



भाकृ अनुप
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Business Incubation Centre Inaugurated at CIFT, Cochin / के मा प्रौ सं, कोचिन में व्यवसाय उद्भवन केन्द्र का उद्घाटन

The Business Incubation Centre established at CIFT, Cochin under the project Zonal Technology Management - Business Planning and Development (ZTM-BPD) Unit was inaugurated by Dr. S. Ayyappan, Secretary, DARE and Director General, ICAR on 5 April, 2012. Dr. Ayyappan was of the opinion that development of innovative technologies and commercialization of them is the need of the hour. He hoped that the Business Incubator Centre established at different parts of the country like the one at CIFT will lead the way for taking the developed facilities to the end users. About 40 technologies have already been

क्षेत्रीय प्रौद्योगिकी प्रबंध-व्यवसाय नियोजन एवं विकास (क्षे प्रौ प्र - व्य नि वि) यूनिट के अधीन के मा प्रौ सं, कोचिन में स्थापित व्यवसाय उद्भवन केन्द्र का उद्घाटन डॉ. एस. अय्यप्पन, सचिव कृ अनु शि वि और महानिदेशक, भा कृ अनु प द्वारा 5 अप्रैल, 2012 को किया गया। डॉ. अय्यप्पन इस केन्द्र उद्घाटन के समय विचार व्यक्त किए कि नवोन्वेषण और उपलब्ध प्रौद्योगिकियों का समाकलन समय की मांग है; इस के लिए के मा प्रौ सं, कोचिन जैसे कृषि उद्भवन केन्द्र देश की अगुआई करना चाहिए। करीब 40 प्रौद्योगिकियाँ देश भर में स्थापित 10 व्य नि वि यूनिटों द्वारा भा कृ अनु प प्रणाली में पहले ही व्यवसायीकरण किए गए हैं। के मा प्रौ सं, कोचिन में इस व्यवसाय उद्भवक व्यवस्था



Dr. S. Ayyappan delivering the address after inaugurating the Business Incubation Centre at CIFT, Cochin. Also seen are Dr. Leela Edwin, Shri Anwar Hashim, Dr. K. Gopakumar, Dr. Bangali Baboo, Dr. T.K. Srinivasa Gopal, Dr. B. Meenakumari, Dr. S. Mauria, Dr. G. Syda Rao and Dr. C.N. Ravishankar

केन्द्रीय मात्स्यकी प्रौद्योगिकी संस्थान

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Ceremonial breaking of coconut by DG, ICAR to inaugurate the Incubation Centre



Dignitaries posing for a snap after the inauguration of the Incubation Centre

commercialized in the ICAR system through 10 BPD units set up all over India. The Business Incubator facility at CIFT, Cochin is a 'One-Stop-Shop' for budding entrepreneurs. About 100 such incubators will be set up by the 12th Plan period. The ICAR scientists are presently on a 'Farmer First' drive devoting 25% of their time for farmer-friendly technologies. Secondary agriculture is gaining momentum in the ICAR system in which CIFT is a pioneer by introducing the production of chitin and chitosan from prawn shell waste about 30 years back. Dr. Ayyappan also released a new nutraceutical product named 'OPex' developed by the Biochemistry and Nutrition Division, CIFT from Oyster Peptide Extract and a book on novel seafood recipes that can be prepared from oyster.

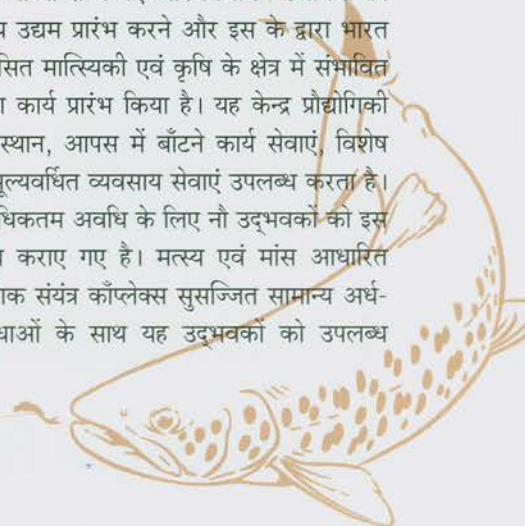
Delivering the Presidential address Dr. T.K. Srinivasa Gopal, Director, CIFT informed that the Institute helped in setting up India's first "Zero-waste" fish processing industry at Shri Sulthan Singh's Unit at Karnal in Haryana. Dr. B. Meenakumari, Deputy Director General (Fisheries), ICAR and Dr. Bangali Baboo, National Director, NAIP, ICAR also spoke on the occasion. Felicitations were offered by Dr. G. Syda Rao, Director, CMFRI, Cochin, Dr. S. Mauria, Assistant Director General (IP&TM), ICAR, New Delhi, Dr. K. Gopakumar, Former Deputy Director General (Fisheries) and Shri Anwar Hashim, Vice President, MPEDA, Cochin. Dr. Leela Edwin, Principal Scientist & PI, ZTMU, CIFT welcomed the participants. Dr. C.N. Ravishankar, Principal Scientist & PI, BPD, CIFT proposed the vote of thanks.

The Incubation Centre started functioning at CIFT with the aim of supporting new and existing entrepreneurs to start successful business ventures and thereby commercializing the potential technologies in the field of fisheries and agriculture developed by ICAR institutes in India. The Centre provides an integrated package of technology, work space, shared office services, specialized equipment and value added business services. At present, the office facilities are made available to nine incubatees for a maximum period of three years. A Pilot Plant Complex with the state-of-the-art generic semi-commercial production facilities for fish and meat based products is also made available to the incubatees.

उदीयमान उद्यमियों के लिए एक (वन-स्टोप-शोप) है। 12 वीं योजना अवधि में करीब 100 ऐसे उद्भवकों को स्थापित किया जा सकता है। इस समय भा कृ अनु प के वैज्ञानिक 'किसान पहले' अभियान में किसान-अनुकूल प्रौद्योगिकियों के लिए अपना 25% समय दे रहे हैं। भा कृ अनु प में पूरक कृषि जोर पकड़ रही है जिस में के मा प्रौ सं झींगा कवच रद्दी से कार्डीटिन एवं कार्डीटोसिन के उत्पादन के प्रवेश द्वारा करीब 30 वर्षों पहले से पथप्रदर्शक है। डॉ. अय्यप्पन शुक्ति पेटेटड सार से के मा प्रौ सं द्वारा विकसित 'ओपेक्स' नामक नए उत्पाद एवं शुक्ति से तैयार किए जाने वाले नए समुद्रीखाद्य नुस्खे पर भी एक पुस्तक का विमोचन किए।

डॉ. टी.के. श्रीनिवास गोपाल, निदेशक, के मा प्रौ सं अध्यक्षीय भाषण में सूचित किया कि हरियाण के कर्नल में श्री सुल्तान सिंग यूनिट में समुद्री खाद्य उद्योग का देश का पहला "शून्य रद्दी" की स्थापना में यह संस्थान सहायता किया है। डॉ. बी. मीनाकुमारी, उपमहानिदेशक (मात्स्यिकी), भा कृ अनु प और डॉ. बंगाली बाबू, राष्ट्रीय निदेशक, रा कृ नवो प, भा कृ अनु प सम्मानित अतिथि थे। डॉ. जी. सयदा राव, निदेशक, के स मा अनु सं, कोचिन, डॉ. एस. मोर्य, सहायक महानिदेशक (बौ सं एवं माको), भा कृ अनु प, नई दिल्ली, डॉ. के. गोपाकुमार, पूर्व उप महानिदेशक (मात्स्यिकी) और श्री अन्वर हाषिम, उपाध्यक्ष, स उ नि वि प्रा, कोचिन द्वारा आशीर्वचन प्रदान किया गया। डॉ. लीला एड्वीन, प्रधान वैज्ञानिक एवं प्र अ, क्षे प्रौ प्र यु, के मा प्रौ सं उपास्थित का स्वागत की। डॉ. सी.एन. रविशंकर, प्रधान वैज्ञानिक एवं प्र अ, व्य नि वि, के मा प्रौ सं कृतज्ञता ज्ञापित किया।

यह उद्भवन केन्द्र के मा प्रौ सं में नए और विद्यामन उद्यमियों को एक सफलतापूर्वक व्यवसाय उद्यम प्रारंभ करने और इस के द्वारा भारत में भा कृ अनु प द्वारा विकसित मात्स्यिकी एवं कृषि के क्षेत्र में संभावित प्रौद्योगिकियों व्यवसायीकरण कार्य प्रारंभ किया है। यह केन्द्र प्रौद्योगिकी का समेकित पैकेज, कार्य स्थान, आपस में बाँटने कार्य सेवाएं, विशेष प्रयोजन के उपकरण और मूल्यवर्धित व्यवसाय सेवाएं उपलब्ध करता है। इस समय, तीन वर्षों की अधिकतम अवधि के लिए नौ उद्भवकों को इस कार्यालय सुविधाएं उपलब्ध कराए गए हैं। मत्स्य एवं मांस आधारित उत्पादों के लिए एक प्रायोगिक संयंत्र कॉम्प्लेक्स सुसज्जित सामान्य अर्ध-व्यवसायिक उत्पादन सुविधाओं के साथ यह उद्भवकों को उपलब्ध कराए गए हैं।





Dr. S. Ayyappan, DG, ICAR and Secretary, DARE Visits MV Bharat Darshan/डॉ. एस. अय्यप्पन, म नि, भा कृ अनु प और सचिव, कृ अनु शि वि का एम वी भारत दर्शन का दौरा

Dr. S. Ayyappan, Director General, ICAR and Secretary, DARE visited the boat 'MV Bharat Darshan' owned by Manasseri Fishermen Development Co-operative Society, Cochin at Cochin Fisheries Harbour to inspect the power block installed on-board the vessel by CIFT under the Institute project 'Resource specific large mesh purse seine for tuna and large pelagics in the Indian EEZ'. With the installation of the power block, the fishermen are able to haul up the net faster and are able to carry out more sets of operations on the same day which also has resulted in heavy catches.



DG, ICAR inspecting tuna long line branch lines on-board Bharat Sagar

Many purse seine operators have evinced keen interest in installing this hauling devices as this will reduce the labour intensity in the purse seine sector and will also be able to reduce the drudgery of the crew on-board. The operations with the new power block installed in the purse seiner is extremely successful and fish catch has been substantially increased with less effort from the crew members. The new innovative technique is expected to revolutionize the fishery industry.

Dr. Ayyappan also visited 'Bharat Sagar', another vessel belonging to the same Society at Cochin Fishing Harbour, where the Institute has installed a hydraulic tuna long liner winch and setter under the new Institute project on 'Responsible line fishing'. He was impressed with the concept of carrying out research on a participatory approach.

Dr. S. Ayyappan, DG, ICAR and Secretary, DARE Visits ETP Designed by CIFT/डॉ. एस. अय्यप्पन, म नि, भा कृ अनु प और सचिव, कृ अनु शि वि का के मा प्रौ सं द्वारा अभिकल्पित का उ सं का दौरा

Dr. S. Ayyappan, Director General, ICAR and Secretary, DARE visited M/s Mangala Seafoods, Aroor to inspect the performance of the Energy Efficient Effluent Treatment Plant (ETP) designed, developed and installed at the factory. The plant functions as common ETP for three export oriented units, viz., M/s Mangala Sea Products, M/s

डॉ. एस. अय्यप्पन, महानिदेशक, भा कृ अनु प और सचिव, कृ अनु शि वि 'ट्यूणा के लिए संपदा विशेष लम्बे मेरा कोष संपाश और भारतीय वि आ क्षे में लम्बे वेलापवर्ती' संस्थान परियोजना के अधीन के मा प्रौ सं द्वारा जहाज के बोर्ड पर स्थापित पॉवर ब्लाक के निरीक्षण के लिए कोचिन मात्स्यिकी बंदरगाह में मनाशशेरी मछुवा विकास सहकारिता सोसाइटी, कोचिन के भारत दर्शन यान का दौरा किए पॉवर ब्लाक की स्थापना से, मछुवारे

जाल तेजी से खींच सकते और उसी दिन अधिक परिचालन कर सकते है जिस से उच्च शिकार भी हो सकता है।

कई कोष संपाश परिचालक इस कर्षण युक्ति को स्थापित करने के लिए पैनी दिलचस्पी के संकेत दिखाए क्योंकि यह कोष संपाश क्षेत्र में कड़ी महनत को कम करता और बोर्ड पर कर्मदल की कड़ी मज़दूरी को भी काम करने में योग्य है। कोष संपाश में स्थापित नए पॉवर ब्लाक से यह परिचालन अत्यंत सफल थे और कर्मदल के सदस्यों के कम प्रयासों से मत्स्य शिकार में अत्यधिक वृद्धि हुई। यह नया नवोन्वेषी तकनीक मत्स्यन उद्योग में क्रांति उत्पन्न करने की प्रतीक्षा है।

डॉ. अय्यप्पन उसी सोसाइटी की और एक जहाज का कोचिन बंदरगाह में 'भारत दर्शन' का दौरा भी किए, जिस में संस्थान ने द्रवचालित ट्यूणा लम्बी डोरी विंच और सेटर को 'उत्तरदायी डोरी मत्स्यन' संस्थान की नयी परियोजना के अधीन स्थापित किया। वे प्रतिभागिता पहल से अनुसंधान करने की धारणा से प्रभावित हुए।

डॉ. एस. अय्यप्पन, महानिदेशक, भा कृ अनु प और सचिव, कृ अनु शि वि सर्वश्री मंगला सीफूड्स, अरूर का दौरा ऊर्जा कार्यक्षम उपचार संयंत्र (ऊ का सं) इस कारखाने में अभिकल्पित, विकसित एवं स्थापित की क्षमता निरीक्षण के लिए किए। यह संयंत्र तीन निर्यात आधारित यूनिटों जैसे सर्वश्री मंगला सी प्रोडक्ट्स, सर्वश्री भट सॉन्स



ETP at M/s Mangala Seafoods, Aroor



DG, ICAR visiting the ETP

Bhatsons Aquatic Products and M/s Roshan Foods located at the Industrial Development Area, Aroor and has a capacity to treat 3 lakh litres of effluent per day. The treated effluent conform to the norms prescribed by Central Pollution Control Board and State Pollution Control Board.

