



# संवादपत्र NEWSLETTER

भाकृअनुप - केंद्रीय तटीय कृषि अनुसंधान संस्थान

(भारतीय कृषि अनुसंधान परिषद)

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(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



India is known as the 'Home of Spices', as they are in huge demand, owing to their exquisite aroma, texture, taste, and medicinal value. India is the largest producer, consumer, and exporter of spices globally. Spices are known to provide health and income security. However, one of the serious problems faced by the Indian spice industry is low productivity. The major factors for the low production and productivity of spices include traditional methods of production, problematic use of pesticides,

and poor infrastructure for post-harvest handling, storage, processing, and packing. The lack of production and supply of quality planting material is another major factor that needs to be addressed with improved technologies. To reiterate the current research status and new technologies to boost the Indian spice industry, a National Seminar on Spices: Emerging Trends in Production, Processing, and Marketing was organized by the Institute during 21- 22 January 2020.

The technical sessions of the seminar included agro-techniques for sustainable spice production, post-harvest management, and prospects for value addition, marketing issues and trading prospects, and Farmers-Scientists interaction. The theme areas covered under different technical sessions were genetic resources, varieties, biotechnology, advances in irrigation and nutrient management, disease and pest management, harvesting, processing, and packaging. Marketing and export opportunity, certification, spice-based agro-tourism, and transfer of technology were some of the other theme areas covered in the sessions.

During the various sessions, deliberations were held, which emphasized the need to develop strategies for spice production in the Konkan region, promotion for applicability of spices as functional foods, pharmaceuticals, and nutraceuticals. The issues of pesticide residue and microbial contamination to be addressed for enhancing the quality and increasing the export were discussed. Organic cultivation of spice as an important step towards doubling the farmers' income was also deliberated upon. The deliberations stressed the need to adopt good agricultural practices in spaces and strengthen the value addition, processing, and marketing industry. Promising technologies and germplasm lines for future breeding programs for enhancing the spice farmers' income were discussed. The important recommendations for enhancing the production of spices in the coastal region were specified.

*Chakurkar*  
DIRECTOR

## RESEARCH HIGHLIGHTS

### Large scale demonstration-cum-seed production of newly released salt-tolerant rice varieties (Manohara KK)

The demonstration-cum-seed production of recently released high-yielding salinity tolerant rice varieties viz., Goa Dhan 3 and Goa Dhan 4 was taken up at Durga farm, operating under Krishi Vigyan Kendra, South Goa, department of agriculture, Govt of Goa. The soil in Durga farm represents a coastal salinity ecosystem that was not under cultivation for almost 40 years. Mr. Sanjeev Mayekar, programme co-ordinator, KVK South Goa and Mr. Prajyot N Sakhalkar, farm manager of the KVK took initiation to revive

cultivation and brought about 3.5 ha of land under cultivation during the rabi season of 2019-20. Since it was rabi season, the salinity level was high and was ranging from 6.5 dS/M to 8.6 dS/M during the crop growth. Under high salinity conditions, Goa Dhan 3 and Goa Dhan 4 recorded grain yields of 3.15 and 3.01 t/ha, respectively. About 11 tonnes of seeds produced from the field were sent for reutilizing as seeds during the Kharif season of 2020.



Field view of the seed production plot in Durga farm, Margao



### Evaluation of sunflower hybrids under rice fallow in lowland situations of Goa

Paramesh V and AR Desai)

The sunflower hybrids (KBSH-44, KBSH-53, and KBSH-55) were evaluated under rice fallow of lowland integrated farming system. The growth and yield performance of these hybrids were found satisfactory. The agronomic practices like thinning (Thin out seedlings leaving only one seedling on the 10th day after sowing), earthing-up, and one hand weeding at 30 days after sowing was found to be essential to have a better crop stand. For hybrids, a spacing of 60 cm × 30 cm was maintained. Immediate irrigation after sowing followed by irrigation on the 4th-5th day and later at intervals of 7 to 8 days was found to be essential. Application of NPK fertilizers based on a soil test or following blanket recommendation at the rate of 60:90:60 kg NPK/ha was necessary. The practices such as

mild rubbing of the capitulum with the hand covered with a soft cloth or rubbing two flowers face to face gently was found necessary to improve the seed set, head size and to improve productivity.



