



काजू समाचार

CASHEW NEWS



भाकृअनुप-काजू अनुसंधान निदेशालय, पुत्तूर के अर्धवार्षिक वार्ता पत्र
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CASHEW: A CROP OF CHOICE FOR FUTURE



Cashew, a neglected tree species in the past, is now gaining prime importance as a crop of choice among the farmers. In the last couple of decades, there has been a perceptible change in crop status of cashew. A crop which was considered as most appropriate for soil conservation, afforestation and waste land development has now become an important horticultural crop with tremendous potential for nutritional security and export earnings. Cashew development programmes have been receiving high priority with increased budgetary allocation. This has resulted in area expansion and increased raw nut production in the country. With the growing demand for raw cashew nut from cashew processors coupled with increased domestic consumption of cashew kernels followed by the stability of the cashew kernel price in the international market, the demand for raw cashew nut is expected to increase steadily.

Presently, acute shortage of labour, non remunerative and fluctuating price of other plantation crops has forced farmers to look for alternative crops. However, the higher market price for raw nut in recent times and less labour

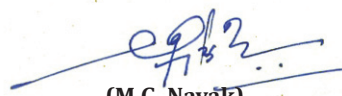
cost involved in cashew cultivation compared to other plantation crops have made the farmers to shift to cashew cultivation in a big way. In the last two fruiting seasons, price of raw nuts rose from Rs. 60-70/kg to 130-150/kg and the peak price was Rs. 206/kg in Chintamani APMC Market in Karnataka. Besides, wide spread knowledge about the availability of high yielding cashew varieties, technical know-how on cultivation practices especially on high and ultra-density planting for early and higher harvests have convinced the farmers to go for cashew cultivation as a profitable enterprise. Suitability of crop to varied soil and climatic situations, low input and labour requirement, less pest and disease problems, knowledge on nutritional value of kernel and cashew apple based products have also made the crop more attractive to the farmers.

There is a possibility of reduction in quantity of availability of raw nut in international market for importing by India due to the establishment of processing units by various African and South East Asian countries and also competition from cashew processing countries viz., Vietnam, Brazil etc for raw nuts. As such, the Indian processors are forced to depend on indigenous production of raw cashew nuts which encourages the cashew growers for enhancing the raw nut production. The ever increasing demand for cashew kernel in

the international market and enhanced domestic consumption has made cashew industry more competitive.

The demand for planting material has gone up tremendously during current planting season and has reached to several lakh grafts. Besides, the government support with NHM, MNREGA and several other schemes through DCCD, Kochi; CEPCI, Kollam & State Horticulture/Agriculture Departments, the supporting move from cashew processors and exporters also will definitely help in expansion of the crop. This is the right time for supply of quality planting material of elite varieties with proper package of practices for cashew expansion programmes. During the last two seasons, especially in Karnataka, the demand for planting material and also for ultra-density planting has come more from nontraditional cashew belts such as Mandya, Gadag, Kolar, Davanagare, Bidar, Shimoga, Chitradurga, Gulburga and Raichur districts. The newer area expansion programmes with region specific varieties and suitable package of practices can realize the dream of doubling farmers' income.

Further, newer cashew varieties for high and ultra density planting needs to be developed with package of practices to reap the early high harvests which can bring the difference in a big way. The precocious hybrid, H-130 of DCR, Puttur can make big difference in such programmes. Higher yield with bold nuts of premium kernel quality (W110 - W150) can bring noticeable improvement in production and productivity of the crop. Similarly, other hybrids / selections from AICRP centres on cashew viz., V-9 from Vengurle (Maharashtra), VRI-5 from Vridhachalam (Tamil Nadu), Balabadra from Bhubaneswar (Odisha), Jhargram-2 from West Bengal and several hybrids from Madakkathara (Kerala) and selections from Goa can bring the good harvest with premium quality kernels. Thus, nutritionally rich cashew will be a suitable choice for waste land development, ecological enrichment and doubling farmers' income.



