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## CMFRI Newsletter

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Hybrids of Black ocellaris and Percula clownfish

see page 7



हर कदम, हर डगर  
किसानों का हमसाफर  
भारतीय कृषि अनुसंधान परिषद

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Indian Council of Agricultural Research  
**CENTRAL MARINE FISHERIES RESEARCH INSTITUTE**  
P.B. No. 1603, Ernakulam North P.O., Kochi - 682 018, Kerala, India

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**Shri C. V. Jayakumar**  
**Shri P. R. Abhilash**

## DIRECTOR SPEAKS



The institute research activities focus on sustainable harvest of marine fishery resources and augmentation of marine fish production by extending support for promoting mariculture activities in the country. In this context, Recirculatory Aquaculture Systems are the preferred technical option in marine hatchery systems which can give good results in fish breeding and seed production programmes. The development of an indigenous RAS facility by our scientists is noteworthy. Following

success with breeding of pompano in this set-up, we can look forward to successes with other species of mariculture importance in the future. Collaboration with scientific institutes of repute such as Space Applications Centre to utilise imaging and satellite data for wetland conservation is aimed at an holistic development of the fisheries sector. Several training programmes and related technical support has been extended to various stakeholders. The institute looks forward to further strengthening these activities and endeavour for a vibrant marine fisheries sector in India.

With best wishes,

**A. Gopalakrishnan**  
**Director**

## About ICAR-CMFRI

The Central Marine Fisheries Research Institute, Kochi, is a premier research Institute under the Indian Council of Agricultural Research, devoted to research and training in marine fisheries and mariculture.

ICAR-CMFRI has three Regional Centres viz., Mandapam Camp, Visakhapatnam and Veraval and eight Research Centres located along the Indian coastline, catering to the marine fishery policy needs of all maritime states of the country.





# Indigenous RAS facility to give a fillip to mariculture



*RAS facility at Vizhinjam Research Centre*

**D**esign, dimensioning and performance evaluation of a research facility for studies on the requirements of fish in RAS environments has been completed by the scientists of Vizhinjam Research Centre of ICAR - CMFRI. Uniqueness of this new system that it is a simple design as well as cost-effective. It operates with a single pump, with regulation of percentage outflow through overflow and central drain by a single valve and aeration and stripping of CO<sub>2</sub> achieved by venturi with low costs incurred.

Maturation of most coastal fishes can be achieved under controlled hatchery environment with good quality seawater, appropriate feeding strategies and without the stress of overcrowding and related disturbances. RAS allows fish breeders to manipulate environmental conditions that are critical in maturation processes such as temperature, photoperiod, food availability and other water quality parameters in addition to facilitating observation of the behaviour of the fishes to perform various husbandry steps appropriately.

Three units of a Recirculatory Aquaculture System of 30 tonnes capacity, were constructed and made

functional at new hatchery complex of Vizhinjam Research Centre of ICAR-CMFRI. These indigenously developed low-cost RAS systems were developed and perfected for brood stock development of marine fishes to support mariculture activities of the institute. It includes 2000 to 30000 litre capacity Fibreglass Reinforce Plastic (FRP) tanks with mechanical and biological filtration sub systems. Facility for disinfection,

temperature control and photoperiod manipulation, using equipment such as, proteins skimmer, UV filters, chillers, biological filter cabinets and LED lighting with timer control are available. Funded by the National Fisheries Development Board (NFDB) the trial runs of the RAS with pompano fishes were successfully made.

*(Reported by: Anil M.K., Scientist-in-Charge, Vizhinjam Research Centre)*



*Broodstock tanks in the RAS*

## Dr. Trilochan Mohapatra visited ICAR-CMFRI



Dr. Trilochan Mohapatra, DG, ICAR and Dr. J. K. Jena, DDG, ICAR with Directors of ICAR-CMFRI & ICAR-CIFT and Heads of Divisions in ICAR-CMFRI

Dr. Trilochan Mohapatra, Secretary, DARE and Director General, Indian Council of Agricultural Research (ICAR) along with Dr. J. K. Jena, Deputy Director General (Fisheries), ICAR visited the institute on 25<sup>th</sup> May 2019. On the occasion a nutraceutical product developed from seaweeds, Cadalmin<sup>TM</sup> Antihypertensive extract (Cadalmin<sup>TM</sup> AHe) a natural remedy for hypertension developed in the Marine Biotechnology Division of ICAR-CMFRI was released. A book 'The Enigmatic Indian Oil Sardine: An Insight' and posters on major edible and ornamental fishes of Lakshadweep Islands prepared by the Pelagic Fisheries Division of the institute were also



Release of nutraceutical product Cadalmin<sup>TM</sup> AHe

released. Dr. J. K. Jena presided over the function. Dr. A. Gopalakrishnan, Director, ICAR-CMFRI welcomed the gathering

and Dr. T. V. Sathianandan, Head of the Fishery Resources Assessment Division, ICAR-CMFRI proposed vote of thanks.

