



संवादपत्र NEWSLETTER

भाकृअनुप - केंद्रीय तटीय कृषि अनुसंधान संस्थान
(भारतीय कृषि अनुसंधान परिषद)

ICAR-Central Coastal Agricultural Research Institute
(Indian Council of Agricultural Research)



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भारतीय कृषि अनुसंधान परिषद

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ICAR - Central Coastal Agricultural Research Institute (CCARI) is one of the research Institutes under Natural Resource Management (NRM) division of Indian Council of Agricultural Research (ICAR), New Delhi. The Institute is mandated to carry out the research and extension work on field and horticultural crops, livestock, and fisheries. Research activities are executed through five functional sections viz Natural Resource Management, Crop Science, Horticulture Science, Animal Sciences and Fisheries Science.

It is a pride of our institute that 3 cashew varieties, Goa cashew 1, Goa cashew 2 and Goa cashew 3, and two rice varieties, Goa dhan-1 and 2 have been released during current year. Besides this, identification of promising crop varieties/accessions of field and horticultural crops, identification of salt tolerant microbe for plant growth promotion, selection of salt tolerant rice varieties, development of rice and plantation crop based farming system models for improved livelihood, development of eco-friendly management practices of major insect pests and diseases in major crops, development of low cost protected structures for vegetable and flower crop production, development of boar semen extender, standardization of package of practices for goat and poultry, exploration of fish diversity of Goa etc., are significant. Scientists of the Institute published many research articles in peer reviewed journals and technical bulletins, extension folders, posters, etc. The staff of the Institute received recognitions for their research, administrative and extra-curricular excellence.

The mission of Institute is accomplished through execution of Institute research projects. Besides this it is a regular centre for AICRPs on cashew, integrated farming system, vegetable crops, palms, pig and animal disease monitoring & surveillance and voluntary centre for rice and arid legumes. Research projects are also funded by ICAR through various network platforms and collaborations, Department of Science, Technology & Environment, Department of Biotechnology, etc. Extension and development projects are channelled through various other programmes like Tribal Sub Plan, National Horticultural Mission, Rashtriya Krishi Vikas Yojana, NFDB etc.

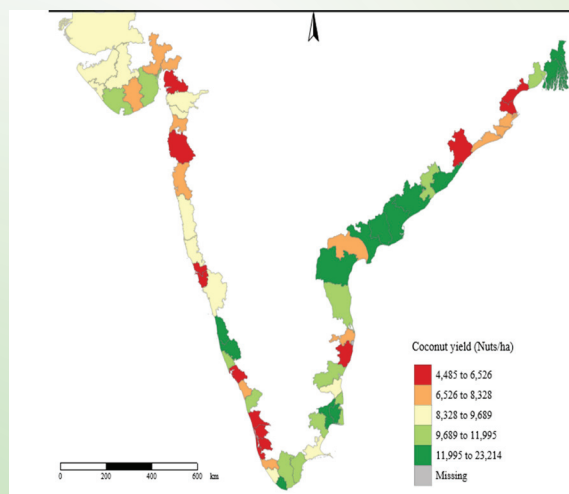
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DIRECTOR



RESEARCH HIGHLIGHTS

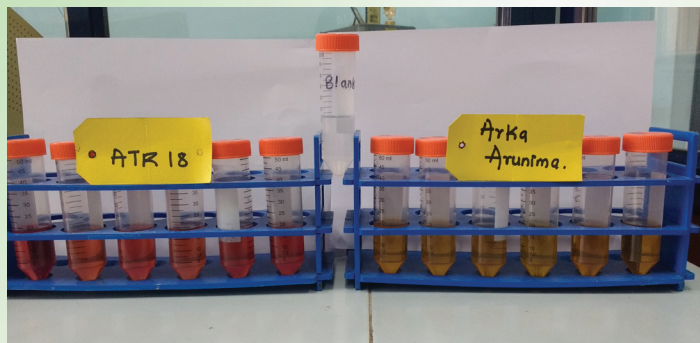
Mapping the coconut productivity of coastal India (Arunachalam V and Bappa Das)

Coconut is a major crop of coastal humid tropics and is grown in all the 65 districts of peninsular coast of India. Knowledge of productivity of a crop in a district is necessary to plan research, development and policy measures for the crop. Area, production, productivity of the coconut crop for 2015 in each district was compiled from the statistics available at Coconut Development Board website. Productivity of the crop in the units of nuts/hectare was used for mapping. The data is fit into the geographical map of India using the colour codes for five groups of productivity levels with the help of R software. Districts with very low coconut productivity in Kerala, Goa, Gujarat and Odisha states were identified and mapped.



Validation of betacyanin rich amaranth germplasm IC-598190 (Arunachalam V)

Red leaves of Vegetable amaranth has immense potential as edible betacyanin pigments in ice creams and jellies of food industry. Betacyanin rich genetic stock of amaranth (IC-598190) was developed and compared with Arka Arunima during two years. The genetic stock IC-598190 continued to perform with high betacyanin content over the released red amaranth variety Arka Arunima during both years.