(M.G. Nayak)
Director (Acting)

FOCUS ON RESEARCH

Makeshift Solar Dryer – A farmer friendly technology to transform perishable cashew apple into stable food powder

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India pioneered in the utilization and promotion of cashewnuts, but failed to exploit the cashew apple. As a result, vast tonnage of cashew apples is currently wasted without economically utilizing it, except in Goa state to some extent. Cashew apple is highly nutritious and a valuable source of sugars, minerals and vitamins. It is comparable with several other fruits in the content of the nutrients but superior in Vitamin 'C' and riboflavin. Cashew apple contains 85 % juice which contains fructose, glucose, sucrose, maltose and acidic

substance mainly malic acid. The astringent and acrid principles in cashew apple produce roughly unpleasant and biting sensation on the tongue and throat. The phenolic compound, tannin determines the astringency of fruits and varies from 0.06 to 0.22 g per 100g in fresh cashew apple.

Production of cashew apple is estimated to be around 65 lakhs tonnes per annum and its utilization is limited owing to high susceptibility to physical injury, which leads to microbial spoilage during harvest, transportation and storage. Its

storage stability is poor and complete spoilage can occur within hours of harvest. Seasonal production of cashew apple is one of the greatest handicaps for the processing industry. Considerable delay in the system of collecting cashew nuts from fallen fruits also limits the availability of quality cashew apples for processing. At this juncture, development of drying system harnessing solar energy for dehydration either at or nearby production catchments becomes indispensable. Dehydrated product can be shifted to processing industry for size reduction and for further use in food products. Several products have been developed from cashew apple powder (CAP) like cookies, porridge mix, nutri-mix, bread spread, laddu, chocolate, doughnuts, sponge cake, koftas, soup etc. Besides, cashew apple preservations have been extensively used traditionally for several ailments.



Make shift Polyhouse Solar Tunnel Dryer

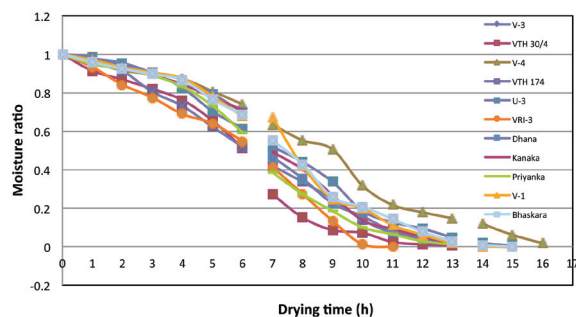
A make shift poly house solar tunnel dryer (PHSTD) was developed following drying principles and installed at this Directorate in a manner to harness maximum insolation for the geographical location of the site. It consisted of a hemi-cylindrical walk in type metallic frame structure covered with UV-stabilized semitransparent polyethylene sheet of 200 μm thick. It has a base area of 3.75 x 6.00 m for drying around 0.4 t per batch. The structural components of solar tunnel drier are suitably designed to dismantle and shift to any location. Two chimneys are placed at equidistance apart on the top of tunnel to release the moisture to

the environment during drying. Performance of the developed solar dryer was tested in 'No Load' condition in terms of air temperature and relative humidity. In the process of drying, heat is necessary to evaporate moisture from the material and a flow of air helps in carrying away the evaporated moisture. Due to insolation, air inside the dryer is heated up and instigates moisture transfer from the material to be dried. Simultaneously, buoyancy stimulates air flow to drive out humid air depending on the prevailing air velocity.

Protocol for preparing CAP using PHSTD

- Harvest fully ripened cashew apples (CA) and wash it in running water to remove adhering dirt or other unwanted matter.
- Manually or mechanically slice cashew apples (2-3 mm thick with circular c/s) and treat it with NaCl (1%) solution for 5 min. Later the salt treated CA slices need to be immersed in KMS solution (0.1%) for about 2-3 min.
- Drain excess water adhering to surface of CA slices by transferring to wire mesh tray.
- Drained CA slices are spread in a thin layer on the wire mesh tray, loaded on to the mobile trolley and shifted to PHSTD.
- Change the position of the tray after every 2 h and turn partially dried CA slices after 4-5 h to ensure uniform drying.
- Dry under solar tunnel for 13-14 h (End point: CA slices become crispy and appear shrivelled on its surface).
- Grind dried CA slices for size reduction (to enhance further drying) and dry under convection with its air temperature maintained at 60°C for 75 to 90 min.
- Pulverise the dried CA slices and sieve to obtain uniform particle size CAP.