General view of Sunflower hybrid KBSH-55 in lowland IFS under rice fallow





## Assessment of rhinoceros beetle damage to leaves of coconut palms

(V Arunachalam)

Rhinoceros beetle damages the coconut palm by making triangular or diamond-shaped cuts on the leaves. The photosynthetic area of the leaves gets reduced due to insect damage. The scoring technique was done using the procedure of counting leaves with varying degrees of damage. Each leaf was observed for the degree of damage due to the insect. A score of 1 was given to the leaf with no visible damage. Leaf with damage of 1 to 10%, 11-25%, 26-50%, >51% were scored as 2, 3 and 4, respectively. About ten randomly chosen leaves were used in the study. The number of leaves in each category and degree of damage

were counted and tabulated. A weighted average method was employed using the scores as weights to calculate the damage score for each coconut palm. About 68 coconut palms in the institute farm at B block were sampled and observed using the standard scoring technique. Of them, 8 palms had no visible damage to any of the randomly chosen ten leaves. The weighted average of damage score of each palm varied from 1 to 2.5 score indicating the damage is within 25%. The average damage score of 68 palms studied during the period (summer 2020) was 1.48.

## Potential natural enemies of fall armyworm *Spodoptera frugiperda*

(Maruthadurai R)

Fall armyworm (FAW), *Spodoptera frugiperda* (J.E. Smith) (Lepidoptera: Noctuidae) is a highly polyphagous invasive insect pest. A field trial was undertaken to study the natural enemies of fall armyworm on fodder maize. Predators like coccinellids, spiders, reduviid bug, rove beetle, earwig and wasps were found predating on various stages of fall armyworm. Rove beetle (*Paederus fuscipes*) was the predominant predators found predating on eggs and early

instar larvae. The population of adults of *P. fuscipes* varied from 1-5/plant. Egg parasitoids i.e., *Telenomus spp* and *Trichogramma spp* were found parasitizing the eggs. Larval parasitoids *Campolites chloridae* and Tachnids were also recorded. Natural infection of fall armyworm larvae by the entomopathogenic fungus, nuclear polyhedrosis virus, and bacteria were also recorded.



*Trichogramma spp*



Rove beetle



## Monitoring of rugose spiralling whitefly in coconut plantations with yellow sticky traps (Maruthadurai R)

The widespread infestation of rugose spiraling whitefly was recorded in coconut plantations. The use of insecticides was discouraged since the presence of natural enemies played a major role in regulating the rugose spiralling whitefly population. To monitor and manage the rugose spiralling whitefly, yellow sticky traps were installed on the coconut trunk. Attracted whitefly adults were counted in the yellow sticky traps. An average of 21.9 adults whiteflies was attracted per trap. A severe incidence of rugose spiralling whitefly was observed in the month of March-

May. Yellow sticky traps were found useful for monitoring and mass trapping of rugose spiralling whitefly in coconut plantations.



Attracted whiteflies on the yellow sticky trap

## Cryopreservation protocol standardized for boar semen

(EB Chakurkar and Gokuldas PP)

Through the Institute project, cryopreservation protocols were evaluated and two of them were working satisfactorily for long-term preservation of boar semen using indigenous boar semen extender with different controlled-rate freezing protocols. Cryopreservation extenders containing modified levels of egg yolk and glycerol as cryoprotectants were used. Selected protocols for controlled-rate freezing using a programmable freezer were compared for post-thaw semen quality and viability. There were significant differences ( $p < 0.05$ ) in post-freezing semen quality parameters associated with different cryopreservation protocols. Mean post-thaw progressive sperm motility following 24 hours of freezing was 5.5%, 23.0%, 35.8% and 18.75% for protocols I, II, III, and conventional vapor freezing, respectively. The mean percentage of live sperms in post-freezing samples were 17.7%, 51.0%, 56.3% and 36.2% for protocols I, II, III, and vapor freezing,

respectively. Selected frozen-thawed samples were also evaluated for in-vivo fertility status in breeding sows using a deep intra-uterine insemination procedure. Overall conception rate of 47.37% and farrowing rate of 15.79% were recorded in the in-vivo fertility trials