## MoU with ISRO for real-time monitoring of wetlands

In a major step towards the conservation of small wetlands across the country, ICAR-CMFRI signed a Memorandum of Understanding (MoU) with the Space Applications Centre (SAC) of the Indian Space Research Organisation (ISRO) on 8<sup>th</sup> April 2019 in Ahmedabad. According to the MoU a mobile app and a centralised portal with a complete database of more than five lakh small wetlands across the country will be developed by SAC for real-time monitoring and further conserving the wetlands. This work is proposed under the National Innovations in Climate Resilient Agriculture (NICRA) project of ICAR-CMFRI for which MoU was signed by Shri Nilesh Desai, Associate Director of SAC and Dr. P. U. Zacharia, Principal Investigator, NICRA project. The

### National Resilience Framework for Fisheries and Wetlands (NRFW)





acquisition and integration of wetland data into a common digital repository, will help the stakeholders and the public to obtain time-to-time information on wetlands. The already developed geospatial wetland database of ISRO will be further strengthened by ICAR-CMFRI with field level inputs of physical, chemical and biological parameters of the wetlands

with the support of other fisheries research institutions. By generating periodic field level wetland datasets on water and sediment quality, biodiversity and species health, a comprehensive wetland information system which could facilitate the village level wetland advisories to the local people by scientific communities is envisaged. The data

generated will be stored in the SAC server with access to authorised scientific communities while ICAR-CMFRI will act as the nodal centre for approving the latest data updates on wetlands submitted by collaborating fisheries institutions and stakeholders. This can pave the way for enhanced climate change resilience of small wetlands in the country.



*Signing of MoU on Wetlands Database development between SAC and ICAR-CMFRI*

## Harvest Mela for farmed bivalves

A Harvest Mela for farmed bivalves at Kottaiadu, Kancheepuram district was conducted on 26<sup>th</sup> April 2019 by the Madras Research Center of ICAR-CMFRI in the presence of Shri. A. Elango, Joint Director of Fisheries, Chennai and local community leaders. The harvest of mussels and oysters was part of the project Fisheries Management for Sustainable Livelihoods II: Component II Bivalve Farming, implemented for the Tamil Nadu Fisheries Department. A demonstration-cum-training on meat extraction, heat shucking of meat and depuration of bivalves for the benefit of the women beneficiaries was held. About



*Release of brochure by chief guest at the Harvest Mela for bivalves*

30 kg of depurated meat was obtained and sold at the rate of ₹ 200 per kg and the proceeds handed over to the women participants. A brochure in vernacular,

highlighting the nutritive value of the bivalves was also released on this occasion by the Joint Director of Fisheries, Tamil Nadu.

## Sea ranching of Green tiger shrimp

In continuation of sea ranching programmes in Palk Bay organised by the Mandpam Regional Centre of ICAR-CMFRI, about 1.0 million seeds (PL 20-35) of green tiger shrimp *Penaeus semisulcatus* were released into the sea at Thonithurai, Mandapam on 4<sup>th</sup> May 2019. It is expected that when the fishing activities resume after the Seasonal Fishing Ban period of April-May, these would have grown and could be netted by the fishermen, thereby supporting their livelihoods. Dr. K.K. Joshi, Head, Marine Biodiversity Division, ICAR-CMFRI, was the Chief Guest at the sea ranching programme. Officials of State Fisheries Department, ICAR-CMFRI, leaders of Fishermen Associations and fishermen attended. During the last two



*Sea ranching programme in Palk Bay*

years around 5 million shrimp seeds have been released in Gulf of Mannar and Palk Bay. The sea ranching programme was co-ordinated by Mr. M. Sankar and Dr. B. Johnson. Pleopod samples of shrimp

including brooders is being collected for the parentage analysis using molecular markers to evaluate the impact of sea ranching on shrimp stock enhancement.