Effect of varieties on drying: Irrespective of variety of cashew apples, drying characteristics showed falling rate period of drying and the time required to reduce its moisture to desired level followed the same trend. Depending on the initial moisture content of the cashew apple, total time required to bring down its moisture to 16% w.b ranged from 7 to 11 h.



Drying characteristics of cashew apple slices under PHSTD

Effect of pre-treatment on drying: Predominantly, ascorbic acid and tannin content in cashew apple decides quality of its value added products. Therefore, it is recommended to reduce the tannin content and retain ascorbic acid possible. Accounting this problem, cashew apple slices were treated with selected chemical viz., NaCl, PVP and Gelatine with 1 and 2% concentration for 5 min. followed by KMS treatment as a general recommendation for 2 min. Treated cashew apple slices were dried under natural convection environment and its drying characteristics evinced that the rate of drying is not influenced by any of the treatments. Chemical analysis of cashew apple powder obtained after solar drying indicated that salt (1%) aids in higher reduction in tannin content and retention of ascorbic acid than all other treatments investigated.

Effect of size reduction on drying: Investigations on drying of size reduced cashew apples viz., slices (circular c/s), cubes and vertical segments (radial cut along major axis) under natural convection

solar dryer showed faster rate of drying due to increased surface area exposed to drying media. In the case of cubes or radial cut, migration of moisture from central core of the material to surface needed more time for moisture transfer into drying media. Besides, practically it is easier to slice cashew apple in to slice rather than cube or segment with minimal loss of juice content. Furthermore, cashew apple attains stable position and convenient to cut across major axis, while mechanizing slicing of the fruit for bulk production.

Effect of juice extracted cashew apple on drying: Cashew apples were subjected to static pressure using 2-ton load hydraulic juice extracting machine to reduce the juice content of the fruit and later exposed to solar drying. Rate of drying of squeezed cashew apples samples found to be slower, primarily due to limited surface area opened while applying compressive force during juice extraction. Moreover, paraffin layer coat on the apple skin restricted moisture diffusion process.

Cost of production of CAP using PHSTD with basic assumptions viz., cost of fabrication and installation (Rs. 50,000/-), economic life of PHSTD (10 years), operating capacity of dryer (0.4 t), CAP production per batch (75 kg); production per season (4.5 t), depreciation (10%); repair and maintenance (7.5%); interest rate (7.5%) etc., was worked out to be Rs. 20/- per kg. Technology developed for drying cashew apples harnessing solar energy is a low cost one and it can be followed in cashew growing regions. As such, cashew apples are not utilized by growers, this technology aids to convert bulk cashew apples into powder form having long shelf life. The diversified food products could be prepared in a small scale at farm or can be supplied to food processing industries for large scale production. As farmers are unable to get any benefit from cashew apple which is considered as waste at present, this will certainly help to get additional revenue and motivate them to continue in cashew supply chain.

PROGRAMMES ORGANIZED

Cashew farmers fair

This Directorate celebrated Cashew Farmers Fair on 11th March, 2017 witnessed by over 200 participants which included cashew farmers, nursery men, officials of KVK, NGOs and Scientists. Sri. S.R. Satishchandra, President CAMPCO was the Chief Guest of the programme and Dr. W.S. Dhillon, ADG (Hort-I), ICAR, New Delhi and Sri. Achutha Moodithaya, Progressive Cashew Farmer were the Guests of Honour. Dr. M.G. Nayak, Director (Acting), ICAR-DCR, Puttur, presided over the inaugural session. Dr. T.N. Raviprasad, Principal Scientist (Ento.), ICAR-DCR welcomed the dignitaries and participants and highlighted the achievements of this Research Directorate since its inception. Shri. S.R. Satishchandra, in his inaugural address, drew the attention by mentioning the revolutions in Indian Agriculture and present multipronged approach in the developmental activities. He stressed that cashew farmers should not be left behind and maximum benefits should be harvested by them through these revolutions. He appreciated the research achievements of ICAR-DCR and called for wider outreach of the technologies in collaboration with development departments. Dr. W.S. Dhillon, ADG (Hort-I), ICAR, New Delhi, stressed upon the importance of horticultural crops in providing nutritional security to the country. He opined that productivity of cashew ought to be raised to world level and successful varieties in cashew need to be released from this Research Directorate.