Sow with piglets born out of successful AI using frozen semen technology



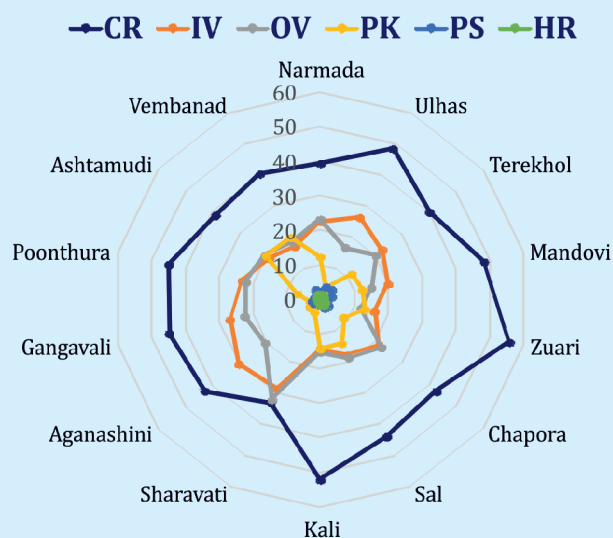
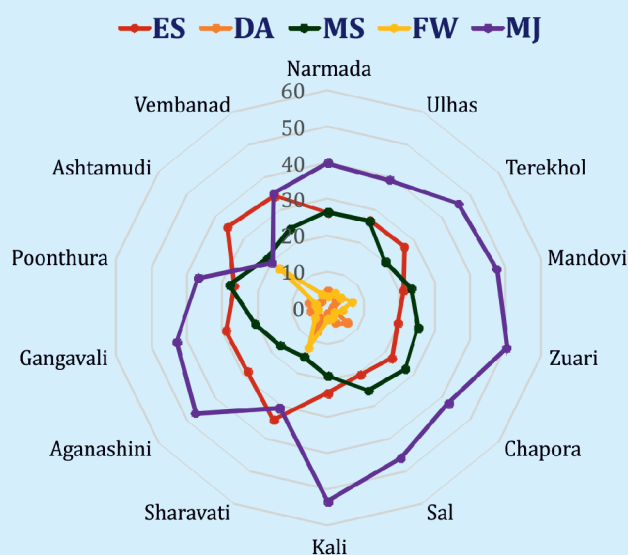


## Assessment of fisheries resources from estuaries along the Indian coast

(Sreekant GB)

Fish community structure of 14 estuaries from the west coast of India (*Narmada, Ulhas, Terekhol, Chapora, Mandovi, Zuari, Sal, Kali, Sharavathi, Aganashini, Kochi, Poonthura, Ashtamudi, and Vembanad*) and two estuaries (*Godavari and Bheemuni*) from the east coast of India were characterized. In total 202, 176, 156, 81, 64, 163, 122, 62, 80, 51, 55, and 45 species were collected from Zuari, Mandovi, Terekhol, Chapora, Sal, Kali, Aganashini, Sharavathi, Gangavali, Poonthura, Godavari, and Bheemuni estuaries, respectively aggregating to a total of 302 species. Data for this analysis have been collected from primary and secondary sources. The fish diversity and richness were found to be highest in Zuari and lowest in Mandovi, highest during pre-monsoon

season and lowest in monsoon season, highest in lower reach and lowest in upper reaches. The evenness index did not follow a distinct pattern compared to diversity. However, the index peaked during the pre-monsoon and post-monsoon seasons. The highest value of evenness was observed in the middle reach of the estuarine systems. The order of contribution of estuarine use guild followed marine juvenile migrants, marine stragglers, estuarine species, diadromous species, and freshwater species. The order of contribution of feeding guild followed carnivores, invertebrate feeders, omnivores, planktivores, piscivores, and herbivores.



Composition of fish guilds based on estuarine use (estuarine species (ES), marine juvenile migrants (MJ), marine stragglers (MS), diadromous species (DA), and freshwater migrants (FW)) and feeding type (carnivores (CR), Invertebrate feeders (IV), omnivores (OV), planktivores (PK), piscivores (PS) and herbivores (HR))



## NEW INITIATIVES

## DNA barcoding of leaf tip mutation of black pepper

**(V Arunachalam)**

A novel mutant of black pepper (*Piper nigrum* L.) with a modified leaf tip was identified and characterized. The phenotypic mutation in the leaf is an interesting variation reported for the first time in black pepper. DNA barcoding studies are initiated to understand the mutation. Molecular taxonomists use the sequence level variation in specific regions of the genome to understand the species level variation. To

understand the variation of the mutant at the DNA sequence level, two DNA barcoding loci matK (maturase K) and rbcL (ribosome large unit) were chosen. About ten plant leaf samples (three of black pepper with normal leaves, three of leaf tip mutant black pepper and three of related wild species *Piper colubrinum* Link and one normal leaf black pepper as scion and grafted on *P. colubrinum* Link rootstock) were studied.