Germplasm/Variety	Betacyanin content microgm/ gm fresh weight	
	2015-16	2016-17
Arka 18 (IC-598190)	416.26±19	329.4±75
Arka Arunima	314.89±22	166.9±37



Natural variation in Kokum fruit characters

(S Priya Devi)

The study on development of DUS characters for kokum is under progress in the institute. As a part of it, variation in fruiting season and fruit characters were studied in 72 trees of *Garcinia indica* from nine different populations geographically distributed in Goa. Fruiting season varied from early to mid and mid to late season, i.e., from February to June; external fruit colour varied from pink to red, fruit clustering habit solitary and occasionally

in clusters, fruit shape oblate to spheroid, fruit surface smooth, fruit apex shape blunt to pointed, fruit length 22.51- 42.80 mm, fruit diameter 28.12 – 50.21 mm, fruit weight 9.21 – 59.33 g, rind thickness 1.12 – 5.16 mm, number of seeds per fruit 2 – 8, pulp attachment to fruit rind loose to tight, internal rind and pulp colour white to dark red. The variation in the strands attached to inner rind and / or the pulp was also studied.

Evaluation of Aonla varieties

(S Priya Devi)

During August 2008, an evaluation trial on Indian Gooseberry (Amla) was laid out in the institute farm, with five varieties namely, Krishna, Kanchan, Chakaiya, NA-7 and NA-10. The grafts started yielding from 2012 and currently nine-years-old grafts of variety Krishna produce an average yield of 147 kg in March-April and 70 kg during October, therefore producing 217 kg/tree/year. The results indicate that Indian Gooseberry variety Krishna is highly suitable for commercial cultivation under Goa climatic conditions.



Design, construction and evaluation of artificial fish habitats for fish communities

(Sreekanth GB and Manju Lekshmi N)

To rejuvenate and replenish the fish communities in Zuari, Artificial Fish Habitats (AFHs) made of RCC were deployed at three sites (3m, 6m, 9 m) in Zuari estuary. Using underwater visual census (UVC), a total of 50 species were counted on the AFHs and species diversity and abundance were higher at deeper AFHs. Moreover, the density of trophic guilds like mobile invertebrate feeders and carnivores were highest in deeper AFHs. The attachment of various communities like oysters, sponges and ascidia was highest on the deeper AFHs. The

favourable habitat characteristics in terms of vertical relief, upper column free of obstacles and deeper shelter habitats must have attracted the communities towards deeper AFH. There was 30-40% improvement in income by fishing near to AFH sites than fishing from non-AFH sites. The net profit from a single fishing operation was estimated to be Rs. 353 in Non-AFH sites compared to Rs. 496 in AFH sites. This is on account of the catch of economically important species aggregated on the AFHs (snappers, groupers, cuttlefish, and squids).



NEW INITIATIVES

Enhancing the utilization of pseudo stem and leaves of banana (Arunachalam V, AR Desai and MJ Gupta)

Production of banana in coastal districts contributes 15-20% of national production. The fruit production in banana is threatened by biotic and abiotic stress factors. A minimum of 5,000 leaves and 2,500 pseudo-stems can be obtained from a banana garden of one hectare land every year. Pseudo-stem with excellent water holding properties and nutrient contents despite huge commercial potential usually left underutilized. Hence the current project was initiated to enhance the utilization of the two parts of banana plant. The proposal indents to evaluate varietal differences for leaf and stem traits, screen segregating *Musa balbisiana* (BB) progenies to identify superior genotype with leaf and stem production ability. The study also indents to evaluate the economic feasibility of using the stem pieces as horticultural container/nursery substrate and production of oyster mushrooms using the residues alone or in combination with other substrates. The

research program also intends to study the biochemical, mechanical and physical properties of the pseudostem and develop mechanisation of the utilization pattern.



MAJOR EVENTS

Felicitation Ceremony for Awardees of Plant Genome Saviour Farmers Award

The Institute organized a felicitation of the recipients of 'Plant Genome Saviour Farmers Award' on 10th January, 2017. Dr. NP Singh, Director, ICAR-NIASM, Baramati was the Chief Guest of the event. Dr. EB Chakurkar, Director of the institute welcomed the guests and participants. The awardees Shri. Ratnakar Velip, President of Khola/Canacona Chilli cultivators Group along with the representative Group members and Shri Prabhakar Keny, a progressive farmer from Cuncolim, South Goa were felicitated by the hands of the Chief Guest for receiving the prestigious 'Plant Genome Saviour Community Award, 2013-14' and 'Plant Genome Saviour Farmers Recognition Award, 2014' respectively. In his address, Dr. NP Singh urged the farmers to further work towards developing strong marketing channels for better economic benefit. Apart from this, recipients of Indian Science Congress Young Scientist Award-2017,

Dr. Sreekanth G.B. and Dr. Bappa Das, Scientists of the institute were also honoured during the event. Dr. Gokuldas, PP Co-ordinator, IPR cell proposed formal vote of thanks.



National Symposium on Climate Smart Agriculture for Nematode Management

National Symposium on Climate Smart Agriculture for Nematode Management was conducted at the institute from 11th to 13th January, 2017. The Symposium was organized by Nematological Society of India (NSI), New Delhi in collaboration with ICAR- Central Coastal Agricultural Research Institute (CCARI), Goa and Indian Council of Agricultural Research (IARI), New Delhi. Dr HS Gaur, Former Joint Director of IARI was the Chief Guest and, Old Goa was Guest of Honour. Dr. NP Singh, Director, ICAR-NIASM, Baramati, Dr HS Gaur, Former Joint Director ICAR-IARI, Dr. Akhtar Haseeb, Vice Chancellor, NDUAT, FAIZABAD and Dr. E.B.Chakurkar, Director (Acting), ICAR-CCARI were the dignitaries present in the symposium. Dr. Pankaj, Principal Scientist and Secretary, NSI and National Organizing Secretary of the symposium detailed about the genesis of the symposium. More than 100 participants from all over

the country are participating in the national symposium and presentations are planned under lead lecture, oral as well as poster presentations during the symposium.