The process advantages of the Energy Efficient Effluent Treatment Plant are as follows:

- The effluent discharged from the treatment process conform to the norms of CPCB/state PCB's
- The water will be suitable for reuse in the plant
- The land requirement for the treatment plant is very small
- Zero atmospheric pollution and eco-friendly
- Less power consumption
- Ease of operation

The main advantage of the unit is that, it is highly energy efficient. It needs only two numbers of 1Hp motor for its operation. The processors expressed their satisfaction about the performance of the ETP to Dr. Ayyappan.

The ETP installed in the plant of M/s Bhatsons Aquatic Products has been awarded SECOND POSITION by Kerala State Pollution Control Board for the year 2011. The award was conferred to the firm after a detailed visit by a panel of experts appointed by KSPCB. The award was presented to the firm by the Chief Minister of Kerala, Shri Oommen Chandy, at a function held at Thiruvananthapuram on 5 June, 2012 in connection with World Environment Day celebrations.

एक्वाटीक प्रोडक्ट्स और, सर्वश्री रोशन फूड्स जिन्हें अरूर, औद्योगिक विकास क्षेत्र में स्थित प्रतिदिन तीन लाख लीटर बहिःस्त्राव उपचार की क्षमता रखता। यह उपचारित बहिःस्त्राव केन्द्रीय प्रदूषण नियंत्रण बोर्ड एवं राज्य प्रदूषण बोर्ड द्वारा निर्धारित मानदण्डों की पुष्टि करते। इस ऊर्जा कार्यक्षम उपचार संयंत्र के प्रक्रिया फायदे निम्नलिखित के अनुसार हैं:

- इस उपचार प्रक्रिया से निष्कषित बहिःस्त्राव के प्र नि बो/रा प्र नि बो के मानदण्डों की पुष्टि करते
- यह जल इस संयंत्र में पुनः प्रयुक्ति के लिए उपयुक्त है
- इस उपचार संयंत्र के लिए आवश्यक ज़मीन काफी छोटी है
- शून्य वायुमंडलीय प्रदूषण एवं पर्यावानुकूल
- अल्प शक्ति का उपभोग
- आसान परिचालन

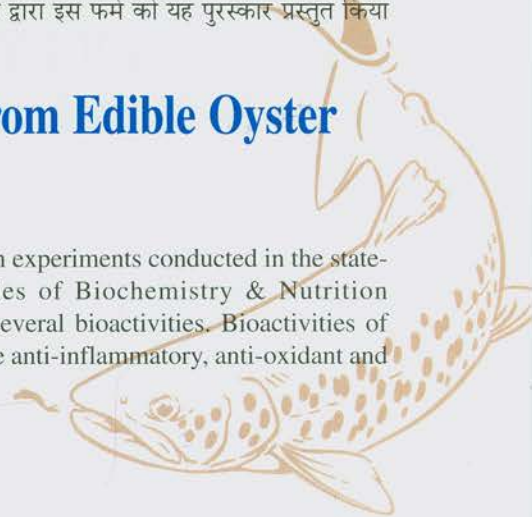
इस यूनिट का मुख्य फायदा है कि, यह अत्यन्त ऊर्जा कार्यक्षम है। इस के परिचालन के लिए केवल दो 1 एच पी मोटरों की आवश्यकता है। संसाधक डॉ. अय्यप्पन को इस का उ सं की क्षमता के बारे में अपने संतोष को प्रकट किए।

सर्वश्री भट सॉन्स एक्वाटीम प्रोडक्ट्स, कोचिन के संयंत्र में स्थापित इस का उ सं को वर्ष 2011 के लिए केरल राज्य प्रदूषण नियंत्रण बोर्ड द्वारा दूसरे स्थान का पुरस्कार प्राप्त हुआ। यह पुरस्कार के रा प्र नि बो द्वारा नियुक्त विशेषज्ञ के पैनल द्वारा विस्तृत दौरा करने के बाद इस फर्म को प्रदत्त किया गया। विश्व पर्यावरण दिवस समारोह के सिलसिले में 5 जून, 2012 को तिरुवनंतपुरम में संपन्न एक कार्यक्रम में श्री औमन चाण्डी, मुख्यमंत्री, केरल के द्वारा इस फर्म को यह पुरस्कार प्रस्तुत किया गया।

Nutraceutical Oyster Peptide Extract (OPex) from Edible Oyster (*Crassostrea madrasensis*)

CIFT, Cochin has developed an edible oyster (*Crassostrea madrasensis*) peptide-based nutraceutical named, OPex. OPex is a 100% natural blend of oyster peptides and oyster protein concentrate that has been

scientifically proven in experiments conducted in the state-of-the-art-laboratories of Biochemistry & Nutrition Division, to possess several bioactivities. Bioactivities of significant mention are anti-inflammatory, anti-oxidant and





anti-bacterial properties. Oysters are a good source of high quality easily digestible protein and essential amino acids of high amino acid score and hence quite beneficial for human health. Increasing consumer knowledge of the link between diet and health has raised awareness and demand for functional food ingredients and nutraceuticals. It is well recognized that apart from their basic nutritional role, many food proteins contain encrypted within their primary structures peptide sequences capable of modulation of specific physiological functions. The peptide extract characterization has been carried out by sophisticated analytical instruments like high performance liquid



Encapsulated Oyster Peptide Extract (OPex)

chromatography (HPLC), LCMS etc. This is the first instance in the country that a peptide-based nutraceutical has been developed from oyster indicating an immense potential that exists in the area of discovering bioactive compounds from marine sources. Further experiments to improve the product are underway and the possibilities of chemical synthesis of the bioactive peptides are being

explored.

The product was officially launched by the Honorable Director General of ICAR Dr. S. Ayyappan in a function held at CIFT Cochin on 5 April, 2012.

News from the Research Front

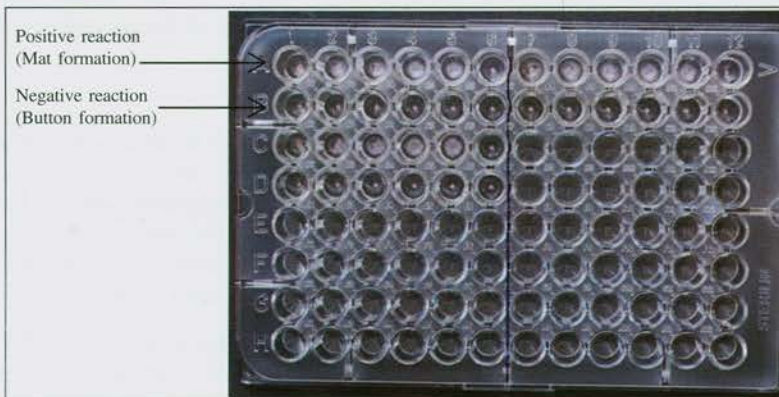
A simple PCR-based method for detection of enterotoxin producing *Bacillus cereus* in shrimp

Bacillus cereus - a Gram positive organism, is the etiological agent of two distinct type of food poisoning in human being viz. diarrheal type and emetic type. Being a spore forming bacteria, it can resist heat treatment and some strains of *B. cereus* are psychrotrophic in nature and can even grow on refrigerated food. Unlike other species of *Bacillus*, *B. cereus* can even grow under anaerobic condition. *B. cereus* food poisoning is very common in many European countries and it was found that 47, 33 and 22% of the total food poisoning cases in Iceland, Norway and Finland, respectively is due to this organism. *Bacillus cereus* is also responsible for 2% of total food-borne illnesses in USA. In India, it has frequently been isolated in varieties of food including seafood samples. The presence of enterotoxigenic *B. cereus* was detected in 29.4% of the seafood samples collected from Cochin. The conventional method of detection of *B. cereus* in food samples involved plating on Polymixin-pyruvate-egg yolk-mannitol-bromocresol purple agar (PEMPA) followed by a series of biochemical tests and it takes almost five days. The pre-formed *B. cereus* enterotoxin in food sample can be detected by using Reverse Passive Latex

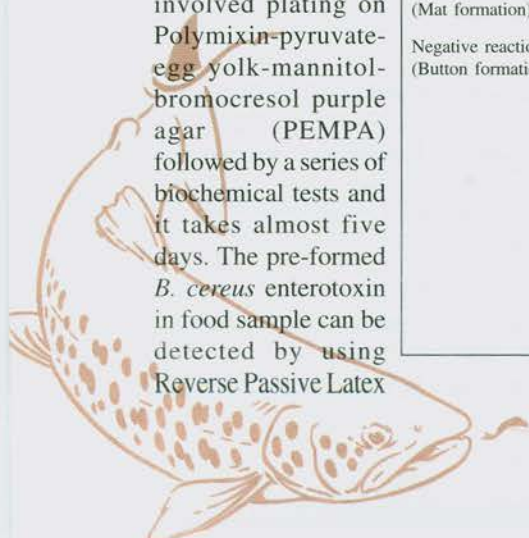
Agglutination test (RPLA) using imported RPLA kit (Oxoid, U.K.). But these kits are mostly very expensive. Moreover, for detection of the presence of enterotoxin producing *B. cereus*, it takes three days to complete. In one previous study, it was observed that there is a relationship between the presence of *hbla* gene and production of diarrheal enterotoxin in case of isolates of *B. cereus* from fishes of tropical environment of Cochin. The present study has been undertaken to develop a simple PCR-based technique for detection of presence of enterotoxin producing *B. cereus* in food.

The white shrimp sample was collected from local market of Cochin. 25 g of the sample was screened for the natural presence of *B. cereus* by conventional method (Plating on PEMPA plate followed by standard biochemical tests) and the sample was found negative for *B. cereus*.

Therefore the sample was used for spiking *B. cereus*. Muscle of white shrimp was divided into four lots (10g each), separately spiked with 100 µl of normal saline containing 10, 100 and 1000 cfu of enterotoxigenic *B. cereus* along with control inoculated with 100 µl of normal

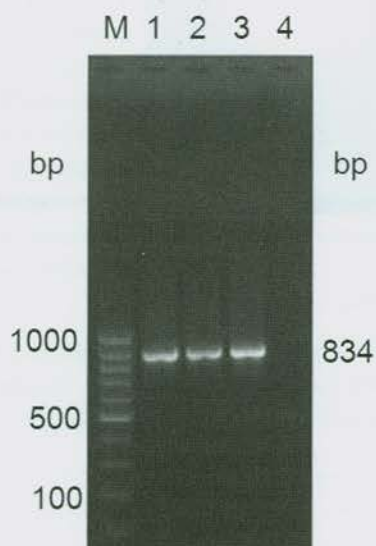


RPLA Test





saline. The spiked sample along with control was macerated with 90 ml of BHI broth and was incubated at 37 °C. After 1 hour of incubation, Polymixin B was added to each macerated broth and the final concentration of Polymixin B was made 15 mg / L and incubated for 18 hrs.