## Status of palms in sustaining livelihoods in coastal India

**(V Arunachalam)**

Palms, the plants belonging to the botanical family Arecaceae play a crucial role as life support systems and a source of multiple products hence form a major livelihood option for the people of

the coastal zone. Five major palms are cultivated extensively in the coastal districts of the Indian mainland and the island territories viz.,

Common name	Botanical name	Habitat choice	Major part used	Sex expression
Arecanut	<i>Areca catechu</i>	Humid	Dry endosperm / Chali	Monoecious
Palmyrah	<i>Borassus flabellifer</i>	Arid /Dry	Sap, endosperm	Dioecious
Coconut	<i>Cocos nucifera</i>	Humid	Endosperm, husk	Monoecious
Date palm	<i>Phoenix dactylifera</i>	Arid	Fruit	Dioecious
Oil palm	<i>Elaies guineensis</i>	Humid	Kernel, mesocarp	Monoecious

Palms also occupy large geographical areas on coastal line planted tree or agroforestry systems and act as a buffer against natural disasters. Palms are a source of healthy sugar, fiber and oil. Oil palm cultivation in India can solve the edible oil crisis in the country and reduce the huge imports. The Fronds/leaves of the palm are used to make many useful items including brooms and handicrafts. Few important species like cocoa,

black pepper, clove, nutmeg and cinnamon are preferably grown in the interspecies of palm groves. The percentage of area occupied by each palm over the total geographical area, per cent contribution to gross domestic product (GDP) are proposed to be studied in the new program. Mangrove palms *Nypa fruitcans* and *Phoenix padulosa* offer immense potential in greening the wastelands of marshy, swampy, and water





inundated backwater regions of coastal zone. Climbing palms of the subfamily calamoideae such as rattans are used to make furniture and has a huge scope in coastal India. Ornamental

palms are useful to plant in the avenues and indoor gardens and form a livelihood to the nurserymen and people involved in maintenance.

## **NABARD funded project on “Empowerment of farmers through adoption of sustainable and eco-friendly Integrated Pest and Disease Management technologies in major vegetable crops in Goa”**

**( R Maruthadurai and R Ramesh)**

A new project funded by NABARD entitled “Empowerment of farmers through the adoption of sustainable and eco-friendly Integrated Pest and Disease Management technologies in major vegetable crops in Goa” was initiated in January 2020. The principal investigator of the project is Dr Maruthadurai, R and Dr R. Ramesh is Co-principal investigator. The project was proposed

to popularise and adoption of eco-friendly Integrated Pest and Disease Management technologies in major vegetable crops. As part of the project many training programmes, on-field demonstrations and input distributions are planned to enhance the capacity building of farmers on the use of Integrated Pest and Disease Management technologies in vegetable crops.

## **Fermented Kokum seeds yield more butter**

**(S Priya Devi, Mathala Juliet Gupta, R Ramesh)**

Kokum seed is an excellent source of butter, which is commercially used in the pharmaceutical, confectionery, and cosmetic industries. Different methods employed in butter extraction showed that the fermentation method was superior. The causal factor was found to be the presence of yeast that aided in the

fermentation of fresh seeds. Hence, an attempt was initiated to use the same yeast culture in fermenting dried seeds. Preliminary studies showed that there is an increase in the fat content of yeast-treated seeds. However, this study will continue for further confirmation of results.