Hands on training on Aquarium fabrication

Hands on training on Aquarium fabrication was conducted in Fisheries section of ICAR-CCARI in collaboration with State fisheries department, Panjim during 18/01/17 to 20/01/17. Mrs. Manju Lekshmi.N, scientist, FRM, delivered lectures on Freshwater aquarium fabrication and management and scope of ornamental fisheries in Goa. Students from Dhempe and Carmel college were participated for the three day training programme. Mr. Sreekanth GB and Mrs. Manju Lekshmi N were the co-ordinators of the training programme.



Meeting of State Variety Release Committee

A meeting was held by State Seed sub committee for Agriculture and Horticulture crops for the state of Goa at Directorate of Agriculture, Krishi Bhavan, Tonca, Cananzalem on 23rd January, 2016. The purpose of meeting was to discuss the release of three cashew varieties (namely Goa Cashew 2, 3 and 4) submitted by Dr A R Desai, Senior Scientist (Horticulture) and two rice varieties (Goa Dhan -1 and 2) submitted by Dr Manohara K, Scientist (Genetics and Plant breeding). The meeting was chaired by Secretary, Dept of Agriculture in the presence of Dr E B Chakurkar, Director (Acting), ICAR-CCARI, Old Goa, Shri. Ulhas Pai Kakode, Director of Agriculture, Goa, Officials from National Seed Corporation Ltd, Bengaluru and scientists from ICAR-CCARI, Goa. Dr AR Desai and Dr Manohara KK presented

the details of cashew and rice varieties to be released in the meeting. Dr Shivasharanappa N, Scientist and PME cell Coordinator recorded the proceedings to facilitate the meeting.



Republic Day celebration at ICAR-CCARI, Old Goa

The institute celebrated 68th Republic day on 26th January, 2017. Dr EB Chakurkar, Director hoisted the flag and addressed the scientists, administrative and supportive staff. In his republic day address, the Director appreciated the scientists for achieving the release of cashew and rice varieties to Goa, winners of Young Scientist Award during the 104th Indian Science Congress and emphasized strong cooperation of administrative and scientists to work on future challenges of coastal agriculture.



Visit of Shri RP Singh, Hon'ble Member, Governing Body, ICAR New Delhi

Shri RP Singh, Hon'ble Member, Governing Body, ICAR New Delhi visited the Institute and KVK on 2nd February, 2017. Dr EB Chakurkar, Director of the institute coordinated the field visit and explained all ongoing Research activities in field, in lab and the Extension activities carried out by the KVK. During his interaction with the Scientists and other staff members of the institute and KVK, Shri R P Singh appreciated the efforts of the Scientists and staff and discussed the need of Lab to Land programme for farmers.



One day stakeholder's meet on Prospective human resource development strategies in Agriculture, Veterinary and Fisheries

A one day stakeholder's meet on "Prospective human resource development strategies in Agriculture, Veterinary and Fisheries sectors in Goa and Puducherry" was conducted at ICAR-CCARI on 11th February, 2017. Dr. B Ramesh Kumar, Dean of Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry inaugurated the function. The meeting was attended by dignitaries from Agriculture, Fisheries and Veterinary departments from both Goa and Puducherry. The training covered lectures on current status and future prospects of Agricultural Education in both the states. Further discussions were carried out for the future prospects of trained human resource in the allied sectors. The training programme was co-ordinated by Dr.

RS Rajkumar (PI) and was chaired by Dr. EB Chakurkar, Director, ICAR-CCARI, Goa.



AASTHA - 2017

National Symposium on Advances in Agriculture through sustainable technologies and holistic approaches (AASTHA) - 2017 was inaugurated on 15th February, 2016 at The International Centre, Goa. The Symposium was organised by Society for Advancement of Human and Nature (SADHNA), Solan, HP and ICAR-Central Coastal Agricultural Research Institute, Ela, Old Goa. Dr. Rakesh Gupta, the organising secretary of the symposium briefed about the activities of the association and welcomed all the delegates to the programme. Shri. Ulhas P Kakode was the chief guest for the inaugural session of the symposium. Dr. M. Thangam, Principal Scientist, ICAR-CCARI addressed the gathering and ensured all support and co-operation for the symposium.



Training workshop on “Ornamental Fish Culture”

A one day training workshop on “Ornamental Fish Culture” was conducted at ICAR-CCARI in collaboration with The Energy and Resources Institute, Goa supported by Toyota Foundation on 17th February, 2017. A total of 20 participants from Maula, Bati, Goa were present in the training programme. The training covered lectures on ornamental fish culture, aquarium fabrication and indigenous ornamental fish species of Goa. Further, there were hands on training on aquarium fabrication and field visits to ornamental fish hatchery facility at ICAR-CCARI. The training programme was co-ordinated by Mrs. Manju Lekshmi N, Scientist (FRM) and Mr. Sreekanth GB, Scientist (FRM) of Fisheries Section, ICAR-CCARI.



