



# 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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हर कदम, हर डगर  
किसानों का हमसफर  
भारतीय कृषि अनुसंधान परिषद

*Agrisearch with a human touch*

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## Director's Desk



One of the most visible consequences of global warming is an increase in the intensity and frequency of extreme weather events. Studies show that, the number of heat waves, heavy downpours, and cyclones has increased worldwide. The economic impact of such extreme events is huge and warrants intensive field level studies. Cyclone 'Fani' which lasted only for four hours at a speed of 240 km per hour in first week of May, severely affected Odisha. The Director and a multidisciplinary

team of scientists from the Institute visited areas of Puri and Khordha district of Odisha state from 29<sup>th</sup> May to 12<sup>th</sup> June 2019. Windbreaks of casuarina, native vegetation, and perennial crops like coconut, cashew, mango and poultry units were damaged. In collaboration with Department of Animal Husbandary, Odhisha, Animal health camps were conducted attending to 1700 animals for restoring health of livestock and also to advise the farmers about the general animal health and nutrition management. The KVKs of Puri and Khoradha districts, Odisha, facilitated in field visits to affected areas. Thus, the Institute has initiated effective linkage with KVKs of OUAT and CIFA and the line departments of Odisha for addressing similar calamities in future.

Following this disaster, in the first fortnight of August 2019, unprecedented heavy rainfall occurred in western Maharashtra especially Kolhapur and Sangli districts leading to severe flooding and prompting lakh of people to relocate to relief camps. A team of veterinary scientists visited the sites during 19<sup>th</sup> to 21<sup>st</sup> August, assessed the impact of flood on animal husbandry, conducted animal health camps, treated 225 animals, provided necessary medicines and preventive vaccination and also played advisory role in post-flood management of livestock and also.

As the Institute is shouldering responsibilities pertaining to both East and West coast of India, plans are being envisaged to provide technical guidance to the state departments, KVKs and farmers of the coastal districts regarding preparedness to face such natural disasters in future. Sufficient animal feed in the form of feed blocks along with medicines and vaccines need to be stocked in anticipation of such situations. Integrated farming system approaches with varying components, including short duration and quickly remunerative horticultural crops, mushroom etc. need to be promoted to combat the losses.

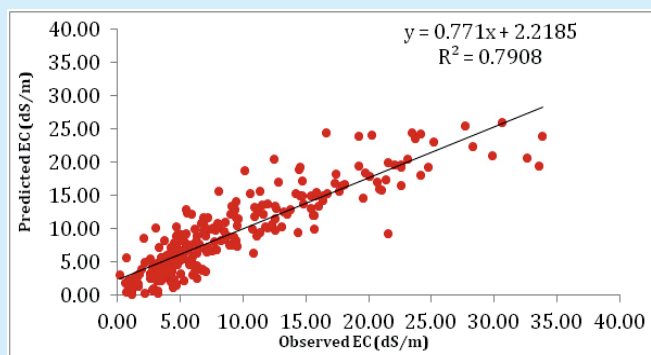
## RESEARCH HIGHLIGHTS

### Can mid-infrared spectroscopy predict salinity of salt-affected soils of the coastal region?

(Gopal R Mahajan)

Assessing levels of salinity of salt-affected soils is very important for its sustainable utilization. Presently, salinity is estimated in soil by chemical and physical laboratory analysis which is often time-consuming and expensive. In this regard, the reflectance spectroscopy is a modern and alternative technique which overcomes the limitations of conventional techniques. The study aims to estimate salinity of the salt-affected soils of the coastal region using mid-infrared (2500-15000 nm) reflectance spectroscopy (MIRS). The spectral reflectance of processed soil samples (2 mm sieved, n=402) was recorded using Fourier Transform Infrared Spectrometer (Shimadzu IRTracer-100). A 10 nm averaged raw (RS10nm) and Savitzky-Golay standard normal variate processed spectral reflectance (SG-SNV10nm) was used for analysis. The data was divided into two sets, one as train data (70% of total) to develop the calibration model and other as test data (30% of total) to evaluate the performance of the calibrated model. We implemented partial least-squares regression (PLSR) and principal component regression (PCR) to construct calibration models, which were independently

validated for soil salinity prediction (electrical conductivity, EC) from the soil spectral data. Prediction accuracy of the model improved when SG-SNV10nm was used compared to RS10nm and PLSR performed better than PCR. A 'very good' prediction accuracy was achieved using PLSR with SGSNV10nm pre-processing ( $R^2=0.79$ ,  $r=0.89$ ,  $RMSE=2.21$  dS/m, ratio of performance to deviation=2.15). Thus, it may be concluded that the mid-infrared spectroscopy data could be employed for monitoring the soil salinity of the salt-affected soils as it is rapid, repeatable, reliable and cost-effective.



