



# काजू समाचार CASHEW NEWS

काजू अनुसंधान निदेशालय, पुत्तूर के अर्धवार्षिक वार्ता पत्र

HALF YEARLY NEWSLETTER OF DIRECTORATE OF CASHEW RESEARCH, PUTTUR

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## *Happy & Prosperous New Year 2012*

### FROM THE DIRECTOR'S DESK

The Silver Jubilee Celebrations (1986-2011) of Directorate of Cashew Research (DCR), Puttur was held during 23-24 December 2011 at its headquarters to commemorate the completion of 25 years of productive and useful existence and having served the farmers and development departments by developing several improved cashew production technologies. As a part of Silver Jubilee Celebrations, a 'National Expert Consultation on Cashew' with the theme 'Challenges and Strategies for Higher Productivity and Quality of Cashew' and a 'National Cashew Stakeholders Meet' were organized. Around 300 delegates including scientists, technical experts, processors and cashew farmers participated in the Celebrations. The 'National Group Meeting of Scientists of All India Coordinated Research Project on Cashew - 2011' (NGM 2011) was held during 25-27 December 2011 at DCR, Puttur. The details of all these events are given in this issue of Cashew News.

'Thane cyclone' with a very high wind speed created havoc in Cuddalore district of Tamil Nadu and Puducherry on 30 December 2011. The entire cashew area of Panruti, Cuddalore and Kurinjipadi taluks of Cuddalore district were totally devastated. The extent of damage to cashew trees in Vridhachalam taluk was 60-70 per cent due to decrease in the wind speed away from the coast. A team of scientists of AICRP-Cashew Centre at Regional Research Station (Tamil Nadu Agricultural University), Vridhachalam visited and surveyed the

'Thane cyclone' affected area and the recommendations of the team to cope up with the situation include i) Removal of uprooted trees for new planting, ii) Mass replanting programme, iii) Government support for laying out a borewell for every 10 acres for establishment of the new plants, iv) Government support programmes for raising annual crops like pearl millet, blackgram, horsegram, groundnut and kodo millet upto five years etc.

Increasing productivity through development of useful technologies by cashew research institutions and expansion of area under cashew through developmental agencies will have strong impact on increased production of raw cashewnuts in the country. The efforts initiated during XI Plan would be further intensified during XII Plan (2012-2017). African countries such as Guinea Bissau, Nigeria etc. are putting concerted efforts to increase cashewnut production in these countries and this has some relevance on the availability of raw cashewnuts for Indian cashew industry as these countries at present are exporting most of raw cashewnuts produced.

Price of raw cashewnuts has spurted recently in the international market due to short supply. This has resulted in increase in cashewnut price in India also which has encouraged farmers to take up new cashew plantations. Orissa State Govt. has decided to grow cashew plantations on 10,000 hectares on degraded land and barren hills. All these efforts would surely help in producing more quantity of

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cashew nuts needed by cashew industry. India needs to devise new marketing strategies to export its cashew kernels to compete with countries like Vietnam which is planning for selling branded cashew in foreign markets. Maharashtra state excise department has moved a proposal to allow state excise duty exemption on wine made from cashew apple. Exemption of excise duty may help in promoting preparation of wine from cashew apple in the country.

It is high time that cashew farmers form their own association. The Confederation of Horticulture Association of India (CHAI), started in 2010, with the aim to bring synergy amongst different horticultural societies / associations and encourage effective participation of all stakeholders for promotions of horticulture is relevant to cashew sector also. Cashew farmers association when formed may join CHAI to take advantage of the opportunities.