Institute release new Cashew and Rice varieties for the state of Goa

The State Seed Sub-committee vide letter No.3/4/Agron/PPG/3-335/2016-17 D. Agri/854 dtd 13/02/2017, has approved the release of three cashew and two rice varieties for cultivation in the state of Goa. The meeting was held on 23rd January 2017 at the Directorate of Agriculture, Tonca, Goa, under the chairmanship of Shri. BR Singh. (Secretary, Agriculture, Govt. of Goa). Shri. Ulhas Pai Kakode (Director, Directorate of Agriculture, Govt. of Goa), Dr. EB Chakurkar (Director, ICAR-CCARI, Goa), officials from National Seed Corporation, Bengaluru, farmer representatives and other senior officials of the Dept of Agriculture, Govt of Goa, were present in the meeting. Dr. EB Chakurkar gave an appraisal on the superior traits of the varieties and their potential for increasing the production and productivity in the state and the region as a whole. Dr. AR Desai (Sr. Scientist) presented a detailed report about the new varieties of Cashew (Goa Cashew 2, Goa Cashew 3 and Goa Cashew 4). The cashew selections were short listed from the promising local germplasm evaluation trials carried out for 14 years. The above selections were found promising for higher nut yield and kernel quality traits.

Dr. Manohara, KK (Scientist, Plant Breeding) presented about the new varieties of rice (Goa Dhan 1 and Goa Dhan 2) which were developed for coastal saline soils. Both Goa Dhan 1 and Goa Dhan 2 are pure-line selections from the local salt tolerant traditional landrace Korgut. The selections are superior in terms of grain yield as well as for agronomic characters. In consideration of the data presented and further discussions, the State Seed Sub-committee agreed for release of cashew and rice varieties in the State of Goa.



Training Programme on Artificial Insemination in Pigs for Veterinary Professionals

A 3 days training program for veterinary professionals on “Artificial Insemination in Pigs” was conducted from 4th to 6th March, 2017 at the institute. This was a part of DBT Project -Augmentation of rural pig production for socio-economic upliftment of poor through Artificial Insemination. A total of 18 participants i.e 13 PG Phd students from Bidar Veterinary College, Maharashtra along with the Head of Animal Reproduction, Professors from Shirwal Veterinary College, Pune, Pookode Veterinary College, Kerala and Trichur Veterinary College, Kerala attended this training program. Dr. Gokuldas PP, Scientist (Animal Reproduction) was the course co-ordinator. Dr. EB Chakurkar, Director conducted the training along with Dr. Gokuldas PP, Dr. Chetan Kumar, Scientist (VPH) and Dr. Shivasharanappa N, Scientist (Veterinary pathology). They were given hands on experience in doing AI. Demonstration on

semen collection from boar and its processing was also undertaken in the training programme.



International Women’s Day Celebrated

The institute celebrated International Women’s Day on 10th March 2017. The institute has got an Internal Complaints Committee for Prevention of sexual harassment at Work Place, comprising of Dr. (Mrs.) S Priya Devi, as Chairperson, Mrs. Lizette Noronha (Member Secretary), and members Mrs. Manjulekshmi N, Scientist (FRM), Mrs. Rita D Silva, AAO (Estt), Mrs. Pranjali Wadekar (Technical Officer) and an external member Mrs. Sandra Fernandes, Green growth Institute, Sangolda. The programme was organised by the committee. The programme comprised of a meeting and a recipe competition exclusively on pulses. The dishes were evaluated by a panel of judges, Mrs. Suchita Chakurkar, Home maker, Old Goa, Dr. Mathala Juliet Gupta, Scientist (AS&PE) and Mrs. Sunetra Talaulikar, SMS (Home Science), KVK, North Goa. Ms. Caroline Colaco, Advocate, Panjim, who works for the cause of women’s rights deliberated upon the rights of women and on the domestic violence and sexual harassment at work place. She quoted various examples from the cases those she has dealt with in her professional career. Then,

Ms. Sandra Fernandes, Green growth Institute, Sangolda spoke about the attitude a woman should have to love, admire and respect herself. Last but not the least, Ms. Neeru Goel, Freelance physiotherapist, interacted in detail with the staff about health score, that we can give ourselves, the factors that influence our health etc. She talked about the balance in nature, the gender realisation, the human health, health care etc



ICAR- CCARI Participated in Krishi Unnatti Mela 2017 at ICAR-IARI New Delhi

Krishi Unnatti Mela 2017, was organized by ICAR at IARI Campus, New Delhi from 15th to 17th March, 2017. In all, 139 various ICAR Institutes along with KVK's and Agricultural Universities and around 50 Private Companies participated in the event which was inaugurated by Hon. Union Minister for Agriculture, Shri. Radha Mohan Singh. ICAR-CCARI displayed the various exhibits of the Institute along with the posters. The Director of the institute, Dr. EB Chakurkar was also present during the event. Farmers across the country visited the ICAR-CCARI stall. The various exhibits were explained by the officers to the visitors. Approximately 1500 farmers visited the stall during the 3 days. The visitors sought the information on newly released varieties of Rice and Cashew. The value added products

such as Cashew apple crunch, Nutmeg taffy, Nutmeg mouth freshener, Cashew apple syrup and Nutmeg pericarp syrup, By-pass fat, Karad grass block attracted the visitors. Some of the important publications of the Institute were also displayed.