Observed versus predicted electrical conductivity (EC)  
SGSNV10nm pre-processing and PLSR

### Tool for discriminating traits for horticultural crop varieties

(V Arunachalam)

Discrimination of plant varieties using morphological traits is important to provide genetic purity by true-to-type plants. A set of many qualitative and quantitative traits are identified in each species suitable as descriptor or DUS (distinct, uniform and stable) trait for characterising and identifying the crop varieties. However, the traits thus shortlisted are not sometimes able to discriminate closely resembling varieties. Hence, a statistically robust way of discriminating varieties based on morphological traits using a combination of tools viz.

- 1) Classify the variation into character states in a qualitative trait
- 2) Classify the variation into class intervals based on mean and standard deviation values of the quantitative trait



3) Identify homogeneity of the trait within a population or variety by working out the normalized Shannon-Weaver diversity index

4) Locate the variations in the mode scores across the set of varieties analysed

5) To check the statistical significance of the binomial distribution of mode class frequency with cumulative frequency of non-mode classes by one tail test

Based on the above calculations, a trait satisfying three conditions listed below is identified as the discriminating trait

1) Significant binomial test of frequencies in mode with non-mode

2) Varying mode scores (2 or more) across the varieties

3) Zero value in normalized Shannon-Weaver diversity index

Currently the method is tested in banana and areca varieties to shortlist the discriminating trait(s) like leaf habit, blotch colour and colour of midrib dorsal surface in banana and petiole: lamina ratio in arecanut.

## Banana variety for leaf industry

( V Arunachalam)

*Musa balbisana* Colla (BB) the wild ancestral diploid type is known for its drought, salinity tolerance traits and for the use in leaf industry. The genotype produces large number of suckers and sturdy leaves and known by different varieties as *Ela vazhai* in Tamil Nadu, *BhimKol*, *AthiaKol* in Northeastern states of India. In Goa, a similar type was identified in the farmer's field (Ms Rupali Padwalkar). The plant was both male and female fertile and bore fruits with several seeds. Seeds were extracted and seedlings were raised and planted along with clonal progenies

raised by suckers. After screening the seedlings for two years for leaves and suckers production traits, few were selected with potential for leaf industry with large number of suckers, large and wide leaves. It was named as Rupa and evaluated for leaf industry including foliar potassium and sodium contents. The seeds of the selected progenies were sent to State Horticulture farm at of Directorate of Horticulture & Plantation Crops, Tamil Nadu for establishment of mother plants for supply to banana leaf growing farmers.

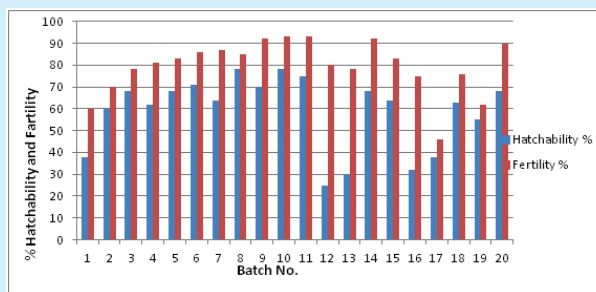
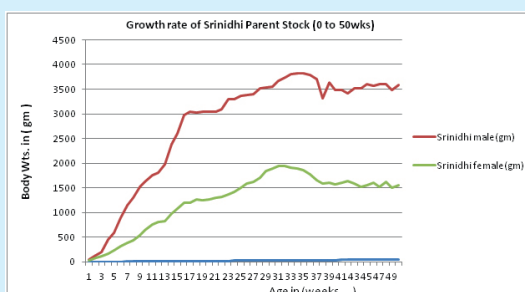


## Performance and adaptability of Srinidhi in hot and humid climate of West Coast region

(Nibedita Nayak)

The performance and adaptability of poultry breed 'Srinidhi' was evaluated under hot and humid climate of West Coast region. The growth rate, hatchability and fertility of the parent Srinidhi stock was studied. At 30 weeks of age, body weight of male Srinidhi ranged from 3.5 - 3.7 kg and female from 2.0-2.2 kg. Highest fertility on

total egg set basis was 90% - 93% and hatchability was 78% - 80%. Based on such promising results, a total of 5073 Srinidhi birds were supplied to 209 farmers of Goa, Karnataka and Maharashtra during April to August, 2019.

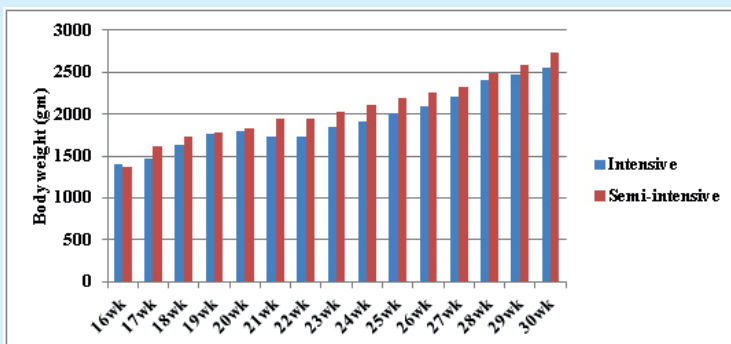


## Performance of backyard variety CARI-Nirbheek in intensive and semi-intensive system of rearing

(Nibedita Nayak and A.R.Desai)