PCR-based on *hbla* gene: Lane M: 100 bp DNA ladder; Lane 1: 10 cfu; Lane 2: 100 cfu; Lane 3: 1000 cfu; Lane 4: Control

Two ml from the overnight enriched broth was centrifuged at 2000 x g for 15 min. to settle the debris. The supernatant was taken in a fresh tube and was centrifuged at 4 °C at 6500 x g for 5 min. The supernatant was used for RPLA test and the pellet was used for preparation of crude DNA for PCR test. The pellet was washed once with sterile normal saline and was suspended in 250 µl of sterile distilled water. It was kept at boiling water bath for 10 min. and was frozen immediately after boiling. After thawing, it was centrifuged at 3000 x g for 2 min. and 5 µl of the supernatant was used as PCR template. *hbla* gene specific primers *hbla* 1 (5'- GCTAATGTAGTTTCACCTGTAGCAAC-3') and *hbla* 2 (5'- AATCATGCCACTGCGTGGACATATAA-3') were used for PCR amplification (Mäntynen and

Lindstrom, 1998). PCR was done in 25 µl reaction mixture, which consisted of 5 µl of template, 2.5 µl 10 X PCR buffer (Fermentas), 10 µM of each primer, 1 U *Taq* DNA polymerase (Fermentas) and 200 µM of each dNTP. PCR reaction condition consisted of an initial denaturation at 95 °C for 5 min. followed by 30 cycles of 94 °C for 30 s, 58 °C for 45 s and 72 °C for 1 min. At the end, the final extension was carried out at 72 °C for 5 min. PCR product was resolved by agarose gel electrophoresis on 1.5% agarose gel containing 0.3 µg /mL ethidium bromide.

RPLA test was also carried out using the supernatant. The supernatant was passed through a 0.22 µm membrane filter to prepare cell-free supernatant. Cell-free supernatant was used for detection of enterotoxin by RPLA test using BCET-RPLA kit (Oxoid, U.K.) as per manufacturer's instructions.

Total eight seafood samples were screened for the presence of enterotoxigenic *B. cereus* after enrichment in BHI broth-using PCR and RPLA methods.

In spiked samples, the detection could be done even at 10 cfu spiking level as evidenced by presence of 834 bp amplified product in PCR assay (Fig. 1). In RPLA test, 1000, 100 and 10 cfu spiking level showed positive to enterotoxin assay as evidenced by mat formation. In seafood samples tested (8 nos.), two samples showed 834 bp amplified product by PCR and were positive for enterotoxigenic *B. cereus*. The same samples were found positive in RPLA also. So, the RPLA test results were in agreement with *hbla* specific PCR detection method.

Detection of *B. cereus* enterotoxin in seafood samples by RPLA is very expensive as it is required to import very expensive kits. But as compared to imported kits, this *hbla* gene specific PCR method is cheap and takes less time. Using PCR assay, detection of enterotoxigenic *B. cereus* is possible within 24 hrs. The PCR assay will detect only enterotoxigenic strains and non-enterotoxigenic strains will be excluded from detection. So, it can be concluded that *hbla* gene specific PCR method can be used as a cheap alternative of RPLA-based imported kit method for detection of enterotoxin producing *B. cereus* in food.

- Dr. Sanjoy Das and Dr. K.V. Lalitha

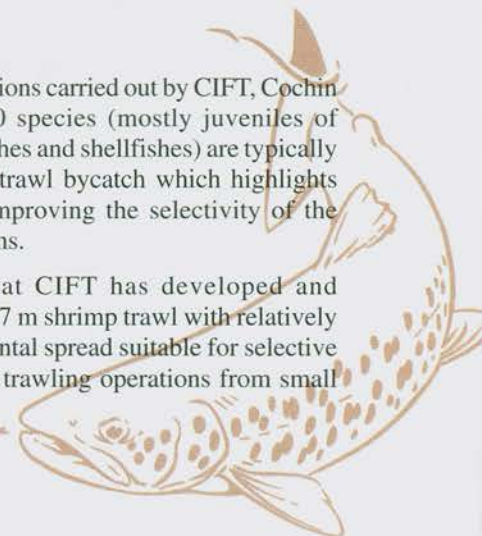
Microbiology, Fermentation & Biotechnology Division, CIFT, Cochin

Short body shrimp trawl to reduce bycatch

Globally, India is the second largest producer of shrimp from capture fisheries contributing about 30% to the global shrimp captured from the wild. Trawling is the most important fishing method for shrimps in India which also contributes to the bulk of demersal species from marine waters. There are about 35,228 trawlers in the size class of 12-17m L_{OA} operating all along the Indian coast. Trawl nets are non-selective and result in landings of huge quantities of juvenile fishes and other non-targeted aquatic organisms, which are often discarded, leading to an irreparable damage

to the ecosystem. Investigations carried out by CIFT, Cochin has shown that about 280 species (mostly juveniles of commercially important fishes and shellfishes) are typically represented in the shrimp trawl bycatch which highlights the imperative need for improving the selectivity of the presently used trawl systems.

The research team at CIFT has developed and successfully field tested a 27 m shrimp trawl with relatively short body and large horizontal spread suitable for selective retention of shrimp during trawling operations from small





mechanized trawlers which are popular in India. The length of the trawl body has been considerably reduced by increasing the taper ratio and the vertical opening of the mouth has been reduced to eliminate bycatch which predominantly consists of non-targeted fishes (Fig. 1 & 2). The relatively better swimming ability of finfishes compared to shrimps help them to counter the short and lower vertical height of trawl and swim out of the net (Fig. 3). Because of the larger horizontal spread of the trawl mouth, the effective sweep area is more, which is an important requirement for an efficient shrimp trawl.

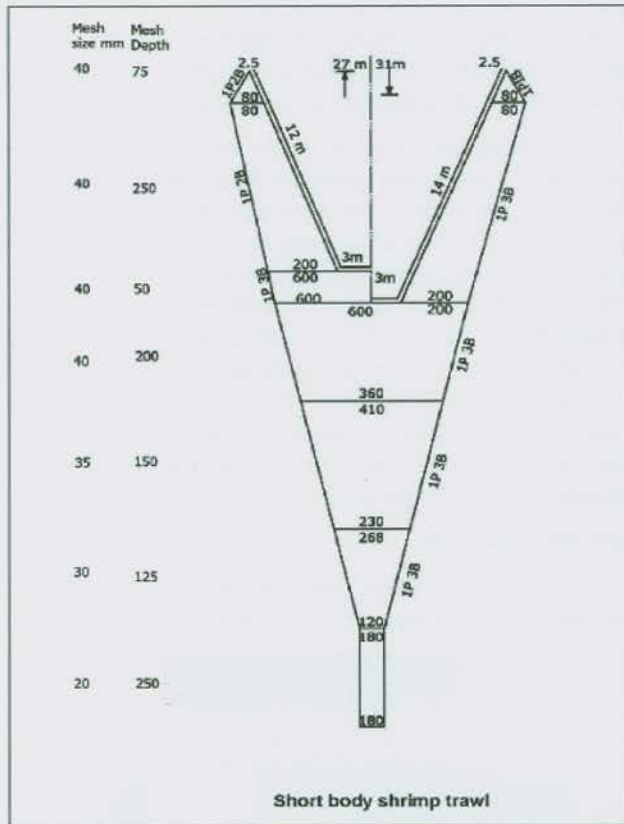


Fig. 1. Design of the 27 m short body shrimp trawl

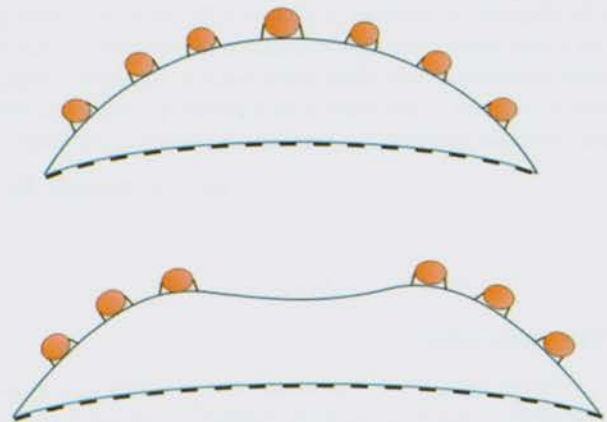


Fig. 2. Buoyancy of the head rope is reduced to limit the vertical opening



Experimental fishing operation using short body shrimp trawl

Trials carried out along the coastal waters off Cochin with a prototype of short body shrimp trawl revealed considerable reduction in the fish catch due to the difference in relative swimming speed and vertical distribution profile of shrimp and finfishes.

The results indicate that there is a significant reduction in the mean catch per unit effort (CPUE $\text{kg} \cdot \text{h}^{-1}$) of non-targeted bycatch which reduced from $9.75 \text{ kg} \cdot \text{h}^{-1}$ to $2.75 \text{ kg} \cdot \text{h}^{-1}$. No significant reduction in the shrimp catch was noticed, when compared to the catches from a commercial trawl design.

Since no major investment is needed for adopting this technology, fishermen

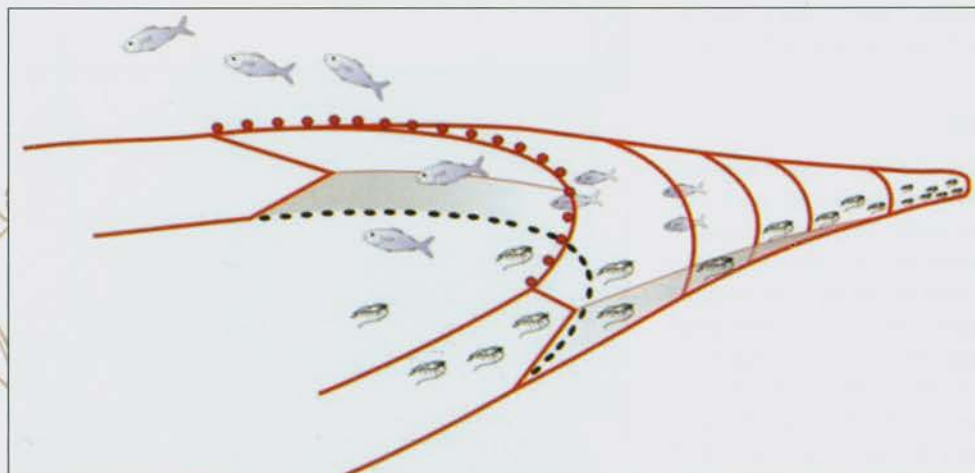


Fig.3. Finfishes escaping from the short body shrimp trawl due to better swimming speed (Artist's perspective)



will adopt the technology as there will be increase in shrimp catch and reduction in bycatch and also reduction in cost of fabrication due to reduction in the material required. Sorting time is reduced as the catch of non-target species is less and this will also increase the productive tow time and help in

fuel saving. It is suggested that the use of selective shrimp trawl nets should be popularized for sustainable fisheries for the long term benefit of conservation of resources and protection of biodiversity.

- **Dr. V.R. Madhu, Dr. M.P. Remesan, Dr. P. Pravin and Dr. M.R. Boopendranath**

Fishing Technology Division, CIFT, Cochin

Box filtration unit for recirculation of water during depuration

Why depuration?

Food safety is a concern for consumers, food processors, and food system regulators because of the multiple health risks from food contaminants. Shellfishes, by virtue of their aquatic habitat concentrate microbiological/chemical contaminants or natural toxins in their gut. As people normally eat raw shellfish without removing the gut, they are likely to get ill, if the product is harvested from contaminated areas. Polluted oysters are made safe for human consumption by a process of purification known as 'Depuration'. The primary purpose of depuration is the removal of microbial contaminants. The process involves placing the harvested oysters in tanks of high quality water so that they purge any contaminants stored in their gut. It is usually undertaken because it is required by regional, national or local legislation but need to be applied by the industry to protect their customers, demonstrate due diligence, or to satisfy the requirements of legislation in other regions or countries in order to be able to export these products.

Why recirculation?

The minimum velocity within a shellfish depuration system is determined by the requirement of oxygen supply to the shellfish. If the velocity of circulation and hence frequency of recreation is too low, then insufficient oxygen will reach the shellfish. On the other hand, too high rate of circulation may result in localized turbulence and re-suspension of particulates. The particulate matter is considered to be hazardous because it may contain viral and bacterial particulates which can be re-ingested by the oysters if re-suspension occurs.

Avoidance of recontamination

A primary requirement for avoiding recontamination during depuration is the operation of a batch "all-in/all-out" system, with no more shellfish being added to the system once the depuration cycle has been started. This is necessary to prevent partially depurated shellfish being contaminated again by the material excreted from freshly introduced shellfish. It also prevents settled faecal material being re-suspended during the addition of further shellfish. It is necessary to use clean seawater both for the primary source of abstracted water, including relevant treatment, where necessary, and if seawater is recycled during a single depuration cycle, or re-used from one cycle to another. It

has been shown that bacterial pathogens may survive in faecal strands and may subsequently be released into the overlying water. It would be expected that survival, and thus the potential for recontamination, would be greater with viruses due to their greater survival in seawater.