IARI Inovative Farmer Awardee 2017

Shri Babu Narhari Komarpant, a progressive farmer resident of Devbag Palolem Cancona South Goa received the prestigious IARI Inovative Farmer Award 2017 at the hands of Shri Paroshottam Rupala- Central Union Minister of State for Agriculture, Farmers Welfare and Panchayat Raj, Government of India. His name was nominated from ICAR-CCARI, Goa



Training programme on 'Intensive Fruit Cultivation'

A training programme on 'Intensive Fruit Cultivation' was conducted by Dr. (Mrs.) S Priya Devi, Sr. Scientist (Horticulture- Fruit Science) from 20th to 22nd March, 2017 at the institute under RKVY funded project, "Demonstration of PFT in banana, pineapple and papaya in farmers' fields of Goa". The programme was attended by Agricultural officers including ZAOs, AOs, AAOs and Field officers from Zonal Agricultural offices and farmers of different talukas to a tune of 37, out of which, ten were farmers. This training programme covered aspects on soil health, planting material, high density planting, farming system models, fertigation, physiological disorders, important pests and diseases and their management and value addition all pertinent to

important fruit crops of Goa. The programme comprised of lectures delivered by expertise from ICAR-CCARI and also field visits to different experimental plots of fruit crops.



Goa State Coordination Committee (SCC) meeting on Doubling of Farmers' Income

Dr. EB Chakurkar, Director of the institute and Chairman of the Committee briefed the objectives of the SCC meeting and emphasized to focus on major field and horticulture crops, dairy and fisheries sectors, value addition/post harvest management, integrated farming systems, agri- entrepreneurship and region specific technologies needs considered for doubling the farmer's income in the state of Goa. He also hoped the committee would formulate actionable strategic plan which can be monitored effectively by March, 2022 as desired by the Council. Dr. DV Srinivas Reddy, Prin. Scientist representing ICAR-ATARI, Bengaluru as convener made a brief presentation on scope, action plan and potential agriculture technologies required for Goa state to double the farmer's income. Progressive farmers who attended the meeting expressed major problems like wild animal menace, minimum support price and linking kisan card with all the schemes of development departments to get

support to continue in agriculture for their livelihood. About 30 participants including Directors of Directorate of Agriculture, Animal Husbandry & Veterinary Services and Directorate of Fisheries, Govt. of Goa, representatives from NABARD, Horticulture Corporation, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli (MH), ICAR-CMFRI- Karwar centre, progressive farmers from Goa and scientists of ICAR-CCARI attended the meeting and contributed to prepare detailed strategic plan.



ICAR – CCARI celebrated foundation day

The institute celebrated Foundation Day on 1st April 2017. Dr. VN Sharda, Member, ASRB, New Delhi was the chief guest for the function. He visited all the experimental units and appreciated the work being undertaken. Further, an exhibition was organized to showcase the significant technologies developed and research work carried out by the Institute. Dr. EB Chakurkar, Director, welcomed the chief guest and participants and gave a brief presentation about the Institute, its activities and output. Shri Ulhas Pai Kakode, Director, Department of Agriculture was also present during the celebration. Among the participants, Krishi Unnati IARI Innovative farmer winner – Sh. Babu N. Komarapanth, Shri Kamlakant Tari, Gomantak Gausevak Mahasangh, Sikeri, Mayem, Shri Purohit, Dwarkapuri Goseva Ashram, Usgao, Shri Hanumant Parab and Shri Laxman Joshi, Jaisriram Gosavardan Kendra (Valpoi) and Mrs. Shilkar, Dhyan foundation Gaushala (Quepem) were also felicitated. On the occasion, the staff of the Institute were also awarded with various annual awards. One each of technical bulletin - Weather trends of last fourteen years (2002-2014) at ICAR CCARI, Old Goa, a book – A handbook on coastal fisheries resources of Goa, an extension folder – importance of green fodder in dairy cattle released by Dr. VN Sharda. He emphasized on development of the baseline information so as to plan sustainable

agricultural development in the coastal region of India. He explained that the exploitation of resources over the period of time is also a major factor to reduction in the agricultural production and conservation of the resource can in turn augment it. Diversification of the existing agricultural systems with possible enterprises (integrated farming system) can play a significant role in sustainable agricultural development. He urged on need to conserve the indigenous crop and animal resources. Further, he guided to staff on how the Institute needs to proceed to fulfil the broaden mandates to work on entire coastal region of India.



Visit of Shri. Govind Gaude , Hon. Minister for Tribal Welfare, Govt. of Goa

Shri. Govind Gaude , Hon. Minister for Tribal Welfare, Govt. of Goa visited the institute on 21st April, 2017. Dr. EB Chakurkar, Director briefed the ongoing various research activities. Shri. Govind Gaude has appealed the farmers including tribal farmers to avail the maximum benefits offered by the institute. He congratulated the director and team for taking up research which will help the farmers to grow financially strong.