## Establishment of automated irrigation system demonstration unit

(Sujeet Desai)

An automated irrigation system demonstration unit was established in the agro-eco tourism centre for irrigation in the medicinal block, mixed plantation crops and nursery unit. Micro-sprinklers were installed in the medicinal block whereas sprinkler heads were used for irrigating mixed plantation crops of areca nut, coconut, banana, spices and nursery unit. The automated irrigation system is timer based, which consists of controller unit, voltage stabilizer, star-delta timer (24-240 VAC) and solenoid valves. The start and end time of pump operation and opening and closing of solenoid valves can be adjusted in the controller unit for irrigating on daily basis. The controller unit is a 8 station panel in which 8 valves can be operated and requires 3 phase electric power. Based on the required settings, the controller unit actuates the pump by sending

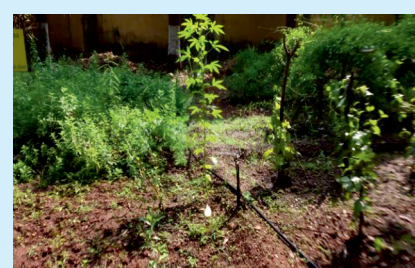
the signal to the star delta timer. Once the pump is started, the control unit sends the signal to the solenoid valve which has to be operated first. After completion of irrigation time of first solenoid valve, controller unit sends signal to the second solenoid valve which opens just a few seconds before the closing of the first valve. In this way, all the valves can be operated based on the time of irrigation. The main advantage of using an automated irrigation system is that it saves water, labour and electricity, as only the required quantity of water is supplied to the plants, there is no human intervention and pump is operated only for the required pre-fixed time. The total cost of this automation system is approximately Rs. 1.9 Lakhs.



Controller unit



Solenoid valve



Micro-sprinklers

## Upgradation of Computer-Assisted Semen Analyzer

(Gokuldas PP and EB Chakurkar)

Computer-Assisted Semen Analyzer (CASA) consists of advanced electronic imaging system to visualize spermatozoa and a software program to evaluate individual sperm parameters like motion kinetics and morphology. The existing CASA system for swine species in the animal reproduction lab was upgraded to include advanced semen analysis for other important species along with a full update of an existing



Computer-Assisted Semen Analyzer system





software package. Important features of the system include Windows-based user interface, motility evaluation results in terms of counts, percentages, semen processing data, standard

kinematic values, sperm concentration and illumination check features for spermatozoa of important species like cattle, goat, pig and poultry.

## Underwater visual census system

(Trivesh Mayekar and Sreekanth GB)

A manually operated underwater visual analysis system is established in the fisheries section to observe the fish and aquatic communities up to 50 m in rivers, lakes, reservoirs, and coastal ecosystems. The visual angle of the underwater camera is 360°, the camera rotates automatically, manually, AB section. The 36pcs lamp (12 IR +24 White brightness adjustable) with night vision function lightens the dark underwater

environment. It has a high-quality special cable of 5 mm diameter with a strong tensile resistance video line that can undertake 30 kg in deep water. It has a rechargeable battery of 4500mAh, which can last 4 hours during operations. This camera is provided with 8 GB TransFlash card (support 32 GB) which can record for along time.





## MAJOR EVENTS

### National Seminar on Spices: Emerging trends in production, processing, and marketing

The institute has organized the National Seminar on Spices: Emerging trends in production, processing, and marketing jointly with Directorate of Arecanut and Spices Development (DASD), Kozhikode, Kerala and Association of Coastal Agricultural Research, Goa during 21st-22nd January 2020. For the inaugural session, the delegates included, Dr. S.D. Sawant, Vice-Chancellor, Dr BSKKV, Dapoli as Chief Guest, Dr J.C. Katyal, Ex DDG (Education), ICAR, New Delhi as Special Guest, Dr K. Nirmal Babu, Director,

ICAR-IISR, Kozhikode, Dr Gopal Lal, Director, ICAR-NRC for Seed Spices, Ajmer, Shri. Madhav Kelkar, Director, Directorate of Agriculture, Government of Goa, and staff of DASD. During the session, delegates addressed the gathering about the need to develop strategies for spice production in the Konkan belt, the applicability of spices as functional foods, organic cultivation of spices etc. Dr. A.R. Desai, Principal Scientist (Horticulture), was the organizing secretary.



### Republic Day celebration

The Institute celebrated 71st Republic day on 26th of January 2020 at 9.30 am at the campus. Dr. E. B. Chakurkar, Director (Acting) hoisted the flag and addressed the scientists, administrative and supportive staff. In his republic day address, the Director appreciated the good work done by the various sections. He also felicitated the kids of staff who had participated in the drawing competition held during Swachhata Pakhwada. The Director emphasized strong cooperation of administrative, technical staff, and scientists to work on future challenges of coastal agriculture.