## Cage farming focus by ICAR-CMFRI



*Harvest of cage reared cobia in low saline conditions in Uttara Kannada district*

Successful harvest of cobia, *Rachycentron canadum* was taken up for the first time from a low saline open water cage established at Gangavali estuary, Shiroor Village, Ankola Taluk, Uttara Kannada district, Karnataka on 14<sup>th</sup> June 2019. The women beneficiary was Mrs. Bhoodevi Harikantra with the technical guidance and support from Karwar Research Centre of ICAR-CMFRI under the NFDB sponsored project on "Integrated Open Water cage culture in selected Districts in Kerala and Karnataka". Around 1700 cobia fingerlings with an average size of 15 gm were stocked in

the 4 x 4 x 3 m square GI cage in December 2018. After successful rearing of fishes by providing low value fishes for 183 days, around 1140 fishes were harvested and the total production obtained was around 500 kg. The average weight of each fish during the harvest was around 475 g with a survival rate of 66%.

Fish farmers in Karnataka are also enthusiastic about open water cage culture. Karwar Research Centre of ICAR-CMFRI has taken up a project on popularising Open water cage culture in Karnataka with financial support provided by National Fisheries Development

Board, Hyderabad. Selected beneficiaries were trained and provided subsidy for initiating open water cage fish culture in estuaries of Karnataka. The subsidy is provided mainly for cage fabrication, seed and feed. 96 selected beneficiaries set up 146 cages with different fishes such as seabass, cobia, red snapper and pearl spot. The project was initiated in October 2018 and most of the cages were stocked by January 2019 with Karwar Research Centre providing technical support through continuous monitoring and guidance to the farmers.

*(Reported by Karwar Research Centre)*

With technical support from Vizhinjam Research Centre 43 cages for finfish culture were launched by farmers supported by NFDB. It was inaugurated by the Kerala Government's Minister for Fisheries and Harbour Engineering, Smt. J. Mercykuttyamma on 13<sup>th</sup> May, 2019. The convenor of "Pearlspot Cage Farmers Group", Thirukunnapuzha, Mr. Praveen Prasennan was instrumental in mobilizing the farmers groups and motivating them to adopt cage farming in the backwaters of Kayamkulam.

*(Reported by Vizhinjam Research Centre)*



*Launch of fish cages in backwaters of Kayamkulam*



## Successful production of hybrids of Black ocellaris and Percula clownfish

The hybridisation between Percula clownfish and Black ocellaris clownfish was achieved by a team of scientists at Mandapam Regional Centre. This is the first report of production of hybrids between female *Amphiprion percula* (Percula clownfish) and male *Amphiprion ocellaris* (Black ocellaris clownfish). Monogamous pair formation was achieved in the brood stock holding section fitted with Recirculatory Aquaculture System (RAS) and photo-thermal regulations. Special brood stock

diets such as chopped clam meat and shrimp meat was given *ad libitum*. The pair started egg laying after one month of holding and conditioning in the broodstock tank. The substratum provided was white ceramic tiles. The incubation period ranged from 8-9 days. Hatched out larvae were fed on live feeds viz, rotifers (*Brachionus plicatilis* and *B. rotundiformis*) with green water technique. The progeny morphotype was similar to that of percula clown initially and later on a small percentage

of the juvenile acquired the colour pattern of false percula. A significant observation was that the hybrids exhibited a higher growth rate compared to their normal counterparts. Furthermore, there was marked difference in the appearance of banding pattern in the hybrids compared to normal percula clown fish.

(Reported by R. Jayakumar, K. K. Anikuttan, G. Tamilmani, M. Sakthivel, P. Rameshkumar, B. Johnson, M. Sankar, Tinto Thomas, Mandapam Regional Centre & A. K. Abdul Nazar, Madras Research centre)

## Advisories to fish farmers to combat extreme climatic events

The experiments on behavioral response and survival of different resources to extreme climatic stresses on water temperature and salinity indicated that, it is advisable for farmers growing pearl spot (*Etroplus suratensis*) to avoid stocking fish seed during summer months. They should take measures to

reduce the farm water temperature by better water circulation and shades. Mussel farmers involved in rack culture were advised to stock the seed only after stabilization of salinity at 25ppt and also to provide shades on the racks to avoid temperature stress. They were also advised to harvest the mussel farm within

12 hours if the salinity in the farm drops to below 25ppt. Similarly harvest should be planned to avoid crop loss if the salinity increases above 35ppt and if the sea water temperature in the farm increases above 34°C.

