology’ sessions. For “Crop Protection” session, Dr. T. Shivashankar, Dean, College of Agriculture, Mandya (UAS, Bengaluru) served as the resource person and for the technical session on “Post Harvest Technology”, the resource person was Dr. Hebbar, K.B., Principal Scientist, Head (Plant Physiology, Biochemistry & Post Harvest Technology), ICAR-Central Plantation Crops Research Institute, Kasaragod, Kerala.

In each session, the results of various ongoing projects and two new project proposals were presented by DCR scientists and discussed in detail. The technical programme for the projects for the year 2016-17 was finalized.

### **Institute Management Committee (IMC) Meeting**

The 45<sup>th</sup> meeting of the IMC was held on 29th November 2016 under the Chairmanship of Dr. M. Gangadhara Nayak, Acting Director, ICAR-DCR, Puttur. The Chairman informed the members about research and achievements of the Directorate. Various administrative and financial matters were discussed and finalized. Dr. Ranveer Singh, Principal Scientist, (HS) Division, ICAR, New Delhi; Dr. Mahabaleshwar



Hegde, Prof. Of Horticulture, Agriculture College, Hassan District. Karnataka; The Special Officer (Cashew), Kerala State Agency of Promotion of Cashew cultivation, Kollam, Kerala state; Dr. D.V.S. Reddy, Principal Scientist, ICAR-Agricultural Technology Application Research Institute, Bangalore; Dr. K. Bhanu Prakash, Principal Scientist, ICAR-IIHR, Bangalore; Dr. N. Vijaya Kumari, Principal Scientist, ICAR-CCRI, Nagpur; Smt. Sharda V. Rai (Non Official Member), Mogarodi, Belthangadi Taluk and Sri. V. Raghuraman, Administrative Officer, ICAR-DCR, Puttur attended the meeting.

### **Institute Joint Staff Council (IJSC) Meeting**

The IJSC meetings were held on 30th September and 30th December, 2016 under the chairmanship of Dr. M.G. Nayak, Director (Acting), ICAR-DCR, Puttur at Kemminje campus of DCR and all the agenda items were discussed for the benefit of DCR staff members.

## **TRIBAL SUB PLAN**

### **Area expansion and FLD under Tribal Sub Plan (TSP)**

Under TSP program, 40 new FLD plots were established during 2016-17 in tribal farmer fields of Dakshina Kannada and Madikeri districts of Karnataka. 26 new FLD plots established during 2015-16 in tribal farmer fields of Dakshina Kannada district of Karnataka and Kasaragode district of Kerala were visited regularly by TSP team of DCR for provision of assistance during planting and aftercare and monitoring. Also, 25 FLD plots established under TSP programme during 2014-15 were also monitored regularly by TSP team comprising of Dr. M.G. Nayak, Dr. G.S. Mohan and Dr. Sajeev M.V. and technical advice was provided on aftercare, pest management and manuring. (Fig. x).



**Monitoring of TSP Plots**

### **Awareness campaigns under NEH programme**

During the current year, a total of 8 progressive farmers in Ghotovi and Mhainamtsi villages of Jalukie District of Nagaland were provided financial assistance

for taking up cashew plantations. Each farmer has approximately 1.0 ha of land and they were provided V-4 cashew variety grafts from CIH, Medziphema. The plots are being monitored by SASRD, Nagaland University. Further, this Directorate has provided funding to establish a cashew processing unit at Dimapur under

the supervision of All Nagaland Cashew Growers Association in order to provide access to processing of raw nuts produced in and around Dimapur as lack of modern cashew processing units had led to disinterest in cashew cultivation among the cashew farmers of that area.

## **MERA GAON MERA GAURAV PROGRAMME**

The scientists of this Directorate conducted a cashew awareness programme at Amara-Mudnoor on 21.09.2017, under MG-MG programme; in which more than 50 farmers had participated. The details of modern cashew production technologies and its cost economics were explained in detail. As some of the farmers informed that they could not get expected nut yields due to flower drying because of fog in Nov. – Dec., it was suggested to plant late varieties to avoid such weather induced losses. Few farmers informed that

old good yielding trees were infested by cashew stem and root borers and the infestation was spreading; hence, the initial symptoms of pest incidence and its management practices were explained through photos. Later, pamphlets on cashew cultivation aspects and pest management were distributed for creating awareness among the farmers. The farmers who had unutilized land were interested to cultivate cashew and it was suggested that they could submit applications for cashew graft allotment during the next year.