## Indian Society of Weed Sciences-Biennial Conference: Weed Management for Enhancing Farmers' Income and Food Security

ISWS-Biennial Conference on “Weed Management for Enhancing Farmers' Income and Food Security” was organized by The Indian Society of Weed Science (ISWS), in collaboration with ICAR-Central Coastal Agricultural Research Institute, Goa and ICAR-Directorate of Weed Research (DWR), Jabalpur at ICAR-CCARI, Goa during 5th to 6th February 2020. The delegates of the inaugural session included chief guest Adv. Narendra Sawaikar, Dr. Sushil Kumar, and Shobha Sondhia, the President and secretary of ISWS, and Dr. P.K. Singh, Director of DWR and Dr. Paramesha, V. Scientist, ICAR-CCARI (Organising secretary). The inaugural session was followed by different technical sessions including oral and poster presentation on different aspects of weed management including weed biology, sustainable weed management, management of problematic weeds, non-chemical weed management, herbicide resistance, herbicide residues, new herbicides molecules/formulations, weed education, extension, socio-economic

implications, adoption, and impact assessment. The conference was concluded with a valedictory session. The chief guest of the valedictory function, Dr. N.P. Singh urged the importance of weed management in field and plantation crops to improve the yield and income of the farm family. Dr. E. B. Chakurkar, Director, ICAR-CCARI highlighted the importance of organic farming, non-chemical weed management in the west coast of India.



## Aqua Goa Mega Fish Festival-2020

ICAR-CCARI has actively participated in the Second “Aqua Goa Mega Fish Festival-2020” organized by The Directorate of Fisheries, Govt. of Goa in collaboration with the National Fisheries Development Board, Hyderabad at Panjim from 13th-15th February 2020. Shri. Pramod Sawant, Hon. Chief Minister of Goa, inaugurated the three days event. ICAR-CCARI displayed posters highlighting the research achievements, products, varieties, and models representing their research and extension activities in the stall. Moreover, the sale and display of ornamental fish seeds, feed, and fish posters were also there in the stall. The Hon. Chief Minister and Minister of Fisheries, Govt. of Goa,

visited the institute stall and appreciated the



efforts of ICAR-CCARI in developing and disseminating the technologies for fishery resource enhancement in the State. Fisherfolk, fish farmers, ornamental fish culturists, students, entrepreneurs, and company professionals visited the stall and collected the necessary

information. The exhibition stall was organized by Dr. Trivesh S. Mayekar, Scientist (Fish Genetics and Breeding), and Dr. Sreekanth G.B., Scientist (Fisheries Resource Management), Fisheries Section of ICAR-CCARI.

## International Women's Day

This Institute celebrated International Women's Day by showcasing the achievements of women in the field of agriculture and related areas. A program in collaboration with Green Growth Institute, Sangolda, Goa was conducted at this Institute in which a total of 130 women participated including women farmers, scientists, teachers, technical staff, administrative staff, supporting staff, and contractual staff. Dr. Mathala Juliet Gupta, Senior Scientist, ICAR-CCARI, Goa welcomed all the Dignitaries to the program. Smt. Sandra Fernandes, Director of 'Green Growth Institute', Sangolda, Goa gave a welcome speech, followed by a speech by Dr. E. B. Chakurkar, Director(A), ICAR-CCARI, Goa. Smt. Jennifer Miranda, Chairperson 'Ami Goenkar', NGO, gave a talk on women empowerment. Smt. Jennifer Levis Kamat,

Member, Goa Chamber of Commerce (Women's Wing) also spoke on the occasion. The other dignitaries who participated in the program were Smt. Sultana DSouza- Mrs Goa 2019, Smt. Swati Kerkar, Smt. Avita, Sports Woman and Smt. Rahila Khan, Head of the Department Fashion Design, Government Polytechnic, Panaji.