(Reported by: Fishery Environment Management Division)

## Porcupine ray recorded at Malpe Fisheries Harbour

Two specimens of the porcupine ray, *Urogymnus asperrimus* (Bloch & Schneider, 1801) were reported from Malpe Fisheries Harbour, Karnataka, on 9<sup>th</sup> April, 2019. The mature male and female specimens had a disc width (DW) of 940 mm and 950 mm respectively. They were found in encircling gillnets locally called as "Jeppu bale" operated at a distance of ~20-25 km from the coast. The distribution, biology and ecology of this species are poorly-known and it is categorized as "Vulnerable" in version 2016.1 of the IUCN Red list of Threatened species. It is also protected under schedule I of the Indian Wildlife (Protection) Act of 1972. The earlier report of this species from the region was in May, 2014 when a single female measuring 430 mm DW was landed in Mangalore Fisheries Harbour.

(Reported by: G.B. Purushottama, K.M. Rajesh, Sujitha Thomas and C.G.Ulvekar)



Porcupine ray landed at Malpe Fisheries Harbour

## Under water survey reveal corals diversity

Mulki rocks (13°11'47.0"N 74°40'22.6"E) are stony stretches in the coastal waters of Karnataka. An underwater survey conducted for the understanding the biodiversity of the region revealed the presence of hard corals, ornamental fishes, gastropods, bivalves, sea cucumbers, sea urchins and seaweeds. Hard corals of the genus *Tubastraea* and *Porites* were observed in the site. 19 species of ornamental fishes were identified with Regal demoiselle, *Neopomacentrus cyanomos*, as a dominant species. A survey conducted in coral reef beds of Netrani Island as a part of the in-house project 'Assessment of resilience potential of coral reefs' has identified the presence of table coral, *Acropora* sp. which is the first



*Acropora* sp. noticed during coral survey in Netrani Island

record of *Acropora* sp. from this region.

(Reported by Divya Viswambharan, Mangalore Research Centre)

## Incidental stranding of Whale shark at Thoothukudi

Whale shark, *Rhincodon typus* was found washed ashore at Inigo nagar, Thoothukudi, on 4<sup>th</sup> April 2019. Locally called as "Ammani uluval" it was 574 cm long weighing approximate 1.5 tonnes. The morphometric and external diagnostic features of the stranded specimen were recorded. The Tamil Nadu state veterinary assistant surgeons conducted post-mortem analysis after which the specimen was buried under the guidance of officials from Gulf of Mannar Biosphere Reserve Trust (GOMBRT) and State Forest Department.

## Training Programmes

### Training in Grow-out farming of marine crabs

Tuticorin Research Centre of ICAR-CMFRI in collaboration with the Gulf of Mannar Biosphere Trust (GOMBRT), Thoothukudi organised a training programme on techniques in Grow-out farming of marine Crabs at Palayakayal village during 2-4 May, 2019. Attended

by 25 trainees the programme included theory and practical sessions on various topics of seed production, grow out design and fabrication of cages, feed formulation and disease management. Dr. P.P. Manojkumar, Scientist in-Charge of the Centre welcomed the gathering.

Dr. L. Ranjith, Mr. C. Kalidas and Mr. D. Linga Prabu, led the technical sessions. Shri. Raghuvaran Rajesh, Forest Range Officer, Forest Department and Zonal In-charge distributed certificates to the participants.



Trainees at the Tuticorin Research Centre



## Training programme on estimation of marine fish landings

A five-day training programme on application of advanced methods and tools to improve estimation of marine fish landings of Tamil Nadu was conducted at Madras Research Centre during 6-10, May 2019. It formed a part of the funded project Fisheries Management for sustainable Livelihood (FIMSUL - II, Component - III) Estimation of Marine fish landings in Tamil Nadu with enhanced sampling coverage operated for the benefit of the officials of Department of Fisheries, Government of Tamil Nadu. The training comprised exposition methodology, software, application of Enmeen App, analysis and estimation, hands-on sessions on estimation procedure, tips of various resource identification (Molluscan, Demersal, Pelagic and Crustacean). The sessions were handled by Dr. J. Jayasankar, Nodal Officer of FIMSUL-II,



*Distribution of certificates to trainees*

Component - III, Dr. M. Sivadas, Dr. P. T. Sarada, Dr. Shoba Joe K Kizhakudan, Dr. E. M. Chhandaprajnadarsini, Mr. D. Pugazhendi, Mr. V. Joseph Xavier and Mr. N. Rudhramurthy.