In his presidential address, Dr. M.G. Nayak, Director (Acting), ICAR-DCR called upon the farmers to follow the right technologies along with proper recommendations as indicated by the scientists to reap the benefits from cashew cultivation. He promised full cooperation of this Directorate to cashew farmers of this region and congratulated

the successful farmers for their achievements.

Farmers' scientist interaction session was conducted to clarify various queries raised by farmers. On this occasion, an exhibition of cashew production technologies was also organized along with visit to cashew research plots. During the programme, decisions support system for cashew germplasm interlinked with institute web site was opened and two extension leaflets viz., 'Cashew cultivation practices' and 'Sudharitha geru besaya' were released by the dignitaries. Progressive cashew farmers got opportunity to share their views on cashew cultivation during the programme. The programme concluded with vote of thanks by Dr. Sajeev, M.V, Senior Scientist (Ag. Extension) and coordinator of the programme.



Inauguration of Cashew Farmers' Fair at ICAR-DCR, Puttur

Awareness programme on "Protection of Plant Varieties and Farmers' Rights"

An awareness programme on "Protection of Plant Varieties and Farmers' Rights" Act (PPV & FRA) was organised on 18th March, 2017 at *Swedha Bindhu farm* belonging to Shri. Kadamajalu Subash Rai, Progressive farmer, Kedambady, Puttur, Karnataka. Shri Nalin Kumar Kateel, Honourable Member of Parliament, Mangalore, Smt. Shakuntala Shetty, Member of Legislative Assembly, Puttur, Dr. R.R. Hanchinal, Chairman, PPV & FRA, New Delhi,

Dr. N.K. Krishna Kumar, Country Representative, Bioversity International, New Delhi and Dr. R.C. Agarwal, Registrar General, PPV & FRA, New Delhi were the important dignitaries present during the programme. Around 600 farmers from Dakshina Kannada, Udupi, Sagara, Soraba, Shimoga, Gadag and Kasaragod had participated in the programme.



Dignitaries on the dias during the Programme on PPV & FRA

Foundation Day of ICAR-DCR 2017 and Farmers' Meet

ICAR-Directorate of Cashew Research, Puttur celebrated its 31st foundation day on 17th June, 2017. On this occasion, 'Farmers' Meet - 2017' was also organized in which more than 150 cashew stakeholders attended. Dr. D.C. Chowta, Progressive farmer from Kasargod, was the chief guest of this function and guests of honour were Shri B.K. Ramesh, General Body member, Indian Council of Agricultural Research, New Delhi and Dr. Venkatesh N. Hubballi, Director of Directorate of Cashew and Cocoa Development, Cochin, Kerala. The Acting Director, DCR, Puttur, Dr. M.G. Nayak presided over the inaugural session and welcomed all the participants and highlighted the importance of sharing farmer's innovations facilitating 'farmer to farmer' learning. He emphasized that the adoption of latest technologies along with high yielding cashew varieties is the need of the hour for realizing the quantum jump in production of cashewnut.



Lighting the lamp during ICAR-DCR - Foundation day

After inauguration, the renovated website of the institute (<http://cashew.icar.gov.in>) and two technical leaflets on 'Ultra density planting in Cashew' and 'Post Harvest Technologies for Commercialization in Cashew' were released. In continuation, two selected cashew farmers viz., Shri. Sheenappa Gowda, a progressive farmer from Perabe, Puttur for having achieved higher productivity in cashew in a span of three years and Shri Dhooma Malekudiya, who initiated cashew cultivation under tribal sub plan of this institute were felicitated.