## Training Programme on Turmeric Production, Processing and Marketing

A training programme on 'Turmeric Production, Processing and Marketing' was organized by Horticulture Sciences section of ICAR-CCARI during 9th-13th March 2020, exclusively for 15 farmers representing Panchkula and Ambala districts of Haryana State, sponsored by Haryana State Horticulture Department. The program, inaugurated by Dr E.B. Chakurkar, Director, ICAR-CCARI in the presence of Dr Jitendra Singh, Training Organizer, HTI, Uchani, Haryana

continued for the next four days and comprised of both theoretical presentations followed by practical demonstrations. Topics covered during the training included national status and economic importance of turmeric crop, improved production and management practices, integrated pest and disease management in turmeric, mechanization in production and processing of turmeric, pro-tray nursery technology for turmeric, and





potential application of Information and Communications Technology (ICTs) in turmeric production. Dr. A. R. Desai, Principal Scientist (Horticulture), assisted by the scientists, Dr. Maneesha, S. R. and Dr. M. J. Gupta; the technical officers - Shri Sidharth Marathe, Shri Rahul Kulkarni, Mrs. Pranjali Wadekar, Shri Omar, and others, coordinated the overall training program. Dr. Manoj Mali, In-charge, Turmeric Research Scheme, MPKV at Kasabe Digraj, Sangli Dist., Maharashtra, Shri H.R.C. Prabhu, Programme Co-ordinator, KVK, North Goa; Dr B. A. Vadiraj, Scientist-D and station Head, Indian Cardamom Research Institute (Spices Board

India), Sakleshpur, Karnataka and Shri Vinod Todkar, a progressive turmeric farmer from Sangli, Maharashtra also gave talks on various topics.



### अग्निसंबचाव, अग्निशमन एवं अग्निसुरक्षा पर प्रशिक्षण सह प्रदर्शन कार्यक्रम

संस्थान में दिनांक १३.०३.२०२० को अग्निसंबचाव, अग्निशमन एवं अग्निसुरक्षा पर प्रशिक्षण सह प्रदर्शन कार्यक्रम का आयोजन किया गया। इस अवसरपर मुख्यअतिथी एवं मार्गदर्शक श्री तृप्तेश नाईक, सब-ऑफिसर, प्रशिक्षणविभाग, अग्नि एवं आपत्कालीन सेवा निदेशालय, पणजी, गोवा और उनके सह कर्मी श्री दिपक शेतगावकर, श्री तुकाराम रेडकर, श्री विशाल मांद्रेकर, श्री विलास मोरजकर आदी उपस्थित थे। मुख्य अतिथी एवं मार्ग दर्शक श्री तृप्तेश नाईक जीने आग लगने के लिये आवश्यक परिस्थिती और आग के विविध प्रकार इन पर विस्तृत जानकारी दी और अलग-अलग अग्निशामकों का अलग-अलग आग के परिस्थिती में किस प्रकार से इस्तेमाल करना चाहिये इस पर मार्गदर्शन किया। श्री दिपक शेतगावकरजी ने आग लगने की परिस्थिती में किस फुर्ती के साथ हमें उचित चरनबद्धकार्य करना चाहिये इस पर सभी को जानकारी दी। साथ ही घरेलू एल.पी.जी. सिलिंडर की देखभाल हेतु अत्यंत आवश्यक बिन्दुओं पर भी चर्चा की। फिल्ड प्रदर्शन के दौरान, कार्यालय के सभी कर्मचारीयों के लिये डॉ. भट्टाचार्य हाल के प्रांगन में विविध ज्वलनशील पदार्थों जैसेकी, लकड़ी, कागज, पेट्रोल, डीझेल आदी को आग