## Training programme on climate change

The Tuticorin Research Centre hosted a training for bank officers on 18<sup>th</sup> June 2019 as a part of the training programme on climate change carried out by the National Bank Staff College (NBSC), Lucknow, a training establishment of National Bank for

Agriculture and Rural Development (NABARD). The programme was attended by 28 officers from NABARD and staff of National Bank Staff College. Dr. P. P. Manojkumar, Scientist-in-charge, Tuticorin Research Centre of ICAR-CMFRI welcomed the gathering. Mr.

Sushrut V. Sardesai, Principal, NBSC Lucknow, Mr. S. K. Jahagirdar, Faculty Member, NBSC Lucknow offered felicitations. Dr. I. Jagadis, Principal Scientist, Dr. L. Ranjith, Mr. C. Kalidas and Mr. D. Linga Prabu, delivered lectures on various topics.

## Training programme on Open sea cage farming and Mariculture

Three days training programme on 'Open Sea Cage Farming and Mariculture' was successfully conducted by Calicut Research Centre under the NFDB Skill Development Programme. for the beneficiaries of Kozhikode district at Anapara (Atholi, Kozhikode) from 29<sup>th</sup> to 31<sup>st</sup> May 2019. A total of 28 fishermen

from Kozhikode district participated in the training programme which gave a Hands-on training on cage fabrication & installation. Dr. Pradeep P. K., SMS (Fisheries), KVK, Peruvannamuzhi, Kozhikode; Dr. P. K. Asokan, Dr. Imelda Joseph, and Dr. Shilta M. T. of ICAR-CMFRI delivered lectures on site

selection, species selection, feed management, disease management, stocking of fingerlings in cages and cage maintenance and integrated multi-trophic aquaculture. Mr. Raveendran, Panchayath President, Atholi distributed the certificates to participants.

The Puri Field Centre of ICAR-CMFRI conducted a field day on open sea cage farming of fin fish during 1<sup>st</sup> June 2019 for the Bhumija tribal fisher community in the Jugadih village, Balasore, Odisha under the TSP programme of the Institute. 17 fishermen actively participated in the programme.

## Stakeholders' Meeting held

Stakeholders' Meeting were held in Headquarters and regional research centres prior to the Institute Research Committee (IRC) meeting. Salient research findings related to marine fishery resources and their fisheries were presented before stakeholders to elicit their views. At the Karwar Research Centre on 6<sup>th</sup> June, 2019, 47 stakeholders from various sectors including State government officials from Govt. of Karnataka, cage fabricators, fishers and fish farmers from Uttar Kannada and Dakshina Kannada districts participated. Veraval Regional Centre conducted same on 7<sup>th</sup> June, 2019 with members of

fishers' communities, boats owner association, processing units, agencies like MPEDA, EIA, CIFT, Dept of Fisheries,

NFF, Indian Coast guard and Reliance Foundation attending.



Stakeholder workshop at Veraval Regional Centre

## International Yoga Day celebrated

The International Yoga Day was observed on 21<sup>st</sup> June at Headquarters in Kochi and various Regional Research Centres. Mr. Balakrishnan Menon, an eminent yoga trainer of the Art of Living Foundation, Bangalore, was the chief guest of the workshop at the Headquarters. He said that yoga is union of body, breath and mind which is highly helpful to improve physical and mental health and yoga practices have got a wide exposure and increased popularity with the Government of India actively supporting the initiatives ensuring a massive participation on special occasions like the International Yoga Day. Shri Balakrishnan Menon and Smt. Smitha K, ICAR-CMFRI led the yoga training session. Dr. T. V. Sathianandan, Head, Fishery Resources Assessment Division presided over the function. Dr. V. Kripa, Head, Fishery Environment and Management Division



and the President, Staff Recreation Club co-ordinated the programme. At Mangalore Research Centre the programme started with reading of message on the importance of yoga in everyday life from the booklet on common yoga protocols published by the Ministry of Ayush, Government of India. This was followed by the practice session in which staff actively participated. Yoga master Shri Stalin Rathnasamy was invited

for International Yoga day celebration at Tuticorin Research Centre. Instructors from Vivekananda Kendra, Chennai gave the presentation and demonstration of Yoga at Madras Research Centre. Prof (Dr) T. N. Vijayakumar, a well known Yoga expert, was the Chief Guest at the function organised on the occasion by Calicut Research Centre and demonstrated different yoga postures which can be easily practised daily.