## **TRANSFER OF TECHNOLOGY**

### **Exhibitions**

#### **DCR Exhibition at CPCRI, Kasaragode**

The directorate put up an exhibition during the Centenary exhibition and Kisan Mela held at ICAR-CPCRI, Kasaragode during 10-13, December, 2016. Around 100000 farmers representing various districts of Kerala and Karnataka visited the DCR stall during the exhibition. Since cashew is grown widely in Kerala, there was immense interest among the farmers. A lot of queries were raised on opportunities for utilization of cashew apple. Non availability of quality planting material of latest varieties was a great concern echoed by most farmers. The team lead by Dr. M.G. Nayak and comprising of Dr. Sajeev M.V., Mrs. Prabha Susan Philip, Sh. Bhojappa Gowda and Sh. Raghuram Kukade won the best exhibition stall (III Prize) at the event.



**DCR Exhibition at CPCRI, Kasaragode.**

#### **DCR Exhibition at UAHS, Shimoga**

DCR set up exhibition at Krishi Mela of UAHS, Shimoga during 21-10-16 to 24-10-16. More than 2 lakh people representing various districts of Karnataka visited the DCR stall on the four days of exhibition. Scientists from various organizations also visited the stall and necessary information was provided. Non availability of quality planting material of latest varieties in Shimoga and nearby districts was a great concern echoed by most farmers. Other issues were non availability of good varieties for sale from UAHS, Shimoga campus, poor marketing facilities, poor price provided by agents in villages, non availability of proper information on cashew cultivation from line departments in and around Shimoga etc.

#### **Frontline Demonstrations**

Under project on transfer of technology programmes in Cashew, frontline demonstration plots established with financial assistance from NHM through DCCD, Kochi were monitored regularly by extension team of the directorate comprising of Dr. M.G. Nayak and Dr. Sajeev M.V. A total of 30 FLD plots established in Puttur, Sullia and Bantwal taluks of Dakshina Kannada district were visited during the period and technical advisory was provided to the farmers on pest management, pruning, fertilization and marketing aspects.

#### **Participatory Technology Development**

Participatory technology development has been taken up under project on transfer of technology

programmes in cashew with willing cashew farmers to assess and refine various cashew production technologies. Participatory technology development is presently tried in case of ultra high density planting in cashew, pruning and canopy management and suitability of varieties for high density and ultra high density planting in cashew. The plots were monitored regularly, technical advice was given and feedback was collected by the extension team of the directorate comprising of Dr. M.G. Nayak and Dr. Sajeev M.V.



Extension team in PTD plots

### E-extension in Cashew

E-extension was strengthened in cashew through Social Media during the period. The DCR Facebook page [ICAR-DCR PUTTUR] has been regularly updated and uploaded with relevant content. All HRD programmes and farmer awareness programmes conducted at the Directorate were given wide publicity through DCR Facebook page. During the period around 26 posts were made and 202 organizations/stakeholders are actively following DCR Facebook page for updates.

### Advisory visits/ Consultancy

The scientists of this Directorate were requested for technical advice/lectures on various aspects of cashew production by different organizations. The team of scientists provided consultancy/lectures as and when requested and also participated as resource persons in various cashew related programmes.

### Exposure visit to ICAR-DCR

#### Visit of Dignitaries

Name	Address	Date of visit
Dr. Ranveer Singh	Principal Scientist, (HS) Division, ICAR, New Delhi	29-11-2016
Dr. Mahabaleshwar Hegde	Prof. Of Horticulture, Agriculture College, Hassan District, Karnataka	29-11-2016
Dr. D.V.S. Reddy	Principal Scientist, ICAR-Agricultural Technology Application Research Institute, Bangalore	29-11-2016
Dr. K. Bhanu Prakash	Principal Scientist, ICAR-IIHR, Bangalore	29-11-2016
Dr. N. Vijaya Kumari	Principal Scientist, ICAR-CCRI, Nagpur	29-11-2016
Dr. Ravi Bhatt	Head, Crop Production, ICAR-CPCRI, Kasaragod	29-11-2016
Smt. Sharda R. Rai	Non Official Member, IMC, ICAR-DCR, Puttur	29-11-2016
Dr. P. Das	Former DDG (Extension), ICAR, New Delhi	04.12.2016
Dr. D.S. Rathod	Vice-Chancellor, Himachal Pradesh Agriculture University, Palampur	05.12.2016
Dr. T. Mohapatra	Secretary, DARE and Director General, ICAR	11.12.2016
Dr. Gurunath R. Odugoudar	Ex-Board Member, UAS, Dharwad	24.12.2016