The performance of backyard variety chicken CARI-Nirbheek variety was evaluated. A total of 30 birds (25 Female + 5 Male) each were reared in semi-intensive (coconut based multi-species cropping system) and intensive system of rearing. Feeding system in semi-intensive system was scavenging (include insects, snails, leaves and fallen fruits) with supplementary feed (20 gm of Maize/bird/day) and in intensive rearing only concentrate feed was given as per standard nutrient recommendation. The production

performances of both the systems of rearing were compared and growth rate and egg quality were recorded. The egg quality parameters, namely yolk colour, shape index and shell thickness varied significantly in semi-intensive system than intensive system. The shape index was found higher i.e  $56.29 \pm 0.75$  in intensive system than semi-intensive which was  $54.05 \pm 0.38$  only. There was significant difference in yolk colour ( $8.82 \pm 0.29$ ,  $7.17 \pm 0.43$ ) and shell thickness of ( $0.38 \pm 0.01$ ,  $0.36 \pm 0.01$ ) of semi-intensive system as compared to intensive system.

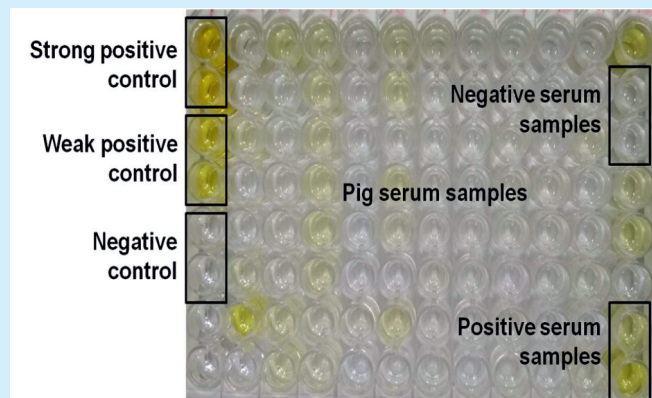


## Seroprevalence of Trichinella infection in the pig population of Goa state

(Chethan Kumar HB)

Trichinellosis is a meat borne zoonotic disease in humans caused by consuming raw or undercooked pork and pork products containing larvae of the nematode *Trichinella*. Although pig farming is popular in Goa state, it is not known whether *Trichinella* infection is prevalent in pigs raised in the state. Hence, a study was designed to identify the sero-prevalence of *Trichinella* infection in pigs. A total of 428 pig sera were collected from pigs from different parts of the Goa state from 2017 to 2019. The samples were screened for the presence of anti-*Trichinella* IgG antibodies using the PrioCHECK® *Trichinella* Ab ELISA kit (Prionics Lelystad, Netherlands). It was found that 22 pig sera were found positive for anti-*Trichinella* antibodies with an overall prevalence of 5.14% (22/428). The study could confirm that *Trichinella* infection exists in pigs of

Goa state and therefore good pig farming practices, post-mortem inspection of pig carcasses, cooking of pork to an internal temperature of 71°C before consumption and consumer awareness are required to prevent the disease in human beings.



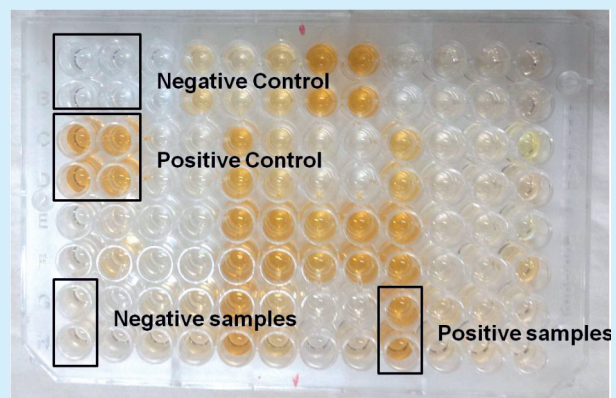
ELISA plate showing field pig serum samples positive and negative for *Trichinella* infection

## Seroprevalence study of Brucellosis in dairy farms in Goa

(Susitha Rajkumar)

Brucellosis is a highly contagious zoonotic infection affecting livestock and human beings. It is responsible for considerable economic losses due to abortion and culling of infected animals. In order to study the prevalence of Brucellosis in Goa a total of 315 cattle sera samples were collected from adult female and calves from small and organized dairy units in Goa state from 2017 to 2019. The serum samples were screened for Brucellosis by Rose Bengal Plate Test (RBPT) and ELISA using Protein-G based ELISA kit (ICAR-NIVEDI) and 10.51% samples were found positive. The study shows the prevalence of Brucellosis in dairy units in Goa. The individual herd prevalence is more

in large dairy units and reproductive problems like abortion, endometritis and infertility were observed in such farms. The results show the need for adoption of preventive measures like purchase of new stock from herds free from *Brucella* infection and female calf vaccination.