### Hindi Incentive Scheme prizes distributed

Under Hindi Incentive Scheme of Government of India for doing original work in Hindi, 6 participants were given prizes for their work during the period 2017-18. The winners were Mr. Sunil A. T., Assistant, Establishment

Section; Ms. Smitha K., Personal Assistant, PME Cell; Ms. Prasannakumari, Senior Technician, Library & Documentation Centre; Ms. Dhanya M. B., Stenographer Gr.III; Ms. Preethy Udayabhanu, Skilled Supporting Staff,

Hindi Section and Ms. V. Jayalakshmi, Assistant, Audit & Accounts Section. The prizes were handed over to the winners by Dr. A. Gopalakrishnan, Director, and Mr. C. Muralidharan, Chief Administrative Officer, ICAR-CMFRI.



*Prizes for original work done in official language, Hindi awarded to Mr. A. T. Sunil, Ms. Smitha, Ms. Prasannakumari and Ms. Preethy*

### Workshops conducted

To encourage staff members to do their work in Hindi a workshop on "Official Hindi and Spoken Hindi" was organized at Headquarters on 11<sup>th</sup> April, 2019. A Hindi workshop on "Usage of Noting in Hindi" was organised at Karwar Research Centre on 29<sup>th</sup> June, 2019.

### Official Language inspection

Dr. Pravin P., Assistant Director General (Marine Fisheries) inspected the Official Language activities of the Institute on 27<sup>th</sup> April, 2019.



Madras Research Centre of ICAR-CMFRI participated in the Asia Pacific Aquaculture 2019 at India Trade Centre, Chennai during 19-21 June 2019.



Former Director of ICAR-CMFRI, Prof. (Dr.) M. J. Modayil with Dr. A. Gopalakrishnan, Director in the exhibition stall of the institute

## Visitors

Dr. P. Pravin, Assistant Director General, Fisheries Division (Marine), ICAR, New Delhi, visited Mangalore Research Centre on 27<sup>th</sup> April, 2019 and interacted with staff. During his visit to Karwar-Research Centre of ICAR-CMFRI during 1<sup>st</sup> to 2<sup>nd</sup> May, 2019, he visited various open water cage culture sites at Nagnathwada, Karwar and interacted with the farmers. The activities of the Official Language Implementation Committee (Hindi) of the Centre were also reviewed.

Dr. B. Meenakumari, Former DDG, (Fisheries), ICAR visited the Mangalore Research Centre on 20<sup>th</sup> May, 2019.



Dr. P. Pravin, ADG, ICAR at Karwar Research Centre



## Sale of Pearls spot seeds through KVK commenced

The Ernakulam KVK of ICAR-CMFRI commenced sale of Pearls spot fish seeds through its sales counter since June 2019. The first sale distributed 10,000 seeds worth 1.14 lakhs. The seeds produced at farmer fields that are recognized as KVK's Satellite Production Centres (SPC) and is an important source of income to the partner farmers. KVK has developed 15 such SPCs in Ernakulam district of Kerala.



Packed pearls spot seeds

## KVK sets up homestead units to produce quality eggs

KVK has set up poultry units in selected homesteads of Narakkal grama panchayath to create a model that produce quality eggs and supplies to city consumers in attractive packets. The poultry units consisting of improved cages, layer poultry birds and feeds were distributed to farmers by Dr. A. Gopalakrishnan, Director, ICAR-CMFRI, Kochi on 29<sup>th</sup> May 2019. The funding for

the units was provided by ICAR-Central Plantation Crops Research Institute, Kasaragod under its Scheduled Caste Sub Plan. The 45 units distributed in the initial phase are expected to produce one lakh eggs per year that would be supplied through the Farm Shoppe of KVK functioning at ICAR-CMFRI.

Poultry units distributed by KVK



## Programme participations

- **Dr. A. Gopalakrishnan**, Director participated in the 52<sup>nd</sup> Council Meeting of AFS Society 35<sup>th</sup> Anniversary and 12<sup>th</sup> Asian Fisheries and Aquaculture Forum at Iloilo, Philippines from 8<sup>th</sup> to 12<sup>th</sup> April, 2019.

Attended the National Mariculture Policy presentation at New Delhi on 13<sup>th</sup> May, 2019.

Attended the meeting to present Blue Economy WG-III Final Report in the NITI Aayog at New Delhi on 16<sup>th</sup> and 17<sup>th</sup> May, 2019.

Attended the State Fisheries Management Council meeting at Secretariat Office, Thiruvananthapuram on 27<sup>th</sup> May, 2019.

Attended 9<sup>th</sup> Asian Pacific Aquaculture 2019 as Chair of a Session at Chennai during 18<sup>th</sup> to 22<sup>nd</sup> June, 2019.

Attended meeting with Fisheries Minister, Govt. of India, New Delhi on 25<sup>th</sup> June, 2019.