The Cashew Export Promotion Council of India (CEPCI) in association with International Nut and Dried Fruit Foundation (INC), Spain and other world cashew players such as Vietnam Cashew Association (VINACAS), Vietnam; the Brazilian Association of Cashew Nut Manufacturers (SINDICAJU), Brazil; the African Cashew Alliance (ACA) (representing 11 African countries) and other minor players has signed an agreement forming a Global Cashew Task Force for the benefit of the world cashew industry. The Global Cashew Task Force had its first meeting recently in Budapest, Hungary. The Global Cashew Task Force is expected to put thrust on three key activities/aspects such as Research on Nutrition and Health Claims, International Food Safety Norms and Promotion of Cashew.



**[M.G. Bhat]**  
**Director**

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## **SILVER JUBILEE CELEBRATIONS (1986-2011) OF THE DIRECTORATE OF CASHEW RESEARCH, PUTTUR**

The Silver Jubilee Celebrations (1986-2011) of Directorate of Cashew Research (DCR) was held during 23-24 December 2011 at its headquarters DCR, Puttur to commemorate the completion of 25 years of useful existence and having served the farmers and development departments by developing several improved cashew production technologies. As a part of Silver Jubilee Celebrations, a 'National Expert Consultation on Cashew' with the theme 'Challenges and Strategies for Higher Productivity and Quality of Cashew' and a 'National Cashew Stakeholders Meet' were organized. Around 300 delegates including scientists, technical experts, processors and cashew farmers participated in the Celebrations. Dr. M.G. Bhat, Director was the Chairman and Dr. M.G. Nayak, Principal Scientist (Horticulture) was the Organizing Secretary of the Organizing Committee of the Silver Jubilee Celebrations.

In the forenoon of 23 December 2011, the Silver Jubilee Celebrations of the DCR was inaugurated by the Chief Guest Smt. Mallika Prasad, the Hon'ble Member of Legislative Assembly (MLA), Puttur constituency. Dr. M.G. Bhat, Director, DCR extended a warm welcome to the Chief Guest, Guests of Honour, distinguished dignitaries and invitees and gave a brief introduction on the establishment of Cashew Research in India, establishment of NRCC / DCR



and AICRP-Cashew. Dr. Bhat briefly dwelt on progress of cashew cultivation in India through the adoption of technological innovations made at this Directorate. The Chief Guest Smt. Mallika



Prasad, in her Inaugural Address emphasized on the role of scientists in increasing the food production. She exhorted the scientists to think and plan their strategies to give best to the society.



The function was presided over by Dr. K.V. Ahmed Bavappa, Former Director, CPCRI with additional charge of Director, DCR. Dr. M.K. Nair, Former Director, CPCRI with additional charge of Director, DCR and Mr. Venkatesh N. Hubballi, Director, DCCD, Kochi were the Guests of Honour on the occasion. Silver Jubilee Souvenir, two Technical Bulletins and a book on Cashew



were released during the occasion. Dr. H.P. Singh, DDG (Hort.); Dr. K.V. Ahmed Bavappa; Dr. M.K. Nair and Dr. M.G. Bhat were felicitated for their significant contributions made to the cashew research system. The guests spoke aptly on the occasion. Inaugural function formally came to a close with a vote of thanks by Dr. M.G. Nayak, Organising Secretary, Silver Jubilee Celebrations.

Later Smt. Mallika Prasad, MLA inaugurated the exhibition in which various southern ICAR institutes, Development



Departments, Agricultural Entrepreneurs, Self-Help Groups etc. participated.

In the afternoon of 23 December 2011, a 'National Cashew Stakeholders Meet' was organized in which various aspects pertaining to present status of cashew production and post-production were critically discussed among the cashew stakeholders viz., farmers, cashew processors and exporters, nurserymen, economists, scientists and officials of developmental departments. Dr. M.G. Nayak, Principal Scientist (Horticulture), DCR; Shri. K.B. Dundi, Joint Director of Horticulture, Department of Horticulture, Bangalore; Shri. N. Achuta



Moodithaya, a progressive farmer and Dr. Vigneshwara Varmudi, Associate Professor (Economics) delivered the lectures in the meet which generated lot of discussion. During the meet, five cashew farmers were honoured for their innovative role in increasing productivity of cashew after adopting improved cashew production technologies.