ELISA plate showing field samples positive for *Brucella abortus*



## NEW INITIATIVES

### Propagation and nursery facility for horticultural crops (V Arunachalam)

A new shade net structure of 180 square meter area was erected in farm B with the total expenditure of Rs. 0.75 Lakhs only. The shade net house was erected step by step using the required materials such as concrete poles, GI pipes and shade net fabric. First the installation of concrete poles of two heights 10' and 8' by digging pits was taken up. Later, galvanised iron (GI) pipes of two sizes 1.5' and

1.25' diameter were fixed by welding and arranging among the erected poles. Shade net fabric was spread on the top of the structure. This cost effective facility established now is very useful for augmenting the horticultural nursery activities and generating the large number of elite planting materials. The shade net house also serve as a demo model for farmers willing to take up the horticultural nursery activities



## MAJOR EVENTS

### Multi disciplinary team of Institute scientists visited Fani cyclone affected areas of Odisha

The Director and a team of scientists including Dr. A.R. Desai, Dr. Susitha Rajkumar, Dr. Nibedita Nayak, Dr. Chethan Kumar, Dr. G. R. Mahajan, Dr. Sujeet Desai and SMS, Animal Science Dr. Sanjay Udharwar from KVK North Goa visited cyclone 'Fani' affected areas of Puri and Khordha district of Odisha state from 29<sup>th</sup> May to 12<sup>th</sup> June 2019.

The team of scientists from crop science, natural resource management, horticulture and animal science visited about 15 villages to assess the effect of Fani cyclone. It was a sight of complete despair on the faces of farmers which reflected the impact of cyclone Fani in their villages. Coconut plantation devastation was most conspicuous besides damage to cashew plantations, mango trees and banana plantations. The shade net structures, poultry sheds and farm houses in the open field were completely blown off by cyclone which lasted only for four hours at a speed of 240 km per hour.

Veterinary scientists of the institute Dr. Susitha Rajkumar, Dr. Nibedita Nayak, Dr. Chethan Kumar along with subject matter specialist from KVK, Dr. Sanjay Kumar Udharwar held the animal health camps for restoring health of livestock and also advised the farmers about the general animal health and nutrition management. About 10 animal health camps were conducted in six Fani cyclone affected villages of Puri and Khordha districts. During, the camps nearly 1700 animals (cattle, buffalo, sheep, goat, poultry, dogs) were treated for various ailments besides distribution of mineral mixture, dewormers and other feed supplements for the livestock.

Damage to the windbreaks of casuarina, native vegetation and mixed casuarina - native vegetation was conspicuously seen in the sea shore areas. As a part of policy, shelterbelts of the afore-mentioned vegetation were established by the Odisha State Government for protection from

storm and cyclones. The shelterbelts of the field to protect the crop were devastated. Dr. G.R. Mahajan and Dr. Sujeet Desai visited the sites and observed that the casuarina monoculture were affected more compared to the native and mixed native - casuarina vegetation, indicating the need for emphasizing the adoption of the native vegetation and mixed vegetation planting rather than monoculture of the casuarina while restoring damaged and establishing new shelterbelts.

Dr. A.R. Desai, PS (Horticulture) interacted with farmers and provided information and technologies to restore the damaged horticultural crops for stabilizing the economic condition. It was advised to introduce commercially important varieties of mango, cashew and coconut in such sensitive region for crop diversification to mitigate their impact. Integrated farming system approach will greatly facilitate the farmers to overcome losses and stabilize the farm income. With a view to facilitate the farmers with quick returns, seeds of improved varieties of vegetables namely okra, gourds, tomato, chili, *etc.* were also provided to the farmers. Dr. Manohara, K. K., discussed about the prospects of salt-tolerant paddy varieties of the institute for cultivation in the salt affected coastal part of Odisha.

Dr. Sanjay Kumar Mohanty, Sr. Scientist and Head, Dr. Sumita Acharya, SMS (Home Sciences), Dr. Manas Ranjan Behera, SMS (Fishery), Dr. Sunita Rani Sethy, SMS (Agricultural Extension) of KVK, Puri and Dr. B.K. Banja (Farm Manager) and Dr. P. N. Ananth, Programme Coordinator, Mr. A.K. Dash, SMS (Horticulture) of KVK, CIFA, Khordha, facilitated in establishing liaison of scientists with farmers of the affected village during the visit.

Dr. E.B. Chakurkar, Director, ICAR-CCARI, Goa



visited the ICAR - Central Institute of Freshwater Aquaculture, Bhubaneswar and KVK, Khorda and KVK, Puri for organization of the animal health camps. Sharing seed material of new and suitable rice varieties was committed to ICAR – National Rice Research Institute, Cuttack. Similarly collaborative research programmes on coconut and cashew nut were planned with scientists of Odisha University of Agriculture and Technology, Bhubaneswar.