- **Dr. Prathibha Rohit**, attended Compliance Committee (CCI 6) Meeting and 23<sup>rd</sup> Session (S23) Meeting of Indian Ocean Tuna Commission (IOTC) held

at Hyderabad during 9-10 and 17-21 June 2019 respectively.

- **Dr. P. Laxmilatha** and **Dr. R. Narayanakumar** attended the Final Project Review Meeting of FIMSUL-II with World Bank Expert, Department of Fisheries, Government of Tamil Nadu, on 22<sup>nd</sup> May, 2019.
- **Dr. R. Narayanakumar**, attended the workshop on 'Role of S&T institutions in the Promotion of Entrepreneurship and Sustainable Livelihood in Rural Areas through Fisheries Sector', organized by National Institute of Rural Development and Panchayati Raj (NIRDPR) and National Fisheries Development Board (NFDB), Hyderabad on 14<sup>th</sup> May 2019 and made a presentation on the topic 'ICAR-CMFRI Technologies for promotion of entrepreneurship and sustainable livelihood in rural areas'.
- **Dr. Shubhadeep Ghosh**, SIC Visakhapatnam Regional Centre, participated in a Mid-Term Review meeting held at ICAR-CIFRI, Barrackpore on 12<sup>th</sup> June 2019.

- **Dr. Anulekshmi Chellappan**, SIC, Mumbai Research Centre participated in meetings of Maharashtra Coastal Zone Management Authority (MCZMA), on 24<sup>th</sup> April, 2019 and 24<sup>th</sup> May, 2019.

Attended meetings with executive Director, Mangrove & Marine Biodiversity Conservation foundation of Maharashtra and Additional Principal Chief Conservator of forests, Mangrove Cell, Mumbai on 27<sup>th</sup> and 30<sup>th</sup> May, 2019.

Attended Consultative Meeting at Fishery Survey of India (FSI), Sassoon Dock on 17<sup>th</sup> May, 2019.

- **Dr. Anulekshmi Chellappan**, **Mr. Ajay D. Nakhawa**, **Santosh N. Bhendekar** and **Dr. Nilesh Pawar** attended meeting with Shri Sushil Kumar, I.A.S., Additional Secretary (DARE) & Secretary (ICAR) regarding review of ICAR institutions in Mumbai at ICAR-CIFE, Mumbai on 30<sup>th</sup> April, 2019.
- **Dr. N. Aswathy** attended the 12<sup>th</sup> Asian Fisheries and Aquaculture Forum (12AFAF), Iloilo City, Philippines from 8 to 12<sup>th</sup> April 2019.