In the afternoon of 23 December 2011 and 24 December 2011, a 'National Expert Consultation on Cashew' was held, which comprised of six technical sessions viz., Crop improvement and biotechnological approaches, Developmental strategies, Natural resource management for higher productivity, Horticultural interventions for enhancing productivity, Insect pest management and, Processing and value addition. There was also Special Technical Session chaired by Dr. H.P. Singh, DDG (Hort.) in which a presentation on Biotechnological / Molecular approaches for improvement of horticultural crops was made by Dr. V.A. Parthasarathy, Emeritus Scientist and Former Director, Indian Institute of Spices Research, Calicut. In the technical sessions there was in depth discussion on various strategies and challenges for higher productivity and quality of cashew.

The Valedictory Function was held in the afternoon of 24 December 2011 with Dr. H.P. Singh, DDG (Hort.) in the chair. Dr. S. Ayyappan, Secretary, DARE and Director General, ICAR was the Chief Guest. Dr. M.G. Bhat, Director, DCR,



Puttur and Chairman of Silver Jubilee Celebrations of DCR highlighted the proceedings of the Inaugural Session of Silver Jubilee Celebrations

followed by National Cashew Stakeholders Meet and National Expert Consultation on Cashew.

The recommendations emerged out in the Technical Sessions of National Expert Consultation on Cashew were presented by respective chairman / rapporteur of the sessions. The recommendations were approved by the house for implementation after certain modifications. Dr. H.P. Singh, Deputy



Director General (Hort.), in his remarks, appealed the scientists and other participants to follow the strategies emerged out during National Expert Consultation on Cashew to withstand the global competition in cashew production and trade from other cashew growing countries. He exhorted the cashew scientists to think and plan their strategies for achieving quantum jump in cashew production.

Dr. S. Ayyappan, Secretary, DARE and Director General, ICAR in Plenary Lecture, commended the achievements made by Directorate of Cashew Research, Puttur in terms of possessing largest germplasm collection of cashew in the country as well as developing large number of technologies in association with centres of AICRP on cashew. He also expressed his satisfaction for organizing National Expert Consultation on Cashew to commemorate the completion of 25 years of useful existence of Directorate of Cashew Research at Puttur. He hoped that action plan drawn during the National Expert Consultation on Cashew would help in enhancing productivity and quality of cashew in meeting the demands of domestic as well as international market. At the end, Dr. M.G. Nayak, Organizing Secretary, Silver Jubilee Celebrations proposed a vote of thanks.

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## FOCUS ON RESEARCH

### Effect of Biofertilizers on Growth of Cashew Rootstocks and Soil Microbial Activity

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Biofertilizers are products containing living cells of different types of micro-organisms, which have an ability to convert unavailable form of nutrients to available form through biological processes. The role of biofertilizers for augmenting the fertilizer needs of horticultural crops is gaining importance. The effect of biofertilizer consortia (*Azospirillum*, *Pseudomonas*, arbuscular mycorrhizal fungi (AMF) and P-solubilizer) with or without inorganic fertilizers on growth of rootstocks of cashew (*Anacardium occidentale L.*), and resultant changes in soil microbial activity was assessed. Cashew seeds variety 'Bhaskara' were sown in poly bags of 25 x 15 cm (Two kg capacity) containing potting mixture soil: sand: farmyard manure in 3:2:1 proportion. Inoculation of 5 g each of *Azospirillum*, *Pseudomonas* and P-solubilizer and, 2.5 g of AMF were given as per the treatment at the time of sowing of seeds in the poly bag at a depth of

3-5 cm below the seed and covered with soil, above which seeds were sown with stalk end upwards. One seedling was maintained per poly bag. The experiment was conducted as a completely randomized design with each treatment replicated five times. Each treatment had 50 poly bags. The treatments included i) control (no inoculation and no fertilizer), ii) 100% NPK (11 g urea, 6.25 g rock phosphate and 2 g muriate of potash), iii) biofertilizer consortia, iv) 100% NPK + biofertilizer consortia and v) 50% NPK + biofertilizer consortia. At 105 days after sowing, observations were taken on plant growth parameters and soil microbial activity.