In the inaugural address, Dr. Chowta opined that farmers of this region gave more impetus for arecanut and one should grow income generating crops along with many other fruit crops. He added that farmers should be able to fix the price for their own produce. Dr. Venkatesh Hubballi, Director, DCCD, Kochi, speaking on occasion said that this is a golden period for cashew as the price is high and farmers are self motivated. He said that an area of 12,000 ha in Karnataka and 10,000 ha in Kerala has been identified for area expansion.

Sri. B.K. Ramesh, member, ICAR General Body mentioned that agriculture has been the part of our culture and tradition and advised the farmers to go for cashew cultivation as cashew production proves to be highly profitable. Sri. Nagaraja, Managing Director, Karnataka Cashew

Development Corporation (KCDC), Dakshina Kannada, Karnataka, while addressing the gathering, said that cashew is a low input and high remunerative crop to the growers. He suggested to take the advantage of advanced technologies like high density planting for realizing maximum profit per unit area. The programme came to an end with a 'Farmers – Scientists Interaction' session and vote of thanks by Dr. J.D. Adiga, Principal Scientist (Horticulture) of this Directorate.

Awareness programme on Cashew cultivation



Farmers from Punacha at ICAR-DCR, Puttur

About 40 Farmers sponsored by Punacha Cooperative Society in Dakshina Kannada attended a programme on 'Cashew Cultivation' organised at this Directorate on 21st February, 2017 funded by 'ORP on Management of Sucking Pests in Horticultural Crops', an ICAR-Net work project. During the programme, information about varieties, cultivations aspects, planting material and subsidies available for farmers were shared to the participants. Dr. K. Vanitha, Scientist (Ag. Entomology), ICAR-DCR delivered a lecture on 'Insect pests of cashew and their control'.

Swachh Bharat Abhiyan

The Swachh Bharat campaign was arranged at ICAR – DCR, Puttur once in a week for two hours and certain activities like cleaning office premises, weeding and collecting waste for composting, cleaning public roads etc. Besides, following GoI

directives, 'Swachhta Pakhwada' was arranged between 16th to 31st June, 2017, wherein, all the staff of this Research Directorate actively participated in the programme. In a special meeting arranged at this Directorate, Dr. Sulekha Varadaraj, Senior Paediatrician, ESI hospitals, Puttur, Karnataka delivered a lecture on 'Healthy and hygienic life'. During the valedictory function, Dr. Prasanna Rai K, Professor and Head, Department of Botany, St. Philomena College, Puttur, Karnataka highlighted the importance of maintaining clean environment.



Meeting on 'Swachhta Pakhwada' at ICAR-DCR, Puttur

World Environment Day

The World Environment Day was observed at ICAR-DCR Puttur on 5th June 2017 under the Chairmanship of Dr. M.G. Nayak, Director (Acting), ICAR-DCR, Puttur, Karnataka. Shri Jayaram Poojari, Sr. Health Inspector, Department of Health, D.K. District, Mangalore spoke on "Importance of preserving environment for the present and future". Information related to Malaria, Dengue and other contagious diseases spreading in the region and taking-up preventive measures to control the spread of such diseases was emphasized. He emphasized the need for maintaining cleanliness around our living places and also maintaining hygiene to prevent contagious diseases. During this occasion, blood sampling programme was initiated for the staff and family members of this Directorate and

workers engaged in building construction at this institute with the help of Health Department, Govt. of Karnataka to prevent the outbreak of monsoon related contagious diseases like malaria, dengue etc. In addition, fogging and clearing of stagnated water were also taken up in the office premises, construction site and residential complex to control the mosquito menace.



Shri Jayaram Poojari, delivering talk during World Environment Day

International yoga day

The International Day of Yoga was celebrated at ICAR- DCR, Puttur on 21st June, 2017 and all the

staff of this Directorate attended the programme. Director (Acting) of this Directorate in his inaugural speech mentioned the need of yoga in our daily life and solicited to practice yoga regularly. During the programme, Shri. Balasubramanya Bhat, and Sri, K.Prasanna, hailing from Puttur, trained the institute staff in Pranayama, Anuloma, Viloma, Bastrika, Bhramari, Pranavadyam, Surayanamaskaram, Ardhamanduka, Savasana etc. While practicing yoga, Shri. Balasubramanya Bhat conveyed the benefits of yoga in upbringing mentally stable and physically fit working force in every establishment.