An adequate flow of water within the system is necessary to ensure that depurated faeces and pseudofaeces are taken away from the shellfish. At the same time, especially in recirculation systems, the flow must allow adequate settlement of the depurated material. If the flow is too much, the strands of material will be broken up and re-suspended in the seawater. Disinfection systems may not be sufficient to inactivate pathogens before they are recirculated and re-ingested. Therefore, it is absolutely essential to optimize the water flow so that there is a balance between disinfection and removal of depurated material and settling of solid particulate bodies.

Box filtration unit

The box filtration unit designed by the Quality Assurance & Management Division of CIFT is very efficient



Box filtration unit





to filter seawater during depuration process. This unit can perform physical, chemical, and biological filtrations and consists of six layers that facilitate filtration of all contaminants in seawater step by step and this include:

Sponge Layers: Has both smooth and heavy sponge layers. The sponge layer traps particulate matter suspended in the water that is passing through it and functions as a mechanical filter. Biological filtration is provided by the beneficial bacteria living on the sponge. Its mechanical and biological effectiveness is limited, due to the lower amount of oxygen and volume of water drawn through the filter.

Ceramic Ring Filtration: The ceramic rings have a structure of dense holes and harbor beneficial bacterial flora which help improve biological filtration effectively and stabilize water quality. It acts as a nitrates and nitrites remover and permits indirect sedimentation of particles within the pores of ceramic rings. It is durable, non-toxic, and environment friendly.

Ammonia Absorbing Layer: Ammonia absorbing stone is used to eliminate organic impurities in the water. A highly absorptive crushed natural material, it absorbs excrement, ammonia, nitrate, hydrogen sulfide and heavy metals. It also helps in stabilizing the water pH and helps soften water. It is rich in metal oxides which emits oxygen.

Activated Carbon Bed: Activated carbon filtration is effective in removing organic contaminants from water, as they are implicated in producing taste, odor and colour

related issues. Passing water through an activated carbon filter remove contaminants, like hydrogen sulphide, heavy metals (lead, mercury and copper), chlorine and organic compounds.

Gravel: The primary purpose of gravel in a water purification system is to distribute the flow of the incoming water over the entire treatment bed. A stream of incoming water that needs treatment will be forced to flow through the channels between the gravel nuggets filtration. Gravel is gifted by the bacteria living on the large surface area of the substrate that the water is passing through.

Advantages

Box filter unit has many advantages over other conventional filters, ie:

- Cost effective
- Power supply is not required
- Very effective in eliminating toxic metals and organic impurities
- Easy to clean
- Carries physical, chemical and biological filtrations
- Use of non toxic materials
- Easy to operate
- Long lasting

- Dr. Femeena Hassan and Dr. T.V. Sankar

Quality Assurance and Management Division, CIFT, Cochin

Fisheries Profile and Harvest Losses at Reservoir Fisheries - A Preliminary Study at Nagarjunasagar, Andhra Pradesh

A preliminary survey was conducted at Nagarjunasagar reservoir in Andhra Pradesh during July 2012, to study the fisheries profile and to assess the harvest losses. The Nagarjunasagar reservoir is a large impoundment in the river Krishna in Andhra Pradesh. The reservoir extends to Nalgonda and Guntur districts, which are divided by the Krishna. The fishermen belong to backward communities. The peak fishing season is from July to October, though fishing is taking place throughout the year, except on Sundays, which is a weekly off-day, during which purchase of groceries for households, purchase of net materials and repair works of fishing units are carried out.

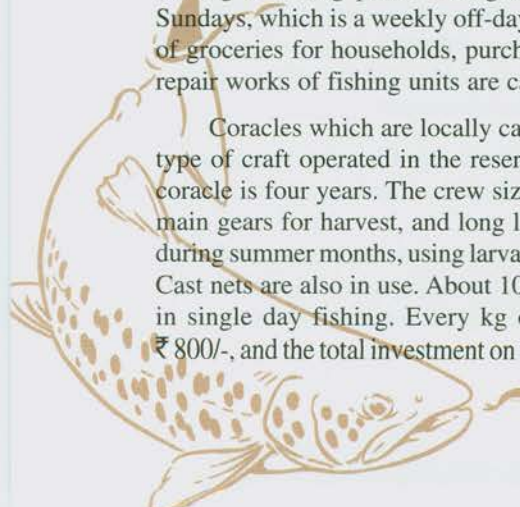
Coracles which are locally called as *Putti* are the only type of craft operated in the reservoir. The mean life of a coracle is four years. The crew size is two. Gillnets are the main gears for harvest, and long lines are sometimes used during summer months, using larvae of dung beetles as baits. Cast nets are also in use. About 100 kg of gillnets are used in single day fishing. Every kg of gillnets costs around ₹ 800/-, and the total investment on 100 kg of gillnets worked

out to be ₹ 80,000/-.

Open access fisheries is in practice, with a half yearly licence fee of ₹ 240/-. They go for single day fishing, and the fishing duration is from 3 pm to 8 am. After setting the gillnets in the evening/night, fishermen take shelter in the



Interaction with fishermen





Craft and gear - Coracles and Gillnets



View of landing centre in Nagarjunasagar

Fish iced and packed in thermocole containers for transportation by rail

banks of the reservoir. At around 4 am, they collect the catches, and land at around 8 am. Ice is not taken, while going for fishing, and fishes are iced only after landing. From remote landing centres, fishes are iced and transported by motorized carrier boats. After this, the catches are iced and packed in thermocole containers and taken to different markets. The average annual production from the reservoir is 90 tonnes. The catch is sold in Guntur, Nalgonda, Mahbubnagar, Renga Reddy, Hyderabad and Krishna districts. They are also sent to Howrah markets through Macherla railway station. The popular commercial fishes are; *Anguilla rostrata* (eel), *Cirrhinus mrigala* (Indian carp), *Labeo rohita* (Rohu), *Labeo calbasu*, *Catla catla*, *Pangasius pangasius* and *Wallago attu*.

The extent of harvest losses at landing centres of the reservoir was assessed as 8 to 10%. The causes were discards of spoiled fishes due to physical damages in entangling, discards of dead fishes in the nets, spoilage due to adverse weather conditions, spoilage due to non-usage of ice,

spoilage due to delay in taking out the already caught fishes from gillnets, etc.

The catches are sold to money lenders at the price dictated by them. They are forced to sell the catches to money lenders, as they have taken loan from money lenders for the purchase of fishing units. Lack of access to institutional finance is a major constraint perceived by them. The other constraints reported were; under stocking, remote landing centres not connected by approach roads, absence of means to market the fish without spoilage due to the poor connectivity, etc. Improving their access to institutional finance, relieving them from the clutches of money lenders, availability of adequate motor boats to quickly transport their catches from remote landing centres/catchment areas, formation of efficient cooperatives and assistance in marketing their catches without spoilage, and at remunerative prices will help to improve the socio-economic status of fisherfolk in Nagarjunasagar.

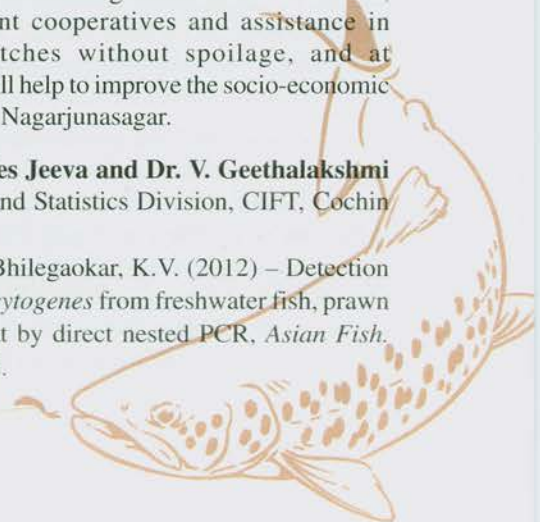
- Dr. J. Charles Jeeva and Dr. V. Geethalakshmi
Extension, Information and Statistics Division, CIFT, Cochin

Publication

Research Paper

Sanjoy Das, Singh, V.P., Ltu, K., Kathiresan, S.,

Sharma, B. and Bhilegaokar, K.V. (2012) – Detection of *Listeria monocytogenes* from freshwater fish, prawn and chicken meat by direct nested PCR, *Asian Fish. Sci.*, **24**: 432-442.





Training Programmes

Cochin

1. Phytochemical screening and immune-modulatory activity of *Ventilago madraspatana* (2 March – 2 April)
2. Antimicrobial effect of chito oligo saccharides produced by bacterial degradation of chitin (6 March – 9 April)
3. Decomposition of shrimp shell waste by microbial deproteination and decalcification (27 March -10 April)
4. Antibiotic resistance profile of *Staphylococcus aureus* (27 March – 10 April)
5. Isolation and molecular characterization of *Shigella* spp. from seafood (6 March – 12 April)
6. Power block aided purse seining (10-13 April)
7. Post harvest processing and value addition in fish (1-3 May)
8. Advanced methods in food processing (7-11 May)
9. Isolation, identification and molecular characterization of *Vibrio parahaemolyticus* from seafood (7 May – 6 June)

10. Characterization of thermostable alkaline protease from marine bacteria (7 May – 6 June)
11. Molecular characterization of *Staphylococcus* spp. (9-23 May)
12. Preparation and quality evaluation of value added products from fish and shellfish (10 May – 10 June)
13. HACCP concepts (14-18 May)
14. Modern analytical techniques in biochemistry (4-16 June)
15. Advanced analytical methods in chromatography (11-16 June)
16. Production of value added products (25-27 June)

Visakhapatnam

1. Laboratory methods for microbiological examination of seafood (28 March – 4 April)

Veraval

1. Microbiological quality of seafood (25-29 June)



HACCP concepts (Cochin)



Laboratory methods for microbiological examination of seafood (Visakhapatnam)



Participants and faculty of training on Microbiological quality of seafood (Veraval)



Hands on training for participants (Veraval)



Outreach Programme

During the quarter as an outreach programme, a training on "Value addition and hygienic handling of dry fish" was conducted by the Institute at Nizampatanam and Kothapalam

villages of Repelli, Guntur district, A.P. during 1-2 April, 2012. Forty fisherwomen attended the training programme.

National Brainstorming Workshop on Gender in Fisheries: A Future Roadmap / मात्स्यिकी में लिंग पर राष्ट्रीय चिंतन कार्यशाला: एक भविष्य मार्गचित्र

A one day National Brainstorming Workshop on "Gender in fisheries: A future roadmap" was held at CIFT, Cochin on 4 April, 2012. The Workshop was chaired by Dr. B. Meenakumari, Deputy Director General (Fisheries), ICAR, New Delhi and Co-chaired by Dr. T.K. Srinivasa Gopal, Director, CIFT, Cochin. In her opening remarks, Dr. Meenakumari highlighted the importance of gender in the global context and mentioned that all over the world, focus is being given to gender in agriculture as well as livestock sectors. In his remarks, Dr. T.K. Srinivasa Gopal outlined the importance of technology in empowerment of fisherwomen and highlighted CIFT's role in capacity building of fisherwomen in various states.

Dr. Nikita Gopal, Senior Scientist, CIFT and Convener of the Workshop presented the Workshop themes. The themes identified for the Workshop were; (i) Assessment of gender roles and analysis of gender issues; (ii) Opportunities and constraints in performing gender roles; (iii) Power and decision making; (iv) Capabilities and vulnerabilities with respect to shocks; and (v) Future strategies for mainstreaming gender towards equity and empowerment. She also presented the Workshop scheme.