The rootstocks that received biofertilizer consortia were very vigorous with healthy growth. Plant height, stem girth, stem dry weight, leaf dry weight and total biomass of cashew rootstocks were significantly higher in biofertilizer consortia compared to control (Table 1). The increase in

**Table 1. Effect of biofertilizers on growth of cashew rootstocks**

Treatment	Plant height (cm)	Stem girth (cm)	No. of leaves/plant	Leaf area (cm <sup>2</sup> )	Stem dry weight (g)	Leaf dry weight (g)	Root dry weight (g)	Total biomass (g)
Control	35.5	3.35	16.0	45.1	3.14	3.85	1.59	8.58
100% NPK	30.0	3.05	17.5	45.2	1.95	2.61	0.84	5.40
Biofertilizer consortia	41.3	4.00	28.0	65.9	4.66	6.26	2.59	13.5
100% NPK+ Biofertilizer consortia	33.8	3.50	17.5	48.5	3.37	3.98	2.00	9.4
50% NPK+ Biofertilizer consortia	32.9	3.65	16.5	61.6	3.51	4.38	2.43	10.3
CD (p = 0.05)	3.99	0.164	ns	ns	1.45	0.79	1.69	1.88

plant height, stem girth, stem dry weight, leaf dry weight and total biomass was about 16.3, 19.4, 48.4, 62.6 and 57.3 per cent, respectively in biofertilizer consortia over control. The number of leaves produced per plant and leaf area showed an increase of about 75.0 and 46.1 per cent, respectively in biofertilizer consortia over control but the increase was not statistically significant. The root dry weight was also higher in biofertilizer consortia treated plants. The beneficial effects on root dry weight observed may be a result of the inoculation of *Azospirillum*, which play a role in stimulation of root colonization by AMF. No significant difference in growth parameters between the treatments 50% NPK + biofertilizer consortia and 100% NPK + biofertilizer consortia was observed. The growth of cashew rootstocks was adversely affected in 100% NPK treatment. It appears that addition of 100% NPK is not appropriate in the potting mixture used for sowing cashew seeds.

The population of bacteria, fungi, actinomycetes, N-fixers and P-solubilizers in the

soil treated with biofertilizer consortia was significantly higher than the populations in other treatments tested in this study (Table 2). About 37.1, 28.8, 39.5, 53.4 and 55.6 per cent increase in the population of bacteria, fungi, actinomycetes, N-fixers and P-solubilizers, respectively were recorded in biofertilizer consortia as compared to control. Dehydrogenase activity, which is used as an indicator of microbial activity of soil significantly increased in soils with the application of biofertilizer consortia followed by 50% NPK + biofertilizer consortia treatments. The increase in dehydrogenase activity in the treatments biofertilizer consortia and 50% NPK + biofertilizer consortia were 96.8 and 76.5 per cent, respectively over control. A significant reduction in soil dehydrogenase activity occurred with the application of 100% NPK. The results of the present study indicate that the higher dose of NPK fertilizer to cashew seedlings in the nursery may have negative impact on soil microbial population and dehydrogenase activity.