ICAR-DCR staff practising Yoga

TRAINING

Cashew farmers training

A training program on different aspects of cashew cultivation, varieties and insect pest management was organised by Karnataka Cashew Development Corporation (KCDC) in association with this Directorate on 4th March, 2017. About 180 farmers from Kundapur and Udupi participated in the programme. Field visits to cashew orchards of this Directorate and progressive farmers were also arranged for the farmers to promote cashew cultivation.



Inauguration of cashew training program at this Directorate

One day training was organized by AICRP on Cashew, Bhubaneswar at Somgiri, Keonjhar (Odisha) under TSP programme. A total of 50 tribal farmers attended the training and they were educated in "Improved production technology of Cashew". On this occasion an exhibition and field demonstration were also organized to educate the tribal farmer in production and protection technologies of cashew cultivation.



Training programme for Tribal farmers at Odisha

MEETINGS

राजभाषा हिन्दी कार्यान्वयन

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

तिमाही बैठकों में कार्यालय में हो रही हिन्दी गतिविधियों के बारे में चर्चा किया गया। गृह मंत्रालय, भारत सरकार द्वारा दिये गये वार्षिक कार्यक्रम के अनुसार लक्ष्य प्राप्ति हेतु जरूरी कदम उठाने के बारे में भी चर्चा किया गया। कार्यालयीन कार्यों को हिन्दी में करने के लिए और हिन्दी कार्यान्वयन को बढ़ावा देने के लिए उचित कदम उठाने के बारे में निर्णय लिया गया।

प्रशासनिक कार्यों में हिन्दी कार्यान्वयन करने के लिए प्रसासन से संबंधित अनेक प्रपत्रों को द्विभाषी में बनाया गया।

27 जनवरी को पुत्तूर नराकास की 31वीं अर्धवार्षिक बैठक का आयोजन हुआ। बैठक में पुत्तूर नगर के विभिन्न केंद्र सरकारी कार्यालयों के प्रतिनिधि भाग लिए। बैठक में इन कार्यालयों में हो रही हिन्दी के काम-काज के बारे में चर्चा हुई और जरूरी दिशा निर्देश भी दिए गए। इस बैठक के



अर्ध वार्षिक बैठक में अध्यक्ष महोदय का उद्बोधन

अवसर पर राजभाषा कार्यान्वयन कार्यालय, बंगलुरु से आए राजभाषा अधिकारी उपस्थित थे। उन्होंने सदस्यों को अर्ध वार्षिक रिपोर्ट भरने के बारे में मार्गदर्शन किया।

निदेशालय के और नराकास के सदस्य कार्यालयों के कर्मचारियों के लिए हिन्दी कार्यशालाओं का आयोजन किया गया। कार्यशाला में दैनिक काम-काज में उपयोग होनेवाले पत्र लेखन, मसौदा लेखन, नोट लिखना आदि के बारे में प्रशिक्षण दिया गया। कार्यशाला में 45 कर्मचारी भाग लिए।

Meeting on DUS test guidelines for cashew

The DUS test guidelines for cashew was finalized during the task force meeting held on 18th March, 2017 at this Directorate. This document contains both off-site and on-site testing procedures along with 6 grouping and 25 evaluation characters. Illustrations are also included for some characters to help in recognition of categories under each character at ease.



DUS Committee meeting at ICAR-DCR

TRANSFER OF TECHNOLOGY

E-extension in Cashew

The DCR Facebook page [ICAR-DCR] has been regularly edited, updated and uploaded with relevant content. All HRD programmes and farmer awareness programmes conducted at the Directorate were given wide publicity through this facility. During the period, website of DCR (<http://cashew.icar.gov.in>) was also updated.

Advisory visits/ Consultancy

The scientists of this Directorate offered technical advice/lectures on various aspects of cashew production and processing to the farmers. The team of scientists provided consultancy/lectures as and when requested and also participated as resource persons in various cashew related programmes.

TV programme / Radio talk

Dr. S. K. Mukherjee, AICRP on Cashew, OUAT, Bhubaneswar delivered a radio talk in regional language (Odia) on “*Kaju fasala re roga O’ poka parichalana*” on 14th June, 2017.