This was followed by a Working Group discussion in the forenoon session on the themes (i) to (iv) with the theme (v) being common to all groups. The Working Groups made their presentations in the afternoon session. The groups discussed the issues with respect to the various sectors like

'मात्स्यिकी में लिंग : एक भविष्य का मार्गचित्र' पर एक एकदिवसीय राष्ट्रीय चिंतन कार्यशाला 4 अप्रैल 2012 को के मा प्रौ सं, कोचिन में संचालित की गयी। इस कार्यशाला की अध्यक्षता डॉ. बी. मानाकुमारी, उपमहानिदेशक (मात्स्यिकी), भा कृ अनु प, नई दिल्ली और सह-अध्यक्षता डॉ. टी.के. श्रीनिवास गोपाल निदेशक, के मा प्रौ सं, कोचिन द्वारा की गई। अपनी प्रारंभिक टिप्पणी में, डॉ. मीनाकुमारी वैश्विक संदर्भ में लिंग के महत्व पर प्रकाश डाली और उल्लेख की कि संपूर्ण विश्व में, कृषि के साथ पशुधान क्षेत्र में लिंग को महत्व दिया जा रहन है। अपनी टिप्पणी में, डॉ. टी.के. श्रीनिवास गोपाल और सह-अध्यक्ष मछुवा महिला के सशक्तीकरण में प्रौद्योगिकी के महत्व का खुलासा किया और भिन्न राज्यों में मछुवा महिला की क्षमता निर्माण में के मा प्रौ सं की भूमिका पर प्रकाश डाला।

डॉ. निकिता गोपाल, वरिष्ठ वैज्ञानिक के मा प्रौ सं और कार्यशाला की संयोजिका इस कार्यशाला के मूल विषयों को प्रस्तुत की। इस कार्यशाला के लिए पहचान किए मूल विषय थे; (i) लिंग भूमिका का मूल्यांकन और लिंग मामलों का विश्लेषण; (ii) लिंग भूमिका निष्पादन में अवसर एवं बाधाएं; (iii) अधिकार एवं निर्णय करना; (iv) प्रघात के संबंध में क्षमताएं एवं दोषपूर्णता; और (v) समानता एवं सशक्तीकरण और लिंग सहारे के लिए भविष्य की नीतियाँ। वे इस कार्यशाला योजना को भी प्रस्तुत की।

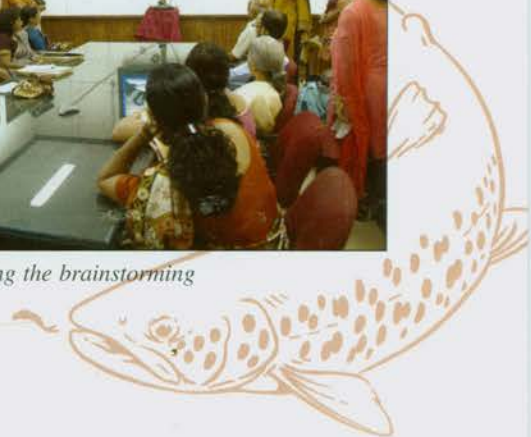
इस के बाद अपराह्न सत्र में कार्य समूह परिचर्चा (i) से (iv) मूल विषय पर और सभी समूहों के लिए (v) मूल विषय सामान्य था। अपराह्न सत्र में यह कार्य समूह अपना प्रस्तुतिकरण किया। यह समूह



Dr. B. Meenakumari offering her introductory remarks



Video conferencing during the brainstorming





marine, inland, aquaculture, coldwater, processing, marketing, education and professionals.

A Video Conferencing was also organized with experts of the Food and Agricultural Organization (FAO) of UN, Rome. Three experts, Dr. Nandini Gunewardene, Gender, Equity and Rural Employment Division, and Dr. Helga Josupeit and Dr. Daniela Kalikoski of FAO Fisheries Department participated. They interacted with the Workshop participants and discussed the themes. They also highlighted the various initiatives being taken globally in agriculture and fisheries in gender mainstreaming like the USAID and the Iceland initiative in Africa. The participants got an overview of the work by FAO in the area of gender.

The session was followed by a general discussion on the Working Group presentations. The session concluded with the remarks from the Chair and Co-Chair. A formal vote of thanks was proposed by Dr. Nikita Gopal. Forty four participants from ICAR Fisheries Institutes, State Agricultural Universities, State Department of Fisheries and NGOs attended the Workshop.

समुद्री, अंतःस्थलीय जलकृषि, शीत जल, संसाधन, विपणन, शिक्षा और पेशा जैसे भिन्न क्षेत्रों के संबंधित समस्याओं पर चर्चा किए।

संयुक्त राष्ट्र संघ के खाद्य एवं कृषि संगठन (एफ ए ओ), रोम के विशेषज्ञों से एक विडीयो सम्मेलन भी आयोजित किया गया। तीन विशेषज्ञ, डॉ. नन्दीनी गुनेवर्धना, लिंग, समदृष्टि और ग्रामीण रोजगार प्रभाग और हेल्गा जोसुपेर और डॉ. डेनीला कलीकोस्मी, एफ ए ओ मात्स्यिकी विभाग भाग लिए। वे इस कार्यशाला के सहभागियों के साथ अन्योन्यक्रिया किए और मूल विषयों पर परिचर्चा किए। वैश्विक तौर पर कृषि और मात्स्यिकी में लिंग समदृष्टि जैसे यूएसड एवं आफ्रिका में आइसलैंड पहल पर लिए गए भिन्न पहलाओं पर भी वे प्रकाश डाले। सहभागियों को लिंग क्षेत्र में एफ ए ओ द्वारा किए जा रहे कार्य का एक सिंहावलोकन किए।

इस सत्र के बाद कार्य समूह प्रस्तुतिकरण पर सामान्य परिचर्चा थी। यह सत्र अध्यक्ष एवं सह-अध्यक्ष की टिप्पणी के द्वारा समाप्त हुआ। डॉ. निकिता गोपाल द्वारा औपचारिक कृतज्ञता ज्ञापन प्रस्तावित किया गया। भा कृ अनु प मात्स्यिकी संस्थान, राज्य कृषि विश्वविद्यालय, राज्य मात्स्यिकी विभाग और गै स सं के चौवालीस सहभागी इस कार्यशाला में उपस्थित हुए।

National Brainstorming Workshop on Harvest and Post Harvest Losses in Fisheries / मात्स्यिकी क्षेत्र में प्रग्रहण एवं पश्च प्रग्रहण क्षति पर राष्ट्रीय चिंतन कार्यशाला

The National Brainstorming Workshop on "Harvest and post harvest losses in fisheries" was held at CIFT, Cochin on 22 June, 2012. Participants from ICAR fisheries Institutes, MPEDA, Cochin, SAUs, and NGOs attended the workshop. The Workshop was chaired by Dr. B. Meenakumari, Deputy Director General (Fisheries), ICAR, New Delhi and Co-chaired by Dr. T.K. Srinivasa Gopal, Director, CIFT, Cochin. Dr. K.K. Singh, ADG (Engg.), ICAR attended as a special invitee.

The Workshop began with the introductory remarks by Dr. B. Meenakumari. In her remarks she mentioned that the fisheries sector has recorded landings of more than 8.4 million tonnes and recorded an overall growth rate of 7%.

"मात्स्यिकी में प्रग्रहण एवं पश्च प्रग्रहण क्षतियाँ" पर राष्ट्रीय चिंतन कार्यशाला के मा प्रौ सं, कोचिन में 22 जून, 2012 को संपन्न हुई। इस कार्यशाला में भा कृ अनु प मात्स्यिकी संस्थानों, स उ नि वि प्रा, कोचिन, रा कृ वि और गै स सं से सहभागी उपस्थित हुए। इस कार्यशाला की अध्यक्षता डॉ. बी. मीनाकुमारी, उपमहानिदेशक (मात्स्यिकी), भा कृ अनु प, नई दिल्ली और सह-अध्यक्षता डॉ. टी.के. श्रीनिवास गोपाल, निदेशक, के मा प्रौ सं, कोचिन द्वारा की गई। डॉ. के.के. सिंह, स म नि (अभियांत्रिकी), भा कृ अनु प विशेष आमंत्रित के रूप में उपस्थित रहे। दो विशेषज्ञ, डॉ. एम. श्रीनाथ, प्रधान वैज्ञानिक (से नि), के स मा अनु सं, कोचिन एवं डॉ. जी.आर. उणिणत्तान, प्रधान वैज्ञानिक (से नि), के मा प्रौ सं, कोचिन भी इस परिचर्चा में भाग लिए।

इस कार्यशाला का प्रारंभ डॉ. बी. मीनाकुमारी द्वारा प्रारंभक टिप्पणी



Dr. B. Meenakumari offering her introductory remarks



Group discussion in progress



The total production from culture has crossed 5.4 million tonnes. Contribution of fisheries to agricultural GDP is 1% and our effort should be to decrease losses. She said that in agriculture it is relatively easy to assess the losses but in fisheries it is difficult and there has not been a concerted effort for this. During the Xth plan period, an NATP on mission mode was conducted by CIFT on harvest and post harvest losses in both marine and inland fisheries. However, focussed effort is needed presently on an all India level. A programme on assessment of harvest and post harvest losses which is sponsored by Ministry of Food Processing, Govt. of India is coordinated by CIPHET, Ludhiana. She added that modalities to take up the work in fisheries can be worked out later. She also mentioned that pooling of available data on losses and mitigation measures from various Institutes can be attempted.

Speaking on the occasion Dr. Srinivasa Gopal expressed his happiness to organize the Workshop in the Institute. He stressed that fish is important in the context of food and nutritional security. Fish is an important source of protein, highly digestible, useful in coronary diseases, and hence preventing loss is very important. The catch that is not suitable for human consumption can be considered as loss. There is a need to convert waste into wealth.

Dr. K.K. Singh made a presentation on the AICRP-PHT done during 2005-07 which was taken up again as per the recommendations of Parliamentary Committee on Agriculture. He presented the objectives, sampling, methodology and analysis of the data collected in the project. He mentioned that it was done for 46 crops and commodity groups. He said that marine and inland fisheries are already included in the project and highlighted the organizations who are involved in carrying out the programme.

Dr. P. Pravin, Senior Scientist, CIFT, Cochin made a presentation on the themes on harvest and post harvest losses which was followed by a brief presentation by Dr. V. Geethalakshmi, Senior Scientist, CIFT, Cochin on the ongoing Institute project on harvest and post harvest losses. There was an extended session of discussion on the presentation with participants expressing their views regarding the sampling as well as methodology in relation to fisheries. During the discussions the participants opined that the causes of the losses ranged from handling losses during unloading, discard of low value fishes and juveniles, physical loss of the harvest due to the inability to bring to shore, lack of infrastructure facilities, and poor handling of the fish at landing centres, pre-processing centres and markets, adverse climatic conditions, insect infestation and attack by birds, animals and rodents during drying, spoilage due to insufficient icing, improper packing and inefficient containers, unreliable transportation, delay in transportation, lack of storage facilities, lack of demand and delay in selling.

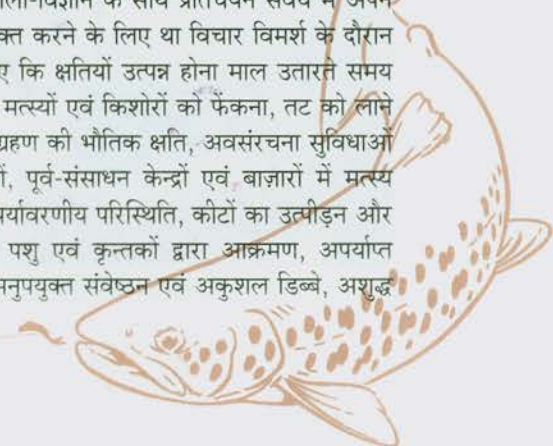
Dr. M. Srinath, Principal Scientist (Retd.), CMFRI, Cochin said that it is very difficult to estimate the harvest

के साथ हुआ। अपनी टिप्पणी में उल्लेखित की कि मात्स्यिकी क्षेत्र 8.4 मिलीयन टन का आवतरण किया और 7% का संपूर्ण वृद्धि को रिकार्ड किया। पालन से कुल उत्पादन 5.4 मिलीयन टन को पार किया। कृषि में मात्स्यिकी का योगदान 1% है और हमारे प्रयास क्षति को काम करने के होने चाहिए। उन्होंने कहीं कि कृषि में आपेक्षक क्षति को आसानी से मूल्यांकित किया जा सकता लेकिन मात्स्यिकी में यह मुश्किल है और इस के लिए संगठित प्रयास नहीं किए गए हैं। X^{वीं} योजना अवधि के दौरान समुद्री एवं अंतःस्थलीय मात्स्यिकी दोनों में प्रग्रहण एवं पश्च प्रग्रहण क्षतियों पर के मा प्रौ सं द्वारा एक मिशन मोड पर रा कृ प्रौ प संचालित की गई। फिर भी, इस समय अखिल भारतीय स्तर पर संकेन्द्रित प्रयासों की आवश्यकता है। प्रग्रहण एवं पश्च प्रग्रहण के मूल्यांकन पर एक कार्यक्रम जिसका प्रायोजन खाद्य प्रसंस्करण मंत्रालय, भारत सरकार द्वारा और सिफहेट, लूधीयाना द्वारा समन्वित है। वे आगे कहीं कि मात्स्यिकी में इस कार्य को करने के लिए रूपात्मकता बाद में कार्यान्वित की जाएगी। उन्होंने यह भी उल्लेखित किया की कि भिन्न संस्थानों से क्षति एवं कमी उपायों पर उपलब्ध आँकड़ों का इकट्ठा करने का प्रयास किया जाना चाहिए।