**Table 2. Effect of biofertilizers on soil microbial population and dehydrogenase activity**

Treatment	Bacteria x 10 <sup>5</sup> g <sup>-1</sup>	Fungi x 10 <sup>4</sup> g <sup>-1</sup>	Actinomycetes x 10 <sup>5</sup> g <sup>-1</sup>	N-fixers x 10 <sup>4</sup> g <sup>-1</sup>	P- solubilizers x 10 <sup>5</sup> g <sup>-1</sup>	Dehydrogenase activity (µgTPF/g dry soil/24 h)
Control	106.59	31.52	39.92	3.88	18.77	22.73
100% NPK	98.60	20.35	30.81	3.80	14.34	18.85
Biofertilizer consortia	146.09	40.60	55.68	5.95	29.20	44.73
100% NPK+ Biofertilizer consortia	110.34	30.29	35.81	4.10	16.31	26.90
50% NPK+ Biofertilizer consortia	115.98	36.91	36.80	4.58	18.90	40.11
CD (p = 0.05)	11.81	4.35	3.81	0.52	2.16	3.80

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## AICRP - CASHEW CO-OPERATING CENTRE

KRC College of Horticulture (University of Horticultural Sciences)  
Arabhavi - 591 310, Karnataka

The Indian Council of Agricultural Research (ICAR) has sanctioned a new Co-operating Centre / Voluntary Centre - Arabhavi in Karnataka under All India Co-ordinated Research Project on Cashew (AICRP-Cashew) in the XI Plan EFC. The Headquarters of AICRP-Cashew Centre at Arabhavi is located at a distance of 9 km from Gokak on Belgaum-Bijapur road.

The experiments of the Co-operating Centre of AICRP-Cashew is located in Horticulture Research Station, Kanabargi, Belgaum taluk. It is situated between 15°15' N latitude and 74°32' E longitude with an elevation of 753 m above MSL. Kanabargi Station is located at a distance of 5 km away from Belgaum city on Belgaum - Gokak Road. The Station comes under Agro-climatic conditions of Region-II, Zone-8 (Northern Transition Zone) of Karnataka. The average annual rainfall is 1250 mm and greater part of the rainfall received during the months of May - October. The temperature ranges from 7.5°C (January) to 38°C (April) and the average humidity ranges from 54 to 93 per cent. Soils are texturally red sandy loam and having medium to deep soil depth with a pH of 6.5 to 7.0. The land is slopy in nature and is mostly suitable for plantation crops including cashew. The major objective of the AICRP-Cashew Voluntary Centre at Arabhavi is for conducting applied research on cashew suitable for northern region of Karnataka having light textured soils.



### Research activities

Experiments allotted under AICRP on Cashew are as follows:

- i) Germplasm collection, conservation, evaluation, characterization and cataloguing.
- ii) Varietal evaluation trial - Multilocation trial-V: Performance of released varieties.
- iii) Varietal evaluation trial - Multilocation trial-VI: Special MLT for new centres.
- iv) Intercropping in cashew.
- v) Organic management of cashew.
- vi) Spacing cum fertilizer trial in cashew.

### Address for communication

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## MEETINGS

### राजभाषा हिन्दी कार्यक्रम

इस छः माही में निदेशालय में पुतूर नगर राजभाषा कार्यान्वयन समिति (नराकास) की एक अर्ध वार्षिक बैठक और निदेशालय के हिन्दी कार्यान्वयन समिति की दो तिमाही बैठकों को आयोजित किया गया ।

तिमाही बैठकों में कार्यालय में हो रही हिन्दी गतिविधियों के बारे में चर्चा की गयी और जरूरी सूचना दिया गया । वार्षिक कार्यक्रम सूचि के अनुसार लक्ष्य प्राप्ति के लिए जरूरी कदम उठाने संबंध में भी चर्चा किया गया और निर्णय लिया गया ।



जुलाई महीने में पुत्तूर नराकास की 20वाँ 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” आयोजित किया गया। कार्यशाला में निदेशालय के कर्मचारियों सहित विभिन्न सदस्य कार्यालयों से 40 से ज्यादा कर्मचारी भाग लिए।

हर साल के जैसे, सितंबर 14-28 तक हिन्दी पखवाडा मनाया गया। पखवाडा के अवसर पर कर्मचारियों के लिए विभिन्न प्रतियोगिताओं का आयोजन किया गया। कर्मचारियों को हिन्दी में कार्यालयीन कार्य करने के लिए नगद पुरस्कार दिया गया।