PROMOTIONS				
Name & Designation	Promoted as	Centre	w.e.f	
Mr. N. Viswanathan, ACTO (Civil)	Chief Technical Officer (Civil)	ICAR-CMFRI, Kochi	13.02.2018	
Mrs. E. K. Uma, ACTO (Hindi Translator)	Chief Technical Officer (Hindi Translator)	ICAR-CMFRI, Kochi	29.06.2018	
Mr. V. A. Kunhikoya, Senior Technical Officer	Assistant Chief Technical Officer	Calicut Research Centre	26.06.2017	
Dr. M. P. Paulton, Senior Technical Officer (Trg.)	Assistant Chief Technical Officer (Trg.)	ICAR-CMFRI, Kochi	01.10.2017	
Mr. I. Mendonza Xavier, Senior Technical Officer (Draughtman)	Assistant Chief Technical Officer (Draughtman)	Mandapam Regional Centre	22.05.2018	
Mr. K. N. Muraly, Personal Assistant	Private Secretary	ICAR-CMFRI, Kochi	01.06.2019	
Mrs. P. M. Geetha, Technical Officer (Museum) (Retd.)	Senior Technical Officer	ICAR-CMFRI, Kochi	01.07.2017	
APPOINTMENTS				
Name	Designation	Centre	w.e.f	
Mr. Digambhar Suresh Kumbhar	Technician	Ratnagiri Field Centre	11.01.2019	
Ms. Sini M. B.	Technician	Madras Research Centre	14.01.2019	
Mr. Vishnu P. G.	Technician	Cuddalore Field Centre	14.01.2019	
Mr. Mahendra Pandit Sonawane	Technician	Ratnagiri Field Centre	17.01.2019	
Mr. Sonara Yogesh Zinabhai	Technician	Alibag Field Centre	21.01.2019	
Mr. Prakash Chandra Das	Technician	Puri Field Centre	21.01.2019	
Ms. Renuka K.	Technician	Visakhapatnam Regional Centre	22.01.2019	
Ms. Sruthi N. S.	Technician	Tuticorin Research Centre	23.01.2019	
Mrs. Ambily M. N.	Technician	Madras Research Centre	22.01.2019	
Mr. Sineesh Ambi	Technician (Motor Driver)	KVK of ICAR-CMFRI	01.02.2019	
Mr. Binoop C. S.	Technician (Motor Driver)	KVK of ICAR-CMFRI	02.02.2019	
Mr. Ajay Kumar Parida	Technician	Puri Field Centre	08.02.2019	
Ms. Menaka Das	Technician	Visakhapatnam Regional Centre	20.03.2019	
TRANSFER				
Name & Designation	From	To	w.e.f.	
Mr. V. Jayapradeep, Skilled Support Staff	Mandapam Regional Centre	Kovalam Field Lab	27.05.2019	
Mr. Midhun Muthayan, Skilled Support Staff	Madras Research Centre	Mandpam Regional Centre	04.06.2019	
INTER-INSTITUTIONAL TRANSFER				
Name & Designation	Promoted as	From	To	w.e.f.
Mr. C. Muralidharan, CAO	Joint Director/Registrar	ICAR-CMFRI, Kochi	NAARM, Hyderabad	10.05.2019 AN
RESIGNATION				
Name	Designation	w.e.f	Centre	
Mr. Vishnu B.	Skilled Support Staff	16.05.2019	ICAR-CMFRI, Kochi	
DEPUTATION				
Name & Designation	From	To	w.e.f	
Mrs. Remya T.R., UDC	ICAR-CPCRI, Kasaragod	ICAR-CMFRI, Kochi	03.06.2019	
MEETINGS HELD				
Research Advisory Committee (RAC) Meeting was held during 11 <sup>th</sup> - 12 <sup>th</sup> March, 2019 at ICAR-CMFRI, Kochi				
The 26 <sup>th</sup> Institute Research Council ( IRC Meeting) was held during 12 <sup>th</sup> -15 <sup>th</sup> June, 2019 at ICAR-CMFRI, Kochi				



## RETIREMENTS ON SUPERANNUATION



**Mr. K. M. Venugopalan**  
Senior Technical Officer  
30.04.2019  
ICAR-CMFRI, Kochi



**Mrs. N. C. Saroja**  
Assistant  
30.04.2019  
Visakhapatnam Regional Centre



**Mr. Prabhakar Sankar Salvi**  
Senior Technician  
30.04.2019  
Mumbai Research Centre



**Mr. A. V. Joseph**  
Comptroller  
31.05.2019  
ICAR-CMFRI, Kochi



**Mr. P. K. Harikumar**  
Assistant Chief Technical Officer  
31.05.2019  
ICAR-CMFRI, Kochi



**Mrs. N. R. Lethadevi**  
Private Secretary  
31.05.2019  
ICAR-CMFRI, Kochi



**Mr. S. Satyanarayan V. Pai**  
Technical Officer  
31.05.2019  
Karwar Research Centre



**Mr. B. B. Chavan**  
Technical Officer  
31.05.2019  
Mumbai Research Centre



**Mrs. K. P. Shylaja**  
Assistant  
31.05.2019  
Calicut Research Centre



**Mr. C. K. Sivadas**  
Assistant  
31.05.2019  
ICAR-CMFRI, Kochi



**Mr. B. Babu**  
Skilled Support Staff  
31.05.2019  
Vizhinjam Research Centre



**Mr. Vanvi Jayanthilal Dayabhai**  
Technical Officer  
30.06.2019  
Veraval Regional Centre



**Mr. S. Tatabhai**  
Technical Assistant  
30.06.2019  
Narsapur Field Centre



**Mrs. Ashlesha Ashok Sawant**  
Assistant  
30.06.2019  
Mumbai Research Centre

## OBITUARY



**Mr. Dickson Jebaraj**  
Assistant  
08.04.2019  
Tuticorin Research Centre

**Mrs. Rincy K. R.**  
Stenographer Gr.III  
11.05.2019  
ICAR-CMFRI, Kochi





*Demonstration of fish culture in low saline, open water cages in Karwar*



## cadalmin

CMFRI Newsletter

Cadalmin, the CMFRI Newsletter is a quarterly publication of the Central Marine Fisheries Research Institute, Kochi. The publication gives an insight into the major events of the quarter, besides highlighting the salient findings in the research front and dissemination of technological know-how to the farming community.