इस अवसर पर बात करते हुए डॉ. श्रीनिवास गोपाल यह संस्थान में इस कार्यशाला के आयोजन के लिए संतोष व्यक्त किए। उन्होंने जोर दिया कि खाद्य एवं पोषणीय सुरक्षा के संबंध में मत्स्य महत्वपूर्ण है। मत्स्य प्रोटीन का महत्वपूर्ण स्रोत, उच्च पचनीय, हृद-धमनी बीमारियों में उपयोगी है, अतः इसकी क्षति को रोकना अति महत्वपूर्ण है। मानव उपभोग के लिए अनुपयुक्त शिकार की क्षति के रूप में माना जाता है। रद्दी को संपत्ति में परिवर्तन करने की आवश्यकता है।

डॉ. के.के. सिंह, ए आइ सी आर पी-पी एच टी 2005-07 के दौरान किए पर एक प्रस्तुति किया जिसे संसदीय समिति, कृषि द्वारा सिफारिश के अनुसार फिर से किया जा रहा है। वे इस परियोजना के उद्देश्य, प्रतिचयन, प्रणाली-विज्ञान और एकत्रित आँकड़ों के विश्लेषण को प्रस्तुत किए। उन्होंने उल्लेखित किया कि इसे 46 फसल एवं पदार्थ समूहों के लिए किया गया। उन्होंने उल्लेखित किया कि इस परियोजना में समुद्री एवं अंतःस्थलीय मात्स्यिकी को पहले से शामिल किया गया और इस कार्यक्रम को कराने के लिए शामिल संगठनों पर प्रकाश डाला। यह अवलोकित किया गया कि मत्स्यन क्षति मूल्यांकन पर प्रमुख कार्य राज्य कृषि विश्वविद्यालय एवं भा कृ अनु सं संस्थान जैसे सी पी सी आर आइ, सी टी सी आर आइ आदि द्वारा संचालित किया गया है।

डॉ. पी. प्रवीन, वरिष्ठ वैज्ञानिक, के मा प्रौ सं, कोचिन प्रग्रहण एवं पश्च प्रग्रहण क्षतियों के मूल-विषय पर प्रस्तुतिकरण किया उसके बाद एक संक्षिप्त प्रस्तुतिकरण डॉ. वी. गातालक्ष्मी, वरिष्ठ वैज्ञानिक, के मा प्रौ सं, कोचिन द्वारा प्रग्रहण एवं पश्च प्रग्रहण क्षतियों पर चालू संस्थान परियोजना पर किया। प्रस्तुतिकरण पर परिचर्चा का एक विस्तारित सत्र मात्स्यिकी के संबंध में प्रणाली-विज्ञान के साथ प्रतिचयन संबंध में अपने विचार सहभागियों द्वारा व्यक्त करने के लिए था विचार विमर्श के दौरान सहभागी विचार व्यक्त किए कि क्षतियों उत्पन्न होना माल उतारते समय हस्तन क्षतियों, अल्प मूल्य मत्स्यों एवं किशोरों को फेंकना, तट को लाने से अनुपयुक्त के कारण प्रग्रहण की भौतिक क्षति, अवसंरचना सुविधाओं की कमी, आवतरण केन्द्रों, पूर्व-संसाधन केन्द्रों एवं बाजारों में मत्स्य अपर्याप्त हस्तन, प्रतिकूल पर्यावरणीय परिस्थिति, कीटों का उत्पीड़न और पक्षियों, शुष्कन के दौरान पशु एवं कृन्तकों द्वारा आक्रमण, अपर्याप्त बर्फ़न के कारण विकृति, अनुपयुक्त संवेष्टन एवं अकुशल डिब्बे, अशुद्ध





losses. He suggested that harvest losses should be treated separately and estimation of the same is a challenge. He also said that it is best to revisit the scenario, since the estimates are highly dynamic and situations are continuously changing. Dr. G.R. Unnithan, Principal Scientist (Retd.), CIFT, Cochin, spoke about the NATP on how a definition of loss was arrived at, extent of coverage of the study and how the work was carried out. Dr. P. Vijayagopal, Senior Scientist, CMFRI, Cochin said that CMFRI is carrying out a project on bycatch and discards for the past five years and those inputs can be given.

This was followed by group discussions by the participants. Three groups were formed to discuss on the following themes:

1. Assessment of production and post-production losses in the Indian fisheries sector at producer, market and consumer level.
2. Strategies for mitigating post harvest losses in the fisheries sector of the country.
3. Awareness programmes and popularization of technologies for reducing harvest and post harvest loss.

The group leaders presented the salient points which emerged out of the group discussions.

After the presentations, a summing up was done by the Chair and Co-Chair. The meeting concluded with a formal vote of thanks by Dr. Pravin.

CIFT Conducts Training on Power Block Aided Purse Seining

A training programme on "Power block aided purse seining" was held at CIFT, Cochin during 10-13 April, 2012. Nine fishermen trainees sponsored by the Directorate of Fisheries, Goa under the 'Rajiv Gandhi Rashtriya Krishi Vikas Yojana' participated in the training programme. Dr. S. Balasubramaniam, Head, EIS Division welcomed the trainees. Dr. T.K. Srinivasa Gopal, Director of the Institute



On-board training on power block aided purse seining

परिवहन, परिवहन में विलंब, संग्रहण सुविधा की कमी, माँग की कमी और बिक्री में विलंब।

डॉ. श्रीनाथ कहा कि प्रग्रहण क्षतियों को अकलित करना काफी मुश्किल है। उन्होंने सुझाव दिया कि प्रग्रह क्षतियों को अलग से विवेचित किया जाए और इस का आकलन एक चुनौती है। उन्होंने यह भी कहा कि यह उत्तम होगा कि इस परिदृश्य को फिर से देखा जाना चाहिए क्योंकि आकलन उच्च गतिमन हैं और परिस्थितियाँ निरंतर परिवर्तनीय हैं। डॉ. उणितान, रा क्यू प्रो प के बारे में कैसे क्षति की परिभाषा की जा सकती, इस अध्ययन का क्षेत्र विस्तार और यह कार्य कैसे कार्यान्वित किया जा सकता पर बात किए। डॉ. पी. विजयगोपाल, वरिष्ठ वैज्ञानिक, के स मा अनु सं, कोचिन कहा कि पिछले पाँच वर्षों से उपपकड़ एवं फेंक पर एक परियोजना कर रहा है और यह निवेश दिए जा सकते हैं।

इसके बाद सहभागियों द्वारा समूह चर्चा थी। यह समूह निम्नलिखित मूल विषयों पर चर्चा के लिए निर्मित थे।

1. भारतीय मात्स्यिकी में उत्पादक, बाजार एवं उपभोक्ता स्तर पर उत्पादन एवं पश्च उत्पादन क्षतियों का मूल्यांकन।
2. देश के मात्स्यिकी क्षेत्र में पश्च प्रग्रहण क्षतियों की कमी के लिए रणनीतियाँ।
3. प्रग्रहण एवं पश्च प्रग्रहण क्षति को कम करने के लिए प्रौद्योगिकियों की जानकारी कार्यक्रम और लोकप्रिय बनाना।

समूह चर्चा में उभारे मुख्य बिन्दुओं को समूह नेता द्वारा प्रस्तुत किया गया।

इन प्रस्तुतिकरण के बाद अध्यक्ष-सह-अध्यक्ष द्वारा एक संक्षिप्त विवरण दिया गया। डॉ. पी. प्रवीन द्वारा औपचारिक धन्यवाद ज्ञापन के बाद इस बैठक की समाप्ति हुई।

in his inaugural address highlighted the success of purse seining and its operation and use of power block which was carried out under the Institute project. Dr. P. Pravin, Senior Scientist in his briefing said that the training programme mainly focuses on the practical aspects and purse seining and power block operations will be carried out on-board a private vessel. Dr. Leela Edwin, Head, FT Division proposed



Participants and faculty of training along with the Director, CIFT



the vote of thanks.

Theory classes were held on different aspects of purse seining with special emphasis on large mesh purse seining. The fishermen trainees were also taken around the Institute and were briefed about various technologies developed by the Institute. Field visits to Cochin Fishing Harbour, fish markets and fish landing centers were also arranged for the fishermen trainees.

A demonstration fishing trip was carried out on-board



Fishermen discussing with Dr. Pravin on operation of power block on board Bharat Darshan

Fishermen Cooperative Society purse seiner 'Bharat Darshan' on 12 April, 2012. The purse seine net was operated and hauled using power block. The operation of the power block was demonstrated to the trainees. They were familiarized with the operation of power block and found it to be very useful as the net could be hauled in a very short time. Dr. Srinivasa Gopal gave away the certificates to the trainees on 13 April, 2012

after successful completion of the training.

Field Visits

Dr. M.M. Prasad, Principal Scientist & SIC, Visakhapatnam, Dr. G. Rajeswari, Dr. R. Raghu Prakash, Senior Scientists, Smt. Arathy Ashok and Kum. Jesmi Debbarma, Scientists have made a field visit to the landing centres at Chollangi and Dummulupeta in Kakinada on 9 May, 2012. Nearly 250 motorized and non-motorized crafts were found operating in the Chollangi fishing village. Major crafts operated in the area were wooden motorized crafts fitted with outboard engines. Major gear used in the area was gillnet. Fish landings of the area included prawns, seer fish, sardine, ribbon fish, mullets, oysters and crabs. Freshwater fishes like catla, rohu, mrigal, catfishes etc. were also found in the markets near the landing centres. A marked difference in the landing scenario and socio-economic status of fisherfolk were observed when compared to that of three decades earlier data.

Dr. U. Sreedhar, Senior Scientist, Dr. L.N. Murthy, Scientist, Senior Scale, Smt. Arathy Ashok and Kum. Jesmi Debbarma, Scientists have made a field visit to the fishing harbor, Visakhapatnam on 21 June, 2012. Comparatively good landing was observed in different fish species after the trawl ban during 15 April to 31 May. Discussions were made with the mechanized craft operators on post harvest losses and it was found that about 600 kg loss occurs in case of 17 days fishing trip of a 'Sona' boat. Different species of fish samples were collected from the harbor for the ongoing research projects.

Smt. Arathy Ashok, Scientist has visited the State Fisheries Department, East Godavari District located at Kakinada during 27-28 June, 2012. Discussions were made with the Deputy Director (Fisheries) and the Assistant Director on the general fisheries scenario of East Godavari District and on various Marine Fisheries Regulation Acts

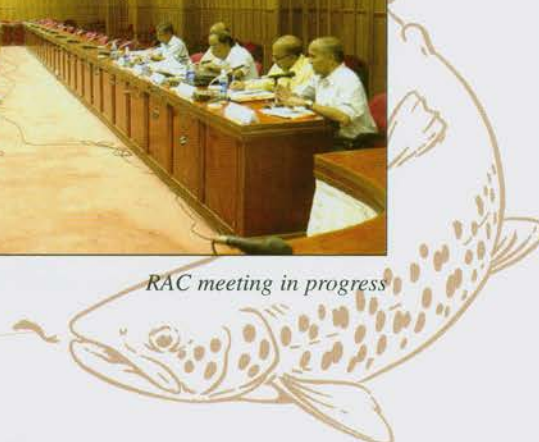
pertaining to the State. Visit was also made to the Godavari Maha Samakhya, a fisherwomen federation of community based organizations called Self Help Groups. It was organized under the 'Rural Poverty Reduction Programme' under 'Indira Kranti Patham' of Andhra Pradesh government. Godavari Maha Samakhya consists of 1798 women Self Help Groups. The Samakhya is presently dealing with various activities on food and nutritional security, adult education, higher education of children, livelihood options and old age pension.

Research Advisory Committee Meeting

The Research Advisory Committee (RAC) under the Chairmanship of Dr. K. Devadasan, Former Director, CIFT met during the period 9-10 April, 2012 to discuss about the research activities of the Institute.



RAC meeting in progress





CIFT Foundation Day and Agricultural Education Day Celebrated / के मा प्रौ सं स्थापना दिवस और कृषि शिक्षा दिवस मनाया

The 55th Foundation Day of CIFT, Cochin was celebrated on 28 April, 2012 at the roof top auditorium of CIFT. Shri R.C. Sinha, Director, Central Institute of Fisheries Nautical Engineering & Training, Cochin inaugurated the function. In his inaugural talk he complemented CIFT for its achievements and urged the importance of transfer of technology to the needy to get the fruitful results of research. Four senior most retired persons from different categories, Shri E. Sreedharan Nambudiri (Scientific), Smt. Alice M. Joseph (Administrative), Shri Dharaneedharan (Technical), and Shri Thevan (Supporting) were honoured at the function.

Ms. Parvathy Soman, the upcoming celebrity of 'Munch Star Singer' fame was the Guest of Honour who mesmerized the audience with her voice. There were cultural programmes by the staff and children of staff. The meeting was presided over by the Director, Dr. T.K. Srinivasa Gopal. Dr. P.T. Lakshmanan, Head, Biochemistry & Nutrition Division welcomed the audience and Dr. T.V. Sankar, Head, Quality Assurance & Management Division offered the vote of thanks.