### Observation of Vigilance Awareness Week

The Vigilance Awareness Week was observed at this Directorate from 31 October 2011 to 5 November 2011. Dr. M.G. Bhat, Director of this Directorate administered the pledge on 31 October 2011 at 11.00 am to all the staff members of this Directorate. In his opening remarks, Director mentioned about the importance of honesty and integrity of Government servants in doing all the official activities and general public should not be exploited by the Government servants. Dr. P.S. Bhat, Principal Scientist (Agricultural Entomology) & Vigilance Officer of this Directorate addressed the Staff members. He read the messages from President and the Vice President of India. He stressed the importance of Vigilance Awareness Week and role of Central Vigilance Commission, New Delhi in its implementation in all the Government and Non-Governmental organizations. He expressed

concern that level of corruption is very high in India. He spelt out the duties and rights of every employee of an organization in order to maintain corruption free environment. On the concluding day of Vigilance Awareness Week on 5 November 2011 at 2.30 pm, Dr. Nithyananda Pai, Manjunatha Clinic, Puttur who is also President of Consumer Forum, Puttur delivered a talk on 'Participative Vigilance'. In his talk, he highlighted that one has to fight boldly against corruption. If one is correct in his approach he will have moral right to seek justice. He also mentioned that every one should join together to root out corruption from all spheres of life. One should not make half hearted attempt and leave to fight in the middle. He also extended whole hearted support to everyone who is deprived of justice.

### National Group Meeting of Scientists of AICRP on Cashew - 2011

The National Group Meeting (NGM) of Scientists of All India Co-ordinated Research Project on Cashew - 2011 was held during 25-27 December 2011 at Directorate of Cashew Research, Puttur. The National Group Meeting was inaugurated by Dr. S. Ayyappan, Secretary, DARE & Director General, ICAR, New Delhi and in his Inaugural Address he mentioned that the problem of lower productivity needs to be addressed by identifying appropriate cashew production technologies. He also informed the house that farmers are interested in cultivating cashew due to higher remunerative prices and only elite varieties suitable for their respective agro-climatic systems needs to be promoted. Dr. H.P. Singh, Deputy Director General (Hort.), ICAR, in his Presidential Address mentioned that the Council is interested in furthering the public-private participation in agricultural research. He also appreciated the continued progress in cashew research under AICRP-Cashew and insisted that further research has to be need based and time



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bound in order to face the competition from other cashew producing countries. Dr. M.G. Bhat, Director, Directorate of Cashew Research and Project Co-ordinator, AICRP-Cashew, presented the Project Co-ordinator's report regarding the salient achievements under AICRP-Cashew for the past two years and called upon the research workers to rededicate themselves for conducting research under AICRP-Cashew by keeping finally the interest of farmers in mind.

Action Taken Report on the decisions of NGM-2009 was presented. The technical sessions on Crop improvement (Chairman: Dr. V.A. Parthasarathy & Co-chairman: Dr. B. Jayaprakash Naik), Crop management (Chairman: Dr. K.R.M. Swamy), Crop protection (Chairman: Dr. N.K. Krishna Kumar & Co-chairman: Dr. A. Krishnamoorthy) and Interaction between Development departments and Research centres (Chairman: Mr. Vijay Lal Meena) were held during 25-27 December 2011. The research progress and results obtained from different trials at the AICRP-Cashew Centers *viz.*, Bapatla, Bhubaneswar, Chintamani, Darisai, Jagdalpur, Jhargram, Madakkathara, Paria, Pilicode, Vengurle and Vridhachalam as well as the Co-operating Centres *viz.*, Arabhavi, Barapani and Goa were presented by the scientists of the respective disciplines from each Centre. The salient findings regarding germplasm collection and maintenance, varietal evaluation, performance of released varieties, hybridization and selection being conducted in various Centres were presented in Crop improvement session. In the Crop management session, results obtained from trials on NPK fertilizer experiments, fertilizer requirements in high density planting, drip irrigation trials, intercropping trial and information on planting for organic farming trial were presented. The relevant research findings from the trials on chemical control of pest complex in cashew (Tea Mosquito Bug and other foliage pests), control of cashew stem and root borer, biotic and abiotic factors influencing incidence