Inauguration of Feed Block Unit and laying foundation stone for the Poultry houses

Dr. Pramod Sawant, Hon. Speaker of Legislative Assembly, Govt. of Goa laid the foundation stone for the Poultry houses on 1st May, 2017 and inaugurated the Feed Block Unit funded under RKVY in the presence of Dr. RN Chatterjee, Director, ICAR-DPR, Hyderabad. On the occasion Hon. speaker emphasized strongly on increasing awareness about the research and development activities of the institute for greater benefits to the farming community. Dr. RN Chatterjee, elaborated the importance of the poultry sector and different activities of the ICAR-DPR. "Poultry Seed Project" (PSP) funded by ICAR runs at the institute during the XII five-year plan with a budgetary allocation of Rs. 203.57 Lakhs. The main objective of the project is to augment egg and meat production in the state of Goa through rural backyard poultry production covering 5,000-15,000 farm families per annum and linking

small scale poultry producers with organized market. To progress this project in the state of Goa, civil works comprising of a Poultry Brooder cum Grower House (2200 Sq. feet area) and a Poultry Parent house (3000 Sq. feet area) has also been sanctioned..



Annual Review Workshop of KVKs under Agricultural Technology Application Research Institute (ATARI), Bengaluru, 2017

Annual Review Workshop of KVKs under ICAR-ATARI, Bengaluru was inaugurated by Shri. Vijay Sardesai, Hon. Minister of Agriculture, Govt. of Goa, on 04th May, 2017. He stressed on doubling the income of farmers by 2022 through strategic approaches. Dr. EB Chakurkar, Director, of the institute, in his welcome address briefed the activities of Institute and KVK for the benefit of the farmers. Dr. MJ Chandre Gowda, Prin. Scientist, ATARI, Bengaluru, in his opening remarks highlighted the role of KVKs in transferring the modern technologies in an effective manner. Dr. Lakhan Singh, Director, ATARI, Pune, spoke on extension methodologies and its importance in the transfer of new agriculture technologies. Mr. HRC Prabhu, Programme Coordinator Incharge, KVK – North

Goa proposed vote of thanks. In workshop work done by KVKs during 2016-17 was presented. 80 KVKs from Karnataka, Tamil Nadu, Kerala, Puducherry, Goa and Lakshdeep participated in the event.



Participation in National Celebration of International Day for Biological Diversity at Kala Academy, Panaji-Goa

The exhibition was organized from 22nd to 23rd May, 2017 at Kala Academy, Panaji-Goa as part of Celebration of International Day for Biological diversity 2017. The event was inaugurated by Hon. Chief Minister of Goa Shri. Manohar Parrikar. Institute displayed a stall and technical officers from the institute, Shri. Rahul M Kulkarni and Shri. Siddharth Marathe explained the various exhibits of the Institute along with the posters. Approximately 1000 farmers across the state visited the stall. The visitors sought the information on newly released varieties of Rice and Cashew and also gathered the information about the Biodiversity amongst Mango, Kokam, Cashew and Jackfruit. The value added products such as Cashew apple crunch, Nutmeg taffy, Nutmeg

mouth freshner, Cashew apple syrup and Nutmeg pericarp syrup attracted the visitors.



Inauguration of new low cost commercial goat unit

A new goat unit with the capacity of 100 animals was inaugurated on 17th June, 2017 by Shri. BR Singh, Secretary, Dept. of Agriculture, Govt of Goa at the Institute. He appreciated the unit and emphasized to formulate of scheme on goat farming for the benefit of farmers of the state. Dr EB Chakurkar, Director explained the importance of goat farming as a commercial enterprise. The goat unit is constructed in raised platform with wooden flooring and suitable for hot humid and rainy conditions of Goa. Presently, the institute is maintaining 80 goats of Konkan kanyal breed which is for meat purpose and reared under stall feeding. Elite breeding males and females have been supplied to for farmers for startup. Scientists and technical staff the institute, Dr. Greta. Costa, Asst. Director, Dept of Animal

Husbandry and Veterinary Services are present during the inauguration.



International Day of Yoga Celebrated at ICAR-CCARI

Institute celebrated International Day of Yoga on 21st June, 2017. Shri Shailendra Gupta addressed the gathering and gave a speech on Yoga and its health benefits. In his speech he explained the importance of yoga, benefits of different asanas, how the different asanas have to be performed and science behind each asanas. The function was attended by Scientists, Technical staff, Administration staff, Skilled Support staff, staff of Krishi Vigyan Kendra and RA, SRF, JRF, Project Assistants and Contractual Staff of the institute.



Training programme for Veterinary Faculty from Karnataka

A 3 days training programme on “Molecular techniques in Animal Health and production” was organized at the institute from 28th to 30th June, 2017 for the faculty of Veterinary College, Hassan and Shivmoga (KVAFSU, Bidar, Karnataka). The programme was inaugurated by Dr Ashwani Kumar, Deputy Director of National Malaria Research Institute, Goa Centre and spoke about importance of collaborative research and education in the field of medical and veterinary institutes. Dr EB Chakurkar, Director of the institute explained about the importance of training programme on molecular techniques for teaching and research. Dr Shivasharanappa N, Scientist and Course Coordinator briefed about the techniques and facilities of molecular biology at the institute. A total of 24 participants from

Veterinary University and scientists of the institute were present in the inaugural session.