As part of the Agricultural Education Day celebrations, the research laboratories of the Institute were kept open to the public in the forenoon of 28 April and large number of students from Kendriya Vidyalaya No. 1 (Naval Base) and Kadavanthra visited the Institute and had first-hand information on the research activities.



Shri R.C. Sinha delivering the inaugural address of Foundation Day celebrations



Students being explained during Agricultural Education Day

के मा प्रौ सं का 55 वा स्थापना दिवस 28 अप्रैल, 2012 को के मा प्रौ सं के रूफ टॉप सभाभवन में मनाया गया। इस समारोह का उद्घाटन श्री आर. सी. सिंह, निदेशक, केन्द्रीय मात्स्यिकी नौचलन अभियांत्रिकी एवं प्रशिक्षण संस्थान द्वारा किया गया। अपने उद्घाटन भाषण में वे के मा प्रौ सं को अपने उपलब्धियों के लिए बधाई दिए और आग्रह किया कि अनुसंधान के उत्तम परिणामों की प्राप्ति के लिए जरूरतमद को प्रौद्योगिकी हस्तांतरण महत्वपूर्ण है। भिन्न श्रेणियों से चार वरिष्ठतम सेवानिवृत्त व्यक्तियों, श्री ई. श्रीधरण नमबुद्री (वैज्ञानिक), श्रीमती एलीस जोसफ (प्रशासन), श्री धरणीधरन (तकनीकी) और श्री थेवन (सपोर्टिंग) को इस समारोह में सम्मानित किया गया।

कुमारी पार्वती सोमन, 'मन्च स्टार सिंगर फेम' की भावी प्रसिद्धि सम्मानित अतिथी थी, वे अपना आवाज से दर्शकों को सम्मोहित की।

कर्मचारी सदस्य और बच्चों के द्वारा सांस्कृतिक कार्यक्रम प्रस्तुत किए गए। इस बैठक की अध्यक्षता निदेशक डॉ. टी.के. श्रीनिवास गोपाल द्वारा की गई। डॉ. पी.टी. लक्ष्मणन, प्रगाध्यक्ष, जैवरसायन एवं पोषण प्रभाग दर्शकों का स्वागत किया और डॉ. टी.वी. शंकर, प्रभागाध्यक्ष, गुणता

आश्वासन एवं प्रबंध प्रभाग कृतज्ञता अर्पित किया।

कृषि शिक्षा दिवस समारोह के उपलक्ष्य में, 28 अप्रैल, के अपराह्न में जनता के लिए संस्थान के अनुसंधान प्रयोगशालाएं खूले रखे गए और केन्द्रीय विद्यालय सं. 1 (नवेला बेस) और कड़वन्ना से बड़ी संख्या में विद्यार्थी इस संस्थान का दौरा किए और अनुसंधान कार्यकलापों पर प्रारंभिक सूचना प्राप्त किए।

Institute Staff Research Council Meeting

The Institute Research Council (IRC) under the Chairmanship of Dr. T.K. Srinivasa Gopal, Director, CIFT met during the 19-21 April, 2012 to discuss the progress in the ongoing research programmes as well as to finalize the research projects for the next year. Dr. B. Meenakumari, Deputy Director General (Fisheries), ICAR, New Delhi

presided over the meeting of the last day and took part in the deliberations. The house discussed in detail the 17 ongoing research projects, 7 new project proposals and the various ad hoc research projects. Presentations were also made on the visits of Scientists abroad to attend training programmes, symposia etc. The following are the new in





house projects approved for initiation during the year 2012-13:

1. Diversity of seafood-borne pathogenic and commensal bacteria and bio screening for novel genes and catalysts - Dr. K.V. Lalitha
2. Evaluation of technology transfer models in the fisheries sector - Dr. S. Balasubramaniam
3. Management dimensions in the fisheries sector – Policies, issues and implications - Dr. Nikita Gopal
4. Processing and quality improvement of seafoods in Gujarat - Dr. R. Badonia
5. Enhancing the fuel efficiency and safety of mechanized fishing systems - Shri M. Nasser
6. Responsible fishing systems for marine sector - Dr. P. Pravin
7. Development of appropriate fishing systems for rivers - Dr. M.P. Remesan



IRC Meeting in progress

Hindi Workshops / हिन्दी कार्यशाला

During the Quarter two Hindi Workshops were conducted for technical staff of the Institute. The first workshop meant for Technician I to T-4 was held on 30 April, 2012. A total of 24 technicians attended the programme. The second workshop was conducted for Technical Officers (T6 to T9) on 1 May, 2012 for the benefit of 24 Technical Officers. Dr. Radhika Devi, Assistant Director, Hindi Training Sub-Institute, Hindi Teaching Scheme, Kakkanad was the faculty for both the programmes.



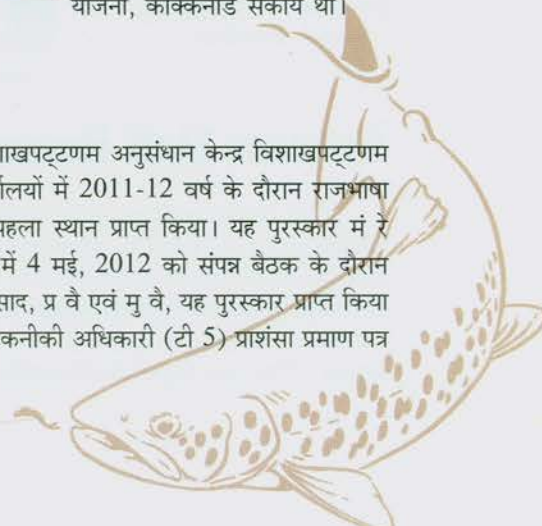
Dr. Radhika Devi conducting the classes

इस तिमाही के दौरान दो हिन्दी कार्यशालाएं संस्थान के तकनीकी कार्मियों के लिए संचालित किए गए। पहली कार्यशाला तकनीशियन 1 से टी-4 तक के लिए दिनांक 30 अप्रैल, 2012 को संचालित की गई। इस कार्यक्रम में कुल 24 तकनीशियन उपस्थित हुए। दिनांक 1 मई, 2012 को सरी कार्यशाला संस्थान के 24 तकनीकी अधिकारियों (टी 6 से टी 9) के फायदे के लिए संचालित की गई। इन दोनों कार्यक्रमों के लिए डॉ. राधिका देवी, सहायक निदेशक, हिन्दी प्रशिक्षण उपसंस्थान, हिन्दी शिक्षण योजना, काक्कनाड संकाय थी।

Awards and Honours / पुरस्कार एवं सम्मान

The Visakhapatnam Research Centre of CIFT was adjudged first in promoting the use of Official Language Hindi during the year 2011-2012 among government offices in and around Visakhapatnam. The prize was given during the meeting held on 4 May, 2012 at DRM office in Visakhapatnam. Dr. M.M. Prasad, SIC & Principal Scientist, received the prize and Dr. Santosh Alex, Technical Officer (T6) received the commendation certificate .

के मा प्रौ सं का विशाखपट्टणम अनुसंधान केन्द्र विशाखपट्टणम के आसपास सरकारी कार्यालयों में 2011-12 वर्ष के दौरान राजभाषा हिन्दी के प्रयोग उन्नति में पहला स्थान प्राप्त किया। यह पुरस्कार मं रे कार्यालय, विशाखपट्टणम में 4 मई, 2012 को संपन्न बैठक के दौरान दिया गया। डॉ. एम.एम. प्रसाद, प्र वै एवं मु वै, यह पुरस्कार प्राप्त किया और डॉ. संतोष अलेक्स, तकनीकी अधिकारी (टी 5) प्राशंसा प्रमाण पत्र प्राप्त किया।





Dr. M.M. Prasad receiving the first prize from Shri Kashinath, Divisional Railway Manager and Chairman TOLIC



Dr. Santosh Alex receiving the commendation certificate

Oyster Delights – A New Publication from CIFT, Cochin

Oysters encompass a number of bivalve mollusc species that live in the ocean and around reefs. Oysters have great value both as food and as a part of healthy ecosystem. They are not only delicious, but are also one of the most nutritionally well balanced foods, containing proteins, carbohydrates, lipids and minerals. Oysters are ideal food for inclusion in low-cholesterol diets. Oysters are an excellent source of vitamin A, B₁ (thiamine), B₂ (riboflavin), B₃ (niacin), C (ascorbic acid) and D (calciferol). Four or

five medium size oysters supply the recommended daily allowance of iron, copper, iodine, magnesium, calcium, zinc, manganese and phosphorus.

Under the project titled, 'Location specific livelihood interventions in fisheries sector for the empowerment of fisherwomen in Kerala' catalyzed and supported by Science and Society Division of Department of Science and Technology, New Delhi, CIFT, Cochin has brought out a new publication entitled, "Oyster delights". This publication is an attempt to increase awareness and to popularize oyster products. With an easy to follow format, step-by-step instructions and helpful tips throughout, the book helps even the most novice cook for preparing the delicacies easily. All recipes were tried and tested. To unlock flavors of oysters, this unique recipe book on 25 different oyster dishes would serve as the best guide for taste hunters.

The publication compiled by Dr. Femeena Hassan, Dr. Saleena Mathew and Ms. Bably J. Vijayan was formally released by Dr. S. Ayyappan, Secretary, DARE and Director General, ICAR, New Delhi on 5 April, 2012 in a function held in connection with the inauguration of Business Incubation Centre at CIFT, Cochin.



Release of the publication

Invited Talks

Dr. S. Audilakshmi, Principal Scientist, Directorate of Sorgham Research (DSR), Hyderabad who is the award winner of Punjab Rao Deshmukh Outstanding Woman Scientists Award delivered a lecture on "How to encourage women" at CIFT, Cochin on 15 May, 2012. Dr. P.T. Lakshmanan, Director in-charge presided over the function. During her interaction, Dr. Audilakshmi gave a brief account of her achievements, which helped her to bag the award. She enlightened the audience about the funding opportunities for research projects of women and encouraged women Scientists and Research Fellows for doing sincere work for



Dr. S. Audilakshmi delivering her talk. Also seen are Dr. S. Ashaletha, Senior Scientist and Dr. P.T. Lakshmanan, Director In charge, CIFT, Cochin



getting better results. The lecture was followed by an active interaction session. Around 50 members, including Scientists, SRF's and technical staffs attended the session.

Shri K.S. Harikrishnan, Sub-Divisional Engineer, BSNL, Thodupuzha gave an invited talk on "Latest trends



Shri K.S. Harikrishnan delivering the talk

in telecommunication" (In Hindi) on 11 June, 2012.

Dr. Raxit J. Jariwalla, Dr. Rath University, California delivered a talk on "Nutritional medicine and infectious diseases" on 12 June, 2012.



Dr. Raxit J. Jariwalla delivering the talk

Anti Terrorism Day Observed

The Institute observed Anti Terrorism Day on 21 May, 2012. The staff of the Institute assembled together and took Anti Terrorism Day Pledge.

Visitors

Shri A.K. Sreevastava, Deputy Director (Implementation), Official Language, Bangalore visited the Visakhapatnam Research Centre of CIFT on 4 May, 2012 and monitored the activities regarding Official Language Implementation.



Shri A.K. Sreevastava inspecting the Official Language publications

World Environment Day Celebrated

The Visakhapatnam Research Centre of CIFT in collaboration with the CMFRI Regional Centre observed World Environment Day on 8 June, 2012. Saplings were planted in the CMFRI-CIFT Residential Complex on the day in order to create awareness on protecting environment.



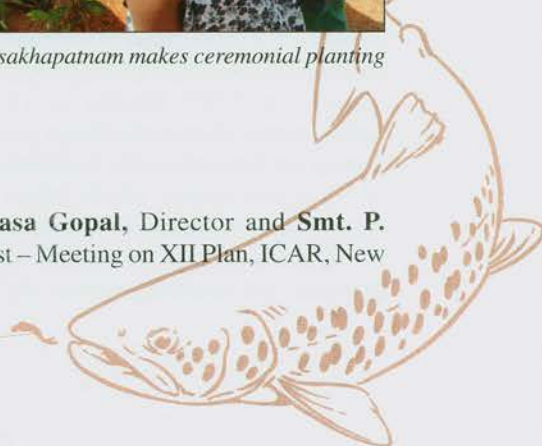
Dr. M.M. Prasad, SIC, Visakhapatnam makes ceremonial planting

Personnel News

Participation in Seminars/Symposia/Workshops etc.