of pests etc., were presented by the entomologists during Crop Protection session. Extension activities and development programmes to support cashew area expansion and improving the productivity were discussed in the session on Interaction between Development departments and Research centres. During this session, presentations were made by representatives of Directorate of Cashewnut and Cocoa Development (DCCD), State Cashew Corporations and Development Departments. The results of various experiments under each session were deliberated upon and technical programmes of these projects for the next two years were formulated based on the discussions in the respective sessions.

The Plenary Session was chaired by Dr. S. Rajan, Assistant Director General (Hort.I), ICAR and in his remarks he stressed about creating higher level of awareness among cashew farmers with regard to cashew production technologies and also orienting the research activities to tackle the major field problems. He also recommended enhancing frontline demonstrations on various cashew production techniques such as ultra high density planting in cashew along with drip irrigation and also organic farming in cashew. The recommendations of different technical sessions were presented subsequently by the rapporteurs of respective technical sessions in the Plenary Session.



Dr. S. Ayyappan, Secretary (DARE) & Director General, ICAR inaugurating the National Group Meeting of Scientists of AICRP on Cashew - 2011

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## TRANSFER OF TECHNOLOGY EFFORTS

### Consultancy / Advisory Visits

Scientist of this Directorate served as a member of the team for evaluation and inspection of cashew nurseries and cashew frontline technology programmes in various parts of the country. The team visited various newly planted orchards of Goa Forest Development Corporation, Goa for inspection and evaluation during 21-22 July 2011.

A group of scientists participated in meeting on Good Agricultural Practices held at ICAR Research Complex for Goa, Ela, Goa on 23 July 2011.

A group of scientists participated in evaluation meeting of National Horticulture Mission in Dakshina Kannada district held at Mangalore on 25 August 2011.

A team of scientists participated in the Krishi Mela at Zonal Agricultural Research Station, Brahmavar, Udupi district on 17 October 2011.

A group of scientists participated in a farmers' meet at Kumbra, Puttur taluk organized by Dept. of Horticulture, Govt. of Karnataka on 9 September 2011.

A team of scientists from DCR conducted advisory visits to demonstration farmers' fields



during 7 July 2011 and 9-11 August 2011.

Scientist of this Directorate provided advisory visit to 'ORDER' - an NGO working on tribal welfare at Tumkur, Karnataka on 28 November 2011.

### Radio talk

During the period under report, interview was recorded on varieties of cashew and pests of cashew, and broadcast by AIR, Mangalore on 11 October 2011.

### Visitors

Several individual visitors and visitors in batches including farmers, students and officials to the Directorate were taken to various experimental plots, cashew museum and laboratories and were explained about cashew cultivation practices and research findings of this Directorate.

### Exhibition

23-25 December 2011 - Exhibition was organized by DCR for the benefit of cashew farmers. More than 15 organizations put up their exhibition including national institutes like CPCRI, Kasaragod, IISR, Kozhikode, IIHR, Bengaluru etc. along with DCR Puttur stall. More than 500 farmers and other visitors took benefit of the exhibition. The DCR stall also made sale of various publications.

### Demonstrations

The demonstration plots established in farmers' fields with the financial support of National Horticulture Mission programme of DCCD, Kochi at Puttur, Sullia and Bantwal taluks of Dakshina Kannada district of Karnataka were monitored regularly by the Scientists of this Directorate and technical advice was given as and when required.