#### TV Programme

Nayak, M.G.	A talk on cashew cultivation practices was delivered and recorded by Doordarshan for telecast on DD-I Chandana.	28 <sup>th</sup> - 29 <sup>th</sup> October, 2016
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## Radio talk

Nayak, M.G.	A talk on 'Advances in cashew research and cultivation' delivered and recorded by AIR, Mangalore for telecast	22 December, 2016
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## Supply of Planting Material

Around 100000 cashew grafts of high yielding and recommended varieties were produced and supplied to the farmers and developmental agencies during the period.

## STAFF NEWS

### Inter- Institutional Transfers

- 1 Dr. P.L. Saroj, Director relieved from this Directorate with effect from 01.10.2016 (A.N.) consequent to his selection as Director, ICAR- Central Institute for Arid Horticulture, Beechwal, Bikaner.

### Retirement

- 1 Sri K.M.Lingaraja, Asst. Administrative Officer of this Directorate proceeded on Voluntary Retirement on 3.8.2016 (FN)

### Promotions ( Scientific )

- 1 Dr. Mohana G.S., Senior Scientist (Genetics & Cytogenetics) has been promoted from RGP of Rs. 8000 to Rs. 9000 w.e.f. effect from 24.04.2015.
- 2 Sri Eradasappa, E, Scientist (Genetics & Plant Breeding ) has been promoted from RGP Rs. 6000 to 7000 w.e.f. 26.2.2013.
- 3 Dr. K. Vanitha, Scientist, (Agricultural Entomology) has been promoted from the RGP Rs. 6000 to 7000 w.e.f. 21.4.2013.
- 4 Dr. Ramkesh Meena, Scientist, ((Horticulture – Fruit Science) has been promoted from RGP Rs. 6000 to 7000 w.e.f 6.6. 2012 (Transferred to ICAR- CIAH, Bikaner, Rajasthan)

### Promotions (Technical)

- 1 Sri A. Dr. Lakshmipathi, Sr.Technical Officer has been promoted to the next grade of Asst. Chief Technical Officer w.e.f. 24.8.2015 (Transferred to ICAR-IIHR, Bangalore )
- 2 Sri Padmanabha Hebbar, Ex-Senior Technical Officer has been promoted to the next grade of Asst. Chief Technical Officer w.e.f. 01.01.2014
- 3 Sri R. Muthuraju, Technical Officer has been promoted to the next grade of Sr. Technical Officer w.e.f. 14.11.2014.

- 4 Sri Ravishankar Prasad, Technical Asst. has been promoted to the next grade of Sr. Technical Asst. w.e.f. 28.7.2015
- 5 Sri K. Babu Poojary, Technical Asst. has been promoted to the next grade of Sr. Technical Asst. Asst. w.e.f. 20.7.2015
- 6 Sri.Vijay Singh, Technical Asst. has been promoted to the next grade of Sr. Technical Asst. w.e.f. 18.10. 2015

### Financial Upgradation

- 1 Sri Surendra Kumar Indra Tea/Coffee maker has been granted MACPS w.e.f. 01.06.2014

### Institute recognition

- ICAR-DCR has been awarded with Best Exhibition Stall (III Prize) during Centenary Expo held at ICAR-CPCRI, Kasaragod between 10-13, December, 2016.

### Awards bagged by Scientists

Dr. G.S. Mohan and Dr. M.G. Nayak bagged 'Best Poster Presentation' award in session on 'IPRs, ABS and Farmers' Rights' during 1st International Agrobiodiversity Congress held during November 6-9, New Delhi, India jointly organised by Indian Society of Plant Genetic Resources, New Delhi and Bioversity International, Rome, Italy.



Published by: **M.G. Nayak**, Director, ICAR-Directorate of Cashew Research, Puttur – 574202, D.K., Karnataka.  
Tel No.: 08251-230902; Fax: 08251-234350; E-mail: director.dcr@icar.gov.in Website: <http://www.cashew.res.in>  
Compiled and Edited by: **Dr. Sajeev M.V.**, Senior Scientist [Agricultural Extension].