The impact of cyclone Fani on the poultry industry and the mitigation strategies were discussed at Central Avian Research Institute, Bhubaneswar. Thus, ICAR-CCARI Goa made a beginning for an effective linkage between the Institutes, local KVK's (OUAT and CIFA) and the line departments of Odisha for addressing the unforeseen calamities like cyclone Fani in particular and exchange of technologies across coastal areas in general in the years to come for the better cause of the community.





## Value addition training on jackfruit for SCSP beneficiaries

A training was conducted on 22 May, 2019 with 15 participants from Village Shivapur, Maharashtra. The trainees were given hands on training to operate and handle the processing machineries like jackfruit cutting machine, jackfruit chips cutter etc. Other processing machinery like fruit pulper/ crusher, kokum cutting machine, aonla segment cutter, cabinet dryer etc. were also demonstrated to them. The potentialities of jackfruit for processing and value addition were briefed by Dr. S. Priya Devi, PS(Hort.). Dr. Matahal Gupta, Senior Scientist (AS&PE) explained about the minimal processing, maintenance of processing machinery, taking FSSAI licence etc. Participatory demonstrations were conducted for preparation of value added items like jackfruit chips, pickle, halwa, bajjas etc.



## Capacity building programme on “Fisheries resource conservation and management” under Schedule Caste Sub Plan for fishermen from Karnataka

ICAR–Central Coastal Agricultural Research Institute, organized a training cum awareness programme on “Fisheries resource conservation and management” in collaboration with the Post Graduation study centre, Karnataka University, Karwar at Post Graduation study centre, Karwar on 25th May, 2019. Fishing net material, ropes, life jacket floats, floats and sinkers were distributed to 40 traditional (SC) fishermen from Bhatkal, Shirali, Mavinkurve, Heble, Bailuru and Murudeshwar. Shri. Nagaraj P, Deputy Director (Fisheries), Uttara Kannada, the chief guest appreciated the efforts taken in improving the livelihood of fishermen and agricultural farmers. He also briefed about the schemes and developmental activities implemented by the State Department of Fisheries. Dr. Jagannath Rathod, Prof & Chair, PG Study Centre, Karwar, briefed about the research and development activities of the centre. Dr. H.R.C. Prabhu, Programme Co-ordinator (I/C) KVK, North Goa

addressed the fishermen and briefed about the extension and development activities of the KVK. Dr. Mathala Gupta, SCSP&STC Co-ordinator briefed about the welfare programmes of GoI and the official procedures to be followed to avail the same. A technical session cum fishermen interaction was organised by Dr. Sreekanth G.B., Scientist (FRM), ICAR-CCARI and Dr. Shivkumar Haragi, Asst. Prof, PG study centre, KU. An extension leaflet in Kannada on “Conservation of fisheries resources in coastal ecosystems” was also released on the occasion.



## Awareness programme conducted in Mundgod, Karnataka under SCSP

An awareness programme on value addition in jack fruit was conducted on 29-05-2019 in Arisingere village, located in Mundgod Taluka, Utaara Kannada dt, Karnataka, which is predominantly inhabited by SC population. The major plantation crop of the village is Arecanut, intercropped with banana. Seasonal crops like maize, paddy and vegetables are cultivated by all the villagers. There were jackfruit trees prevalent in the village. The scientific cultivation aspects of horticultural crops and scope of value addition in jackfruit was explained by Dr. (Mrs.) S.Priya Devi, PS (Horticulture). Dr. Mathala Juliet Gupta, SS (AS&PE), Co-ordinator, SCSP explained about the SCSP scheme and the procedure to avail the same. She also briefed about the use of Arecanut dehusker and Arecanut climbing machines. She also explained about the primary processing of jackfruit. During the programme, inputs like growth promoting bio-control agent like Biogo-1 was distributed. The method of application for vegetables like chilli, tomato, brinjal was also

explained. During the interaction, it was learnt that they require quality Arecanut seedlings, Arecanut dehusker, high yielding vegetable seeds and technology on pest and disease management in chilli and Arecanut. They are also members of dairy co-operative and would like to avail bypass fat to feed their cows. Dr. Kotesh Lamani, SRF, facilitated the whole programme and also translated in native language whenever required



## Training programme on “Scientific pig farming” under Schedule Caste Sub Plan

ICAR-Central Coastal Agricultural Research Institute, Old Goa organized a training on scientific pig farming during 4-5th June, 2019 sponsored under the Scheduled Castes Sub Plan-scheme (SCSP) as a part of initiative to facilitate scheduled caste community in their developmental aspirations and to empower them through exposure trainings, supply of farm inputs and awareness creation. Dr. Gokuldas, P. P., Scientist (Animal Reproduction) acted as coordinator of the training programme. About twenty three farmers and youth from neighbouring Karnataka and Maharashtra states actively participated in the training programme. During the course, the trainees were exposed to sessions on scientific rearing of pigs including housing, feeding, reproductive and health

management. Field exposure visits to institute piggery units were organized during the programme. Audio-visual sessions on relevant topics were also arranged and various inputs, veterinary preparations and feed supplements and training certificates were distributed during the programme.