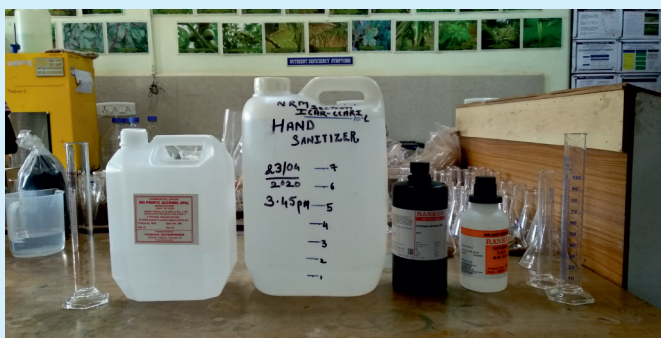
लगाकर उसे विविध अग्निशामकों का उपयोग करके से बुझाते हैं इस पर प्रात्यक्षिक किया गया। इस प्रात्यक्षिक में संस्थान के विविध कर्मचारीयों ने बढ-चढकर हिस्सा लिया। संस्थान के निदेशक श्री इ. बी. चाकूरकर एवं प्रधान वैज्ञानिक श्री एम. थंगमजी ने सभी साथीयों को संबोधित किया और आवाहन किया कीजरुरत पडनेपर आग संबचाव, अग्निशमन एवं अग्निसुरक्षा में सभी को तत्परता दिखानी चाहिये। श्रीमती मदिना सोलापुरी, व. तकनिकी अधिकारी (सिव्हील), श्रीविनोद उ बरहंडे, प्रक्षेत्र अधिकक्षक और श्री योगानंद गावडे, तकनिकी अधिकारी (इलेक्ट्रीक) ने इस आधे दिन के प्रशिक्षण सह प्रदर्शन कार्यक्रम का सफलता पूर्वक आयोजन किया।



## Preparation of hand sanitizer as per the World Health Organization guidelines for use as a preventive measure against COVID-19

Washing hands with soap and the use of hand sanitizer are some of the important measures to prevent the spread of COVID-19. A team of scientists and technical officers of ICAR-Central Coastal Agricultural Research Institute, Old Goa have prepared a 'hand sanitizer' as per the guidelines for 'Local production of WHO recommended hand rub formulation' at the Institute laboratory using ethyl alcohol or isopropyl alcohol, hydrogen peroxide and glycerol in a prescribed proportion. The team also prepared hand sanitizer by using virgin coconut oil in place of glycerol as per the method prescribed by ICAR-Central Plantation Crops

Research Institute, Kasargod, Kerala. The virgin coconut oil used is produced at the Virgin Coconut Oil Production Unit of the Institute. The Institute-made hand sanitizer has been used by the staff regularly as an important preventive



## Awards

- Dr. S. Priya Devi - Best poster award for the paper Diversity in Kokum (*Garcinia Indica*) by Priya Devi S., Kotesch Lamani and Tejagowda Bhanuje. 2020. Natural. In National Seminar on Spices: Emerging trends in Production, Processing, and Marketing, 21-22 January 2020
- Dr. Sreekant, G.B. - Young Scientist Award in Fisheries Resource Management by the Society of Fisheries and Life Sciences, College of Fisheries Campus, Mangaluru, Karnataka, India.
- Dr. Sujeet Desai- Best Oral paper award for "Landslide events of Kerala, their causes and impacts: A case study of Puthumala landslide in Wayanad district" in the National Seminar on Landslide Mitigation and Slope Management held from 28-29th February 2020 at ICAR-IISWC RC, Udhamandalam.
- Dr. Bappa Das - Selected for Agriculture Research Organization – Israel Postdoctoral Fellowships 2020-21





## Seminars Attended

Date	Name of Scientist	Programme	Venue
20th-21st January 2020	Dr. S.Priya Devi	National Seminar on Spices: Emerging Trends in Production, Processing and Marketing	ICAR-CCARI, Old Goa Old Goa
	Dr. Sujeet Desai		
28th - 29th February 2020	Dr. Sujeet Desai	National Seminar on Landslide Mitigation and Slope Management.	ICAR-IISWC RC, Udhagamandalam.
28th February 2020	Dr. Susitha Rajkumar	World Veterinary Poultry Association (WVPA -India) Conference - 2020 on “Advances in Poultry Science for One Health”	ICAR-NIANP, Bengaluru

## Lectures Delivered

Date	Name of the Scientist	Lecture topic/Programme	Participants	Venue
05-03- 2020	Dr. Sujeet Desai	Soil moisture conservation techniques and appropriate irrigation in coconut	Farmers	ICAR-KVK, North Goa
09-03- 2020	Dr. Sujeet Desai	Resource conservation technology-Micro- irrigation, mulching, water harvesting and development of watershed	Farmers	ICAR-KVK, North Goa

## Administration

Transfer to ICAR-CCARI – Dr Surendra Kumar Singh, Principal Scientist (Soil Science) joined at ICAR-CCARI, Goa on 06-01-2020 transferred from ICAR-NBSS&LUP, Nagpur.