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### Supply of Planting Material

About 75,000 cashew grafts of high yielding and recommended varieties were produced under two different revolving fund schemes viz., Mega Seed Project and DCCD Revolving Fund besides the graft production under Institute Revenue Generation programme. Cashew grafts have been supplied to the farmers and developmental agencies.

### Technical Publications

Technical Bulletins published by DCR in December 2011 were:

- ◆ Pruning and Canopy Architecturing in Cashew.
- ◆ Cashew Production Technology (Revised).
- ◆ काजू खेती पद्धतियाँ (Cashew Cultivation Practices).
- ◆ काजू के पेड़ों का कायाकल्प (Rejuvenation Techniques in Cashew).
- ◆ काजू खेती में सघन रोपण (High Density Planting in Cashew).

## STAFF NEWS

### Appointment

Dr. (Mrs.) K. Vanitha - Joined as Scientist (Agricultural Entomology) on 8 August 2011.

Shri. T.S. Ponnaiah - Joined as Administrative Officer on 1 July 2011.

Ms. Joycy Lyra Kokila Rodrigues - joined as Research Associate in the NAIP scheme (A Value Chain on Cashew for Domestic and Export Market) on 22 September 2011.

### Promotion

Mr. Lakshmiathi (T-5) - Promoted as Technical Officer (T-6) w.e.f. 24 August 2010.

Mr. R. Lakshmisha (T-5) - Promoted as Technical Officer (T-6) w.e.f. 15 September 2010.

Mr. K.V. Ramesh Babu (T-5) - Promoted as Technical Officer (T-6) w.e.f. 21 September 2010.

Mr. A. Poovappa Gowda (T-4) - Promoted as Technical Officer (T-5) w.e.f. 3 February 2010.

Mr. Ravishankar Prasad (T-2) - Promoted as Technical Assistant (T-3) w.e.f. 28 July 2010.

Mr. K. Babu Poojari (T-2) - Promoted as Technical Assistant (T-3) w.e.f. 20 July 2010.

Mrs. M. Rathna Ranjini (Assistant) - Promoted as Assistant Administrative Officer w.e.f. 6 August 2011.

### Obituary



Dr. K.V. Nagaraja, Former Principal Scientist (Biochemistry) of this Directorate breathed his last on 4 November 2011 in Chennapattana, Karnataka due to heart attack. He was born on 20 October 1948. He had a very brilliant academic career. Dr. K.V. Nagaraja

worked at Directorate of Cashew Research (DCR), Puttur as Senior Scientist and Principal Scientist for about 23 years. He also worked at CPCRI, Regional Station, Vittal, Karnataka for about four years. He retired from ICAR service as Principal Scientist, DCR on superannuation on 31 October 2010. He made commendable contributions in biochemical aspects of cashew and his contributions will be the source of inspiration to the young scientists and colleagues for all time to

come. Dr. K.V. Nagaraja was a dedicated and most accomplished scientist. He published more than 60 research papers in various journals of national and international repute. He was fellow of the Indian Society for Plantation Crops. By passing away of Dr. K.V. Nagaraja, Scientific community of cashew lost a renowned scientist. The staff of this Directorate deeply mourn the demise of Dr. K.V. Nagaraja and pray to Almighty for peace to the departed soul.

### Area, production and productivity of cashew in India during 2010-11

State	Area (ha)	Production (tonnes)	Productivity (kg/ha)
Kerala	78,000	71,000	947
Karnataka	1,19,000	57,000	491
Goa	56,000	24,000	436
Maharashtra	1,81,000	2,08,000	1,231
Tamil Nadu	1,35,000	65,000	507
Andhra Pradesh	1,83,000	1,07,000	588
Odisha	1,49,000	91,000	669
West Bengal	11,000	11,000	1,000
Others	33,000	19,000	576
Total	9,45,000	6,53,000	720

Source : DCCD, Kochi

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