## Entrepreneurship Training on Vacuum Fried Technology based Processing Units for SC Beneficiaries of Coastal Region

A two day training program on “Entrepreneurship Training for SC Beneficiaries of Coastal Region in Vacuum Fried Technology based Processing Units” was organized on 10th - 11th June, 2019 at the ICAR- CCARI, Goa. The programme was coordinated by Dr. (Mrs.) Mathala Juliet Gupta, Scientist (Agricultural Structures and Process Engineering) and Dr. (Mrs.) S. Priya Devi, Principal Scientist (Fruit Science). Around Sixty three trainees from Ussap, Nonada, Harijanwada, Maulinguem, Bicholim Taluka, Goa and Shivapur, Kudal District Maharashtra, Pawashi, Sawantwadi District, Maharashtra attended the training programme. Participants were given training on various products, value addition techniques, use of time saving machinery. Sh. Hassan Mohammed, Taimim Foods explained the use of vacuum fryer to process fruits. The trainees were also sensitized about setting up of processing plants for value addition and livelihood enhancement. The government procedures and support for setting up of processing plants were explained in detail by Dr. P.P. Kulkarni, Deputy Director, MSME,

Goa. To motivate the trainees, Mr. Japhar Manalody, Managing director, Kozhikodens Agro Foods & Exporters, Kozhikode, Kerala shared his success story. The Director, Dr. E.B. Chakurkar motivated the trainees to make a beginning in processing local produce. Dr. Ramesh, Principal Scientist (Plant Pathology) also distributed the Institute developed Bioformulation, Goa Bio 1 to the interested farmers and Dr. S. Priya Devi distributed quality planting material of perennial crops like aonla, lemon, sapota, arecanut and nutmeg to the beneficiaries under SCSP scheme.



## Annual Zonal Workshop of KVKs of Maharashtra, Gujarat and Goa Organized by ATARI, Pune from 14-16 June 2019

Annual Zonal Workshop of KVKs was organized by ICAR-ATARI, Pune at ICAR-CCARI, Goa during 14th-16th June, 2019. Dr Ashok Patel, Vice Chancellor, SDAU, S.K. Nagar; Dr. K.P. Vishwanatha, Vice Chancellor, MPKV, Rahuri; Dr. S.D. Sawant, Vice Chancellor, BSKKV, Dapoli and Dr. V.P. Chahal, ADG (Agril Extension), ICAR; Dr. Lakhan Singh, Director, ATARI, Pune and Dr. E.B. Chakurkar, Director, CCARI, Goa inaugurated the workshop. Brief account of achievements was

presented by Dr. Lakhan Singh, Director, ICAR-ATARI, Pune. He highlighted different cases and IFS models for different categories of farmers to attain regular farm income. In his welcome address, Dr. E.B. Chakurkar, Director, ICAR-CCARI, Goa focused on diversified enterprises for higher profit. Shri Madhav Kelkar, Director, Directorate of Agriculture, Govt. of Goa urged the KVKs to work on value chain management. Shri H.R.C. Prabhu, Head, KVK, North Goa coordinated



the program. In the workshop, 79 KVKs of Maharashtra (47), Gujarat (30) and Goa (2) participated and presented their progress for the year 2018-19. Directors/Professors of Extension Education of 8 SAUs shared their initiatives on innovative monitoring mechanism and extension methodologies for overseeing the KVKs in their area jurisdiction.

In the valedictory session, Dr. A.K. Singh, DDG (Agril Extension), ICAR, New Delhi said that KVK is working as One Stop Shop for solving farmers' problems through real time agro-advisory in

different forms. Frontiers of extension methodology and opportunities were discussed in length by Dr. P. Das, Ex-DDG (Agril Extension), ICAR, New Delhi.



### Awareness and agricultural inputs distribution under SCSP scheme to the farmers of coastal Maharashtra and Goa.

An awareness and agricultural inputs distribution programme for the Schedule Caste farmers of coastal Maharashtra and Goa was organised by ICAR-CCARI during 20th - 21st June 2019 under Schedule Caste Sub Plan scheme. Various Agricultural Inputs such as spray pumps, farm implements, Bio formulation, pheromone traps and livestock feed supplements and soil health cards etc. were distributed to the paddy, coconut, cashew growers and also dairy farmers of Shivapur village, Kudal Taluka, Maharashtra and villages including Maulinguem, Gaondongrim, Savoiverem, Kavlem of Goa state. Dr. E.B. Chakurkar, Director ICAR-CCARI, emphasised upon the importance of the newer technologies and its adoption for improving the crop productivity and income. Dr. Gopal R. Mahajan Scientist (Soil Science) explained the importance of soil health card. The soil samples from 60 beneficiary farmers were collected and the soil health cards were prepared based on soil analysis. He also explained the importance of integrated nutrient management approach by use of balance dose of fertilizers and organics to improve the soil health and productivity. Dr. R.