Visit of Dr. SK Singh, Project Director, DKMA, ICAR

Dr. SK Singh, Project Director, DKMA, ICAR and Mr. SK Joshi, Business Manager & In charge CeRA visited the institute on 30th June, 2017. Dr. M Thangam, Prin. Scientist welcomed the gathering. The main agenda points of the discussion were regarding the connectivity of CeRA, usage of CeRA in CCARI, other accessibility issue of CeRA and additional journal/ e resources required at CCARI through CeRA. Dr. SK Singh made a concise presentation on the achievements and targets of DKMA, ICAR. Mr. SK Joshi briefed about the usage of CeRA at CCARI- Goa followed by the discussions on DKMA activities and opportunities.



Twenty eighth Institute Research Council (IRC) meeting

The twenty eighth (28th) Institute Research Council (IRC) meeting of the Institute, was held from 10th to 12th July, 2017. The meeting was chaired by Dr. EB Chakurkar, Director. He welcomed all the scientists, members of IRC and highlighted significant points to be included and worked out during the present IRC meeting. Dr. GR Mahajan, Secretary, IRC presented present status of the research projects and preliminary discussion done during different meetings regarding development of mega projects. During the inaugural session of the IRC, designing of the mega project and

different project(s) under it, agro-ecotourism, post-harvest processing and value addition was discussed in detail. The scientists from different sections made their deliberations as per the inclusion of the project in the mega project. The action(s) taken on recommendations of last IRC meeting and research activities carried out during the last one year was presented and discussed thoroughly. The Chairman, IRC appreciated the research accomplishments of the scientists. During plenary session of the rapporteurs presented their report and important decision were taken.



Memorandum of Understanding

A Memorandum of Understanding (MoU) was signed between the institute and R. P. Gogate College of Arts and Science and R. V. Joglekar College of Commerce, Ratnagiri, Maharashtra on 2nd August, 2017 for collaboration in the areas of education, training and research. Dr. EB Chakurkar, Director and Dr. KV Sukhtankar, Principal, R. P. Gogate College of Arts and Science and R. V. Joglekar College of Commerce, Ratnagiri signed the MoU in presence of Dr. Shivasharanappa N, Scientist and Coordinator, PME Cell and Dr. MG Gore, Associate Professor, Gogate College of Arts and Science.



Memorandum of Understanding

A Memorandum of Understanding (MoU) was signed between the institute and Nirmal Vishwa (Goa), Ponda, Goa an environmental NGO on 2nd August, 2017 for collaboration in the areas of technical guidance, training and demonstration. Dr. EB Chakurkar, Director, ICAR-CCARI, Shri. PV Kamat, Secretary, Nirmal Vishwa (Goa) signed the Memorandum in presence of Dr. Shivasharanappa N, Scientist and Coordinator, PME Cell and Shri. PK Ghate, Member, Nirmal Vishwa (Goa along with Shri K. D. Sadhle and Shri. Sachin Tendulkar.



Independence day celebrations

Institute celebrated the 71st Independence Day on 15th August, 2017. Dr. EB Chakurkar, Director of the Institute hoisted the flag in presence of all the staff members and their families. On the occasion, he extended warm greetings to all the employees and others who attended the programme. During his address, Director stressed on the working culture in the organization, and urged all the employees to strive hard to take the Institute to new heights in the field of research and extension. He also briefed about the achievements of the Institute and congratulated everyone for it. There was also prize distribution for the winners of the 1st Annual Games of ICAR-CCARI, Goa.



Production of Virgin Coconut Oil and Other Value Added Products

Virgin Coconut Oil project was approved under RKVY assistance in 2015 and the unit is full fledged with all machineries like Testa Remover, Pulveriser, Milk Expeller, Electric Dryer, VCO Cooker. Three days Entrepreneurship Development Programme was organized on “Production of Virgin Coconut Oil and Other Value Added Products” at Krishi Vigyan Kendra –North Goa, Ela, Old Goa from 17th to 19th August, 2017 in collaboration with ICAR-CPCRI, Kasargod. Dr. EB Chakurkar, Director, ICAR-CCARI, Dr. AR Desai, Sr. Scientist (Horticulture), Dr. S PriyaDevi, Sr. Scientist (Horticulture) and Mr. HRC Prabhu, Programme Coordinator I/C, KVK, interacted with participants and shared views and experience. Value added product like coconut sugar, coconut chutney and coconut Chocolate was demonstrated to the participants. About 25 participants from different

village attended the programme and was coordinated by Mrs. Sunetra Talaulikar, SMS (Home Science).



National Honeybee Day Celebration

Institute celebrated “National Honeybee Day” on 19th August 2017. It is celebrated to create awareness on beekeeping and to bring together individual beekeepers and beekeeping associations for interactive session to discuss their experiences with fresh beekeepers. Mr. Chinmay Tanshikar, Progressive farmer, Netravali, shared his experience on beekeeping in reference to Goa among the participants. Dr. EB Chakurkar, Director, stressed the role of KVK and cooperatives in spreading the beekeeping. He felicitated Mr. Naadakumar Raikar, Beekeepers cooperative society, Ankola, Karnataka, Mr. Shalio, Beekeeping expert, Porvorim and Mr. Rudolf Fernandes, Farmers and Beekeepers Association of Goa, for their support in taking the technology of beekeeping to Goan farmers. Mr. HRC Prabhu, Programme Coordinator I/C, KVK in his welcome address, explained the beekeeping activities in KVK and its method of transfer to farmers. During the technical sessions, Mr.