Supply of planting material

About 1,21,200 nos. of cashew grafts of high yielding viz., Bhaskara, NRCC Sel-2, Ullal-1, Ullal-3, Priyanka, Vengurla-4, Vengurla-7, Madakkathara-2 etc., were produced and supplied to the farmers

and developmental agencies from this Directorate during the period.

A massive cashew grafts distribution program to the farmers of Karnataka has been jointly taken up by Karnataka Cashew Manufacturer’s Association (KCMA) and Sri Vishweshwar Theertha Swamiji of Pejavar Mutt and Sri Kshetra Grameena Abhivruddhi Yogene supported by Sri Veerendra Heggade, Dharmadhikari, Sri Manjunatha temple, Dharmasthala. Cashew grafts were distributed to the farmers free of cost and completely subsidized by KCMA and Dharmasthala organisation.



Planting of a Cashew graft by Sri Veerendra Heggade

CASHEW STATISTICS

Cashew production scenario in India (2016-17)

State	Area (000 ha)	Production (000 MT)	Productivity (Kg ha ⁻¹)
Kerala	91	84	962
Karnataka	128	85	672
Goa	58	33	561
Maharashtra	186	257	1378
Tamil Nadu	142	68	478
Andhra Pradesh	186	111	600
Orissa	183	94	513
West Bengal	11	13	1140
Jharkhand	15	6	393
Chhattisgarh	14	9	681
Gujarat	7	7	900
Pondicherry	5	2	432
Assam	1	1	1028
Tripura	4	3	812
Meghalaya	9	6	686
Manipur	1	0	360
Nagaland	1	1	1080
Total	1041	779	753

Source: Directorate of Cashew and Cocoa development, Kochi, Kerala

Export and import scenario of cashewnuts

Year	Cashew kernel (CK)		Cashewnut shell liquid (CNSL)		Import of raw cashewnuts (RCN)	
	Quantity (Lakh MT)	Value (Crores)	Quantity (Lakh MT)	Value (Crores)	Quantity (Lakh MT)	Value (Crores)
2012-13	1.00105	4046.23	9192	29.84	8.92365	5331.74
2013-14	1.14791	5058.73	9480	38.61	7.71356	4563.99
2014-15	1.18952	5432.85	10938	55.81	9.39912	6570.93
2015-16	0.96346	4952.12	11697	57.59	9.58339	8561.01
2016-17	82302	5168.78	11422	44.00	7.70446	8839.42

Source: Cashew Export Promotion Council of India, Kollam, Kerala (DGCI&S, Kolkata)

STAFF NEWS

Appointments/Transfers

- ◆ Dr. J. Dinakara Adiga, Principal Scientist (Hort-Fruit Science) joined back to this Directorate on 1st March, 2017 after having served as Professor (Fruit Science) at College of Horticulture, Bengaluru on lien.
- ◆ Dr. Preethi P, Scientist (Hort-Fruit Science) joined this Directorate upon transfer from ICAR-Indian Institute of Oil Palm Research, Pedavegi, Andhra Pradesh on 3rd June 2017 (FN).
- ◆ Sri Muralidhara B.M, Scientist (Hort-Fruit Science) joined this Directorate upon transfer from ICAR – Indian Institute of Horticultural Research, Bengaluru on 27th June, 2017 (FN).

- ◆ Dr. M. Loganathan, Principal Scientist (Plant Pathology) relieved from this Directorate on 8th March, 2017(A.N.) consequent upon transfer to ICAR-National Research Centre for Banana, Tiruchirapalli, Tamil Nadu.
- ◆ Dr. Sajeev M.V, Senior Scientist (Agricultural Extension) relieved from this Directorate on 16th March, 2017(AN) consequent upon transfer to ICAR- Central Institute of Fisheries Technology, Cochin, Kerala.

Retirement

- ◆ Sri Krishnappa, Skilled Support Staff retired on superannuation on 30th April, 2017.
- ◆ Sri B. Chennappa Poojary, Skilled Support Staff retired on superannuation on 30th June, 2017.



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