Maruthadurai Scientist (Entomology) explained about the importance of pheromone traps, yellow and blue sticky traps for management of insect pests in different crops and the way to use it effectively. Dr. Paramesha, V., Scientist (Agronomy) explained about the scientific agronomic practices for improved paddy yields. He also explained the importance of vermicompost in farming system. Shri Rahul M. Kulkarni Senior Technical Officer (NRM) and Shri Ravi Kadam (SSS) assisted to coordinate the programme.



## Celebration of 5<sup>th</sup> International Day of Yoga

ICAR-CCARI celebrated the 5th International Day of Yoga (IDY) with great enthusiasm in grand manner on 21<sup>st</sup> June 2019. All the staff members participated in Mass demonstration of Yoga practice based on the Common Yoga Protocol and attended the various programmes in day long celebration of Yoga. IDY called “Festival of Yoga and Wellbeing” was started with the practice of various Yoga asanas followed by the Pranayama and Yog Nidra under guidance of the Certified Yoga Instructor Shri Shailendra Gupta from Saligao, Goa. Shri Shailendra Gupta (Yoga Guru) also delivered the talk on various physical, mental and spiritual benefits of the Yoga practice in daily life. Dr. J.R. Faleiro, the renowned Scientist of FAO, Rome and Ex-Scientist of this Institute graced the occasion with his kind presence. Dr. E.B. Chakurkar, Director (A) addressed the gathering on this occasion and

sensitized the participants regarding huge benefits one can get from the Yoga practice. Essay and Slogan writing competitions for staff members were organised in the afternoon. Shri Vinod Ubarhande, Farm Superintendent (Nodal Officer, 5<sup>th</sup> IDY) coordinated various activities for celebration of 5th IDY.



## Training, demonstration and distribution of pheromone traps for the management of Red palm weevil and Rhinoceros beetle in coconut and fruit flies in cucurbits

A training cum demonstration on use of pheromone traps for the management of Red palm weevil and Rhinoceros beetle in coconut and fruit flies in cucurbits was organised at ICAR-CCARI, Old Goa on 25<sup>th</sup> June 2019 under the project “Management of economically important insect pests with the use of pheromone technology through trainings and demonstrations” funded by NABARD. Dr. E.B. Chakurkar, Director, ICAR-CCARI addressed the farmers and briefed about the benefits of pheromone technology and distributed pheromone traps and lures to the farmers. Dr. Maruthadurai. R Scientist (Agril. Entomology),

explained the damage symptoms, insect life stages and other management aspects and demonstrated the application of trap. Dr. R. Ramesh, Principal Scientist (Plant pathology) was also involved in organising the programme. More than 30 farmers have actively participated in the programme.



## Agriculture contingency Plan meeting for the Goa state with ICAR-CRIDA, Hyderabad

Agriculture contingency Plan meeting for Goa state with ICAR-CRIDA, Hyderabad was organised at the Institute on 27th June, 2019 to develop agriculture contingencies plan for various emergency and disaster situations such as flood, drought, heat wave, cold wave and cyclone in the pre-event and post-event circumstances. Dr. E.B. Chakurkar, Director, ICAR-CCARI chaired the meeting, and Dr. Ravindra Chari, Director, ICAR-CRIDA, Hyderabad has addressed the gathering and conveyed the plan of action for preparing the national level initiative of preparing the agriculture contingency plan. Dr. D.B.V. Ramana, Principal Scientist (Animal Science) and Dr. K.V. Rao, Principal Scientist (Soil and water conservation) made deliberations on the preparation of the district level agriculture

contingency plan for field crops, horticulture, poultry, livestock and fisheries. Scientists of the institute and Subject Matter Specialists from Krishi Vigyan Kendra (KVK), North Goa and South Goa participated in the meeting for the preparation of the document for North Goa and South Goa districts of the state.



## Consultancy Training Programme on Artificial Insemination (AI) in Pigs for Progressive Pig Farmers

A three day consultancy training programme for progressive pig farmers on Artificial Insemination (AI) in Pigs was conducted by ICAR-CCARI from 29th June – 1st July 2019. A total of 12 progressive pig farmers from different parts of Maharashtra attended the training. E. B. Chakurkar, Director (A) and Coordinator of the training gave introductory preamble on Scientific Pig Farming, its importance, advanced technologies in piggery and AI and discussed about estrous detection, estrous synchronization and AI in pigs. In the practical sessions, demonstrations on detection of estrous, various stages of estrous, perfect stage of estrus with respect to AI, semen collection from boar and its analysis, dilution, dose preparation and preservation were conducted. All the participants were given hands on experience of

performing AI in pigs. Also scientific method of castration in male pigs was demonstrated by Dr. Sanjaykumar Udharwar, SMS, KVK, North Goa. On the third and last day participants were taken on field trip to Mr. Thomas K. G.'s pig farm at Sal, Bicholim.