Shalio spoke on all aspects like type of bees, handling and management of bee colonies. Dr. Sanjaykumar Udharwar, SMS(Animal Science) proposed the vote of thanks. About 70 participants attended the programme and carried the message of beekeeping.



IPR CELL ACTIVITIES

- Complete specification for the patent entitled “Extender for preservation of boar semen” with Serial No. 3037/ MUM/2015) was published, on 17th February, 2017.
- Complete specification for the patent application for technology entitled “Process for preparing cashew apple crunch and resultant food product thereof” with application serial No. 201621012413 was submitted to the Indian Patent office on 7th April, 2017.
- Complete specification for the patent application for technology entitled “Process for preparing nutmeg taffy and resultant food product thereof” with application serial No. 201621012414 was submitted to the Indian Patent office on 10th April 2017.
- Commercialization of the technologies from this Institute viz. NBSE Boar Semen Extender, Cashew Apple Crunch and Nutmeg Taffy was initiated in consultation with Agri-innovate India Pvt. Ltd. New Delhi. In this regard, a meeting with officials of Agri-innovate India Pvt. Ltd was held on 14th February, 2017 at New Delhi.
- A felicitation ceremony for ‘Khola/ Canacona Chilli cultivator’s Group, from Khola Canacona Goa and Shri Prabhakar Keny was organized at this Institute on 10th January, 2017. Dr. Narendra Pratap Singh, Director, ICAR-NIASM, Baramati was the Chief Guest of the event. The awardees 1. Shri. Ratnakar Velip, President of Khola/Canacona Chilli cultivators Group along with the representative Group members and 2. Shri Prabhakar Keny, a progressive farmer from Cuncolim, South Goa were felicitated by the hands of the Chief Guest for receiving the prestigious ‘Plant Genome Saviour Community Award, 2013-14’ and ‘Plant Genome Saviour Farmers Recognition Award, 2014’ respectively.
- Geographical Indication (GI) core group meeting was held at this Institute on 4th March, 2017 to discuss and prepare a Plan of Action, for identifying probable items and to initiate suitable procedure for its registration for GI certification.
- Application for registration of “Khola Chilli” as farmers’ variety was compiled and submitted to the PPV&FR Authority, New Delhi during 3rd March, 2017.
- A Material Transfer Agreement (MTA) was signed between ICAR-Central Coastal Agricultural Research Institute, Goa and Birla Institute of Technology and science, Pilani Zuarinagar Goa on 30th August, 2017 for procurement of Microbial cultures/strains of *Ralstonia solanacearum*, *Escherichia coli*, etc. for multilocation demonstration for evaluation of variety/Hybrid/inclusion in research activity.



WORKSHOP/ SEMINAR/SYMPOSIA/ TRAINING ATTENDED

Date	Name of Scientist	Programme	Venue
3 rd to 7 th January, 2017	Sreekanth GB, Bappa Das	104 th Indian Science Congress	SV University, Tirupathi, Andhra Pradesh
18 th January, 2017	Manohara KK	Review meeting of half yearly progress of foreign aided project	Krishi Anusandhan Bhavan, New Delhi
24 th January, 2017	R Ramesh	Workshop of nodal officers of ICAR on Krishi Portal and Research data repository	NASC complex, New Delhi
15 th to 17 th February, 2017	Arunachalam V, Maruthadurai R, Safeena SA, Shivasaranappa N, Gokuldas PP and Manju Lekshmi N	National symposium on advances in agriculture through sustainable technologies and holistic approaches	The International Centre, Dona Paula, Goa
16 th to 18 th February, 2017	MJ Gupta	ISAE 51 st Convention and symposium on agricultural Engineering for sustainable and climate smart agriculture	College of Agricultural Engineering and Technology, CCSHAU, Hisar, Haryana
22 nd February, 2017	Arunachalam V	Tutorial session on parallel computing Garuda-NKN	NIAS, Bengaluru, Karnataka
24 th February, 2017	S Priya Devi	National Workshop on Packaging of Fresh and Processed Food Products	
15 th to 17 th March, 2017	EB Chakurkar, Paramesha V, Rahul Kulkarni	Krishi Unnati Mela 2017	ICAR-IARI, New Delhi
20 th to 21 st May, 2017	S Priya Devi	National Conference on Horticultural Crops of Humid Tropics-Diversification for Sustainability	
8 th July, 2017	Arunachalam V	Vigilance review meeting (western zone)	ICAR-CIFE, Mumbai, Maharashtra
20 th to 21 st July, 2017	Arunachalam V	Agrigenomics 2017 conference	Hyatt Regency, Chandigarh
20 th to 21 st July, 2017	Arunachalam V	Agrigenomics 2017 conference	Hyatt Regency,



PERSONALIA

Awards and Recognitions:



Dr. V Arunachalam

Certificate of appreciation (Bronze category) from Central Board of Direct taxes Ministry of Finance for contributing to tax and filing of returns for assessment year 2016-17.



Dr. Bappa Das

Young Scientist Award in the section of "Agriculture and forestry science" during the 104th Indian Science Congress at Sri Venkateswara University, Tirupathi, Andhra Pradesh during 3rd to 7th January, 2017



Dr. Sreekanth GB

Young Scientist Award in the section of "Animal, Veterinary and Fisheries sciences" during the 104th Indian Science Congress at Sri Venkateswara University, Tirupathi, Andhra Pradesh during 3rd to 7th January, 2017.