## Organization of Flood relief-cum-animal health camps in Kolhapur district, Maharashtra

In the first fortnight of August 2019, unprecedented heavy rainfall occurred in western Maharashtra especially Kolhapur and Sangli districts leading to severe flooding and subsequent relocation of lakhs of people to relief camps. The flood resulted in several human and livestock casualties. Dr. E.B Chakurkar, Director (A), ICAR-CCARI, Goa constituted a team of scientists from the Institute to visit the affected areas for assessing the impact of flood on animal husbandry, to conduct animal health camps and also to play advisory role in post-flood management of livestock. The team comprising of Dr. Gokuldas P.P., Scientist (AR) and Dr. Chethan Kumar H.B., Scientist (VPH) and Dr. Yenge Gahininath Dnyanoba, SRF from ICAR-CCARI visited Kolhapur district, Maharashtra during 19th to 21st August, 2019. The activities were coordinated in collaboration with social workers, Bharatiya Kisan Sangh and local veterinarians. The veterinary team had an extensive interaction with 150 livestock owners, panchayat members, members of non-government organizations and

local vets. During the period, the team visited flood affected villages, namely Prayag Chikali and Kerli in Karveer Taluka, Mouje Sangaon in Kagal Taluka and Bhadgaon and Hebbal villages in Gadhinglaj taluka, and Kowad & Rajagoli villages in Chandgad Taluka. Through animal health camps and house visits, 255 animals were treated for different ailments and also provided with necessary medicines and preventive vaccination.



## Independence Day celebrations

ICAR-Central Coastal Agricultural Research Institute celebrated the 73<sup>rd</sup> Independence day on 15<sup>th</sup> August 2019 at 9.30 a.m. Dr. Eaknath B. Chakurkar, Director (Acting) of the Institute hoisted the flag in presence of all the staff members and their families. During his address, Dr. E.B. Chakurkar 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. The meritorious students were felicitated for their academic excellence for the

year 2018-2019. There was also prize distribution for the winners of the 3<sup>rd</sup> Annual Games of ICAR-CCARI, Goa.



## Quinquennial Review Team (QRT) meeting of the All India Co-ordinated Rice Improvement Project (AICRIP) for west zone (zone VI)

Quinquennial Review Team (QRT) meeting of All India Co-ordinated Rice Improvement Project (AICRIP) of the west zone (Zone VI) comprising of Gujarat, Maharashtra and Goa states was held at the Institute, during August 17-18th, 2019. The meeting was chaired by Dr. H.S. Gupta, former Director, Indian Agricultural Research Institute (IARI), New Delhi. The members of the QRT team Dr. R. Sridhar, Dr. S. Kundu, Dr. T.V.K. Singh and Dr. P.S. Birthal were also present during the meeting. All the co-operators from west zone presented their research achievements for the five periods from 2012 to 2017. The chairman and members of the QRT reviewed the research works carried out and gave their suggestions for the improvement of the work. Experts later

visited the Front Line Demonstrations and participatory seed production plots of the ICAR-CCARI in the farmers' fields and had interactions with the farmers.





## FOREIGN DEPUTATION

Dr. Shivasharanappa N, Scientist (Veterinary Pathology) availed Fulbright Post-Doctoral Fellowship-2018 for a period of 12 months from 01-09-2018 to 31-08-2019 at North Carolina State University, Raleigh, USA



## SUPERANNUATION

Shri Agostinho Fernandes, Assistant Administrative Officer retired on 31-08-2019.



## PROMOTION

S.No.	Name/designation of the Scientists	Granted higher Research Grade Pay in the Pay band.	Effective date of placement/promotion
1	Shri Omar Illroy Francisco Da Silveira Ursula deSouza, Technical Assistant T-3	Promoted to the next higher grade of Senior Technical Assistant T-4 under Technical Category II at Level 6.	08-08-2018
2	Shri Irappa M. Chalwadi, Driver-cum-Mechanic T-3	Promoted to the next higher grade of Driver-cum-Mechanic T-4 under Technical Category II at Level 6.	07-11-2018
3	Smt. Chitra Kankonkar, LDC	Promoted to the post of Upper Division Clerk	27-08-2019
4	Dr. Mathala Juliet Gupta, Senior Scientist (AS&PE)	Sr. Scientist in PB-3 Rs.15600-39100+RGP Rs.8000/-	14-04-2011

## CLEARANCE OF PROBATIONARY PERIOD AND CONFIRMATION

Sl.No.	Name of the Scientist	Date of which Probation cleared	Date of Confirmation
1	Dr. Sujeet Desai, Scientist (Land & Water Management Engineering)	31-12-2017	01-01-2018