■ **Dr. T.K. Srinivasa Gopal**, Director – One day workshop on Disposal of appeal under RTIA, ISTM, New Delhi (8 June)

■ **Dr. T.K. Srinivasa Gopal**, Director and **Smt. P. Jeyanthi**, Scientist – Meeting on XII Plan, ICAR, New Delhi (30 April)





- **Dr. T.K. Srinivasa Gopal**, Director, **Dr. P.T. Lakshmanan**, HOD, B&N, **Dr. Leela Edwin**, HOD, FT, **Dr. T.V. Sankar**, HOD, QAM, **Dr. S. Balasubramaniam**, HOD, EIS, **Dr. C.N. Ravishankar**, HOD, FP, **Dr. M.R. Boopendranath**, **Shri P.K. Vijayan**, Principal Scientists, **Dr. K. Ashok Kumar**, **Dr. P. Pravin**, **Dr. V. Geethalakshmi**, **Dr. Suseela Mathew**, **Dr. R. Anandan**, **Dr. Nikita Gopal**, **Dr. Femeena Hassan**, **Dr. M.P. Remesan**, **Dr. A.A. Zynudheen**, Senior Scientists, **Dr. Toms C. Joseph**, Scientist (SG), **Shri V. Radhakrishnan Nair**, Scientist, Senior Scale, **Shri V. Chandrasekar**, **Shri C.G. Joshy**, **Kum. A. Jeyakumari** and **Shri K.K. Prajith**, Scientists – National brainstorming workshop on ‘Harvest and post harvest losses in fisheries sector’, CIFT, Cochin (22 June)
- **Dr. T.K. Srinivasa Gopal**, Director and **Dr. A.R.S. Menon**, Tech. Officer (T9) – XXIII Meeting of the ICAR Regional Committee No. VIII, TNAU, Coimbatore (15-16 June)
- **Dr. K.V. Lalitha**, HOD, MFB and **Dr. Toms C. Joseph**, Scientist (SG) - Meeting convened by DDG (Fy.) on participation in NACA initiative on regional proficiency testing programme for aquatic disease laboratories in Asia-Pacific and network on aquatic animal health, ICAR, New Delhi (11 June)
- **Dr. T.V. Sankar**, HOD, QAM - Brainstorming meeting on ‘Setting up of national referral contaminants in raw and processed food commodities’, ICAR, New Delhi (28 May). Dr. Sankar made a presentation on ‘Quality testing requirements for fish and fishery products and role of CIFT’.
- **Dr. M.M. Prasad**, SIC, Visakhapatnam, **Dr. G. Rajeswari**, **Dr. U. Sreedhar**, Senior Scientists, **Smt. Arathy Ashok**, **Kum. Jesmi Debbarma**, Scientists, **Shri M.S. Kumar**, Tech. Officer (T7-8), **Shri K.V.S.S.S.K. Harnath**, **Shri B.K. Panda**, Tech. Officers (T6), **Shri A.K. Panigrahi**, **Shri D. Rout**, Tech. Officers (T5) **Shri P. Radhakrishna** and **Shri M. Prasanna Kumar**, Tech. Assts. (T4) – One day interface meeting on Expert consultation on academic partnership for excellence and networks, Visakhapatnam (29 April)
- **Dr. M.M. Prasad**, SIC, Visakhapatnam, **Dr. G. Rajeswari**, **Dr. R. Raghu Prakash**, Senior Scientists, **Smt. Arathy Ashok** and **Kum. Jesmi Debbarma**, Scientists – Consultation cum stakeholders workshop for Identification and prioritization of research gaps in coastal and marine biodiversity conservation in East Godavari Estuarine Ecosystem, Kakinada (8 May). Dr. Raghu Prakash made a presentation on ‘Research gaps and needs of production sector in East Godavari Estuarine Ecosystem (EGREE)’.



Dr. Raghu Prakash making his presentation at the Workshop

- **Dr. R. Badonia**, SIC, Veraval - Krishi Mahotsav, Chorwar (16 May), Ahmedabad (25 May) and Porbandar (28 May)
- **Dr. R. Badonia**, SIC, Veraval, **Dr. G.K. Sivaraman**, Senior Scientist, **Dr. C.O. Mohan** and **Shri A.K. Jha**, Scientists – Regional workshop and exhibition on Marine fisheries resources of Gujarat and diversified fishing methods, Veraval (26 June)
- **Dr. S. Sanjeev**, Principal Scientist, **Dr. K. Ashok Kumar**, **Dr. Femeena Hassan**, Senior Scientists and **Dr. S.K. Panda**, Scientist, Senior Scale – National seminar on Food safety – Role of standards, Cochin (28 May)
- **Dr. M.R. Boopendranath**, Principal Scientist – XV meeting of Governing Body of State Fisheries Resource Management Society (FIRMA), Cochin (9 April)
- **Dr. M.R. Boopendranath**, Principal Scientist – Sub committee meeting of FIRMA, KUFOS, Cochin (10 May)
- **Shri P.K. Vijayan**, Principal Scientist – State level guidance council meeting of Matsya Samrithi Project, Govt. of Kerala, Thiruvananthapuram (3 April)
- **Dr. K. Ashok Kumar** and **Dr. P. Pravin**, Senior Scientists – Technical workshop for Technical/Nodal Officers of Kerala on National Knowledge Network (NKN), NIIST, Thiruvananthapuram (9-10 May)
- **Dr. G. Rajeswari**, Senior Scientist – Interdisciplinary refresher course in Life Sciences, Andhra University, Visakhapatnam (16 June) (As resource person)
- **Dr. G. Rajeswari** and **Dr. R. Raghu Prakash**, Senior Scientists – One day fishermen training programme, Digha Mohana, West Bengal (2 May) (As resource persons). Dr. Rajeswari and Dr. Raghu Prakash delivered talks on ‘Fishing crafts and gears’ and ‘Bycatch reduction devices’ at the programme.





Dr. G. Rajeswari delivering her talk

- **Dr. Sanjoy Das**, Senior Scientist – 12th Indian Veterinary Congress and National symposium on Changing scenario in veterinary vaccinology and diagnostics in India with reference to national standards, College of Veterinary Sciences, Mhow (20-21 April). Dr. Sanjoy Das also presented a paper on “Formation of biofilm by *Listeria monocytogenes* on different surfaces” by Sanjoy Das and K.V. Lalitha.
- **Dr. R. Anandan**, Senior Scientist – National conference on Molecular and cellular mechanisms of diseases: Intervention with natural products, Annamalai University, Annamalai Nagar (7-8 April). Dr. Anandan also delivered an invited lecture on “Molecular and cellular mechanisms of marine products in alleviating diseases and disorders”.
- **Dr. A.A. Zynudheen, Dr. R. Anandan**, Senior Scientists, **Dr. K.K. Asha**, Scientist, Senior Scale, **Kum. A. Jeyakumari, Smt. V. Renuka**, Scientists, **Shri P.A. Aneesh**, Contractual Tech. Asst. and **Shri P.K. Mahato**, SRF - International conference on Nutritional medicine health and wellness, St. Teresa's College, Ernakulam (7-8 June). The following research papers were also presented by them in the Conference:
 - i. Standardization and quality evaluation of fish protein hydrolysate incorporated health food mix by A.A. Zynudheen, George Ninan, C.G. Joshy and P.K. Sabna
 - ii. Age-associated alterations of lipid peroxidation in cortex, striatum and hippocampus of rat brain: Synergetic antiaging functions of dietary supplementation of w-3 polyunsaturated fatty acids and squalene by T. Obulesu, R. Anandan, Suseela Mathew, P.T. Lakshmanan, Gopalakrishna and W.S. Lakra
 - iii. W-3 polyunsaturated fatty acids profile of Indian food fishes of Arabian sea by P.A. Aneesh, Jones Varkey, R. Anandan, Suseela Mathew, K.K. Asha, P.T. Lakshmanan and T.V. Sankar

- iv. Antiaging effect of dietary chitosan supplementation on antioxidant status in young and aged rats by R. Anandan, B. Ganesan, Suseela Mathew, K.K. Asha, P.T. Lakshmanan and A.A. Zynudheen
- v. Anti oxidant activity of oyster peptide extract and its ability to inhibit *in vitro* lipid peroxidation by K.K. Asha, Suseela Mathew, R. Anandan and P.T. Lakshmanan
- vi. Enrichment of cookies with omega-3 fatty acids by emulsification and micro-encapsulation by A. Jeyakumari, G. Janarthanan, D.C. Kothari, K. Chouksey and G. Venkateswarlu
- vii. Functional properties of fish protein hydrolysate by P.K. Mahato, P.K. Vijayan, A.A. Zynudheen and George Ninan

- **Shri M.V. Baiju**, Senior Scientist – Refresher course on Agricultural research management for newly recruited Senior/Principal Scientists of non-ARS stream of ICAR, NAARM, Hyderabad (5-18 June)
- **Shri A.K. Jha**, Scientist – Workshop on Ecology, Ahmedabad (12 June)
- **Shri Charles Ekka**, SAO – Special programme on Pension and other retirement benefits, ISTM, New Delhi (18-22 June)

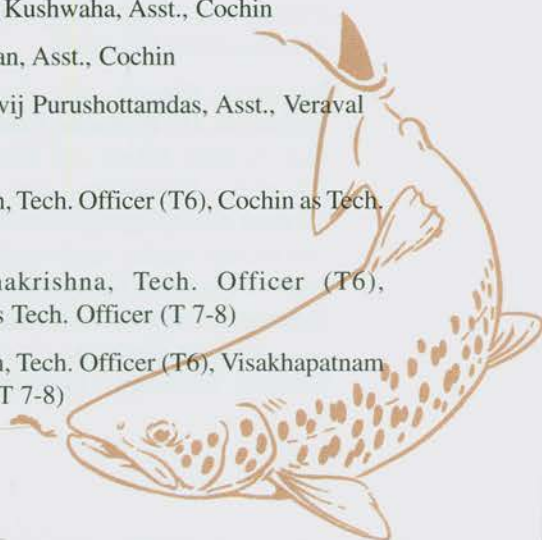
Personalia

Appointments

1. Shri K.K. Prajith, Scientist, Fisheries Resource Management, Cochin
2. Shri Niladri Sekhar Chatterjee, Scientist, Organic Chemistry, Cochin
3. Smt. G. Surya, Asst., Cochin
4. Kum. Nilina Elais, Asst., Cochin
5. Shri S. Vishnu, Asst., Cochin
6. Kum. N.R. Akhila, Asst., Cochin
7. Shri Anand Priya Kushwaha, Asst., Cochin
8. Smt. Asha Gopalan, Asst., Cochin
9. Shri Kaushal Rutvij Purushottamdas, Asst., Veraval

Promotions

1. Shri C.R. Gokulan, Tech. Officer (T6), Cochin as Tech. Officer (T 7-8)
2. Shri V.V. Ramakrishna, Tech. Officer (T6), Visakhapatnam as Tech. Officer (T 7-8)
3. Shri B.K. Pradhan, Tech. Officer (T6), Visakhapatnam as Tech. Officer (T 7-8)





4. Shri J.B. Paradva, Tech. Officer (T6), Veraval as Tech. Officer (T 7-8)
5. Shri K.U. Dholia, Tech. Officer (T6), Veraval as Tech. Officer (T 7-8)
6. Smt. Sangeetha D. Gaikwad, Tech. Officer (T6), Mumbai as Tech. Officer (T 7-8)
7. Smt. Triveni G. Adiga, Tech. Officer (T6), Mumbai as Tech. Officer (T 7-8)
8. Dr. B. Ganesan, Tech. Officer (T5), Cochin as Tech. Officer (T6)
9. Smt. K.K. Kala, Tech. Officer (T5), Cochin as Tech. Officer (T6)
10. Shri Sibasis Guha, Tech. Officer (T5), Cochin as Tech. Officer (T6)
11. Shri P.S. Babu, Tech. Officer (T5), Cochin as Tech. Officer (T6)
12. Dr. Santhosh Alex, Tech. Officer (T5), Visakhapatnam as Tech. Officer (T6)
13. Shri M. Venkata Rao, T-4 (Driver), Visakhapatnam as Tech. Officer (T5)
14. Shri T.B. Assise Francis, T-3 (Driver), Cochin as T-4 (Driver)
15. Smt. N. Lekha, T-3 (Jr. Lab. Asst.), Cochin as T-4 (Sr. Lab. Asst.)
16. Shri K.S. Babu, T-II-3 (Turner), Cochin as T-4 (Turner)
17. Shri P. Bhaskaran, T-3 (Jr. Lib. Asst.), Cochin as T-4 (Sr. Lib. Asst.)
18. Smt. Bindu Joseph, T-3 (Media Asst.), Cochin as T-4 (Media Asst.)
19. Shri T.P. Saju, T-3 (Engineer – Civil), Cochin as T-4 (Engineer – Civil)
20. Smt. N.C. Shyla, T-3 (Field Asst.), Cochin as T-4 (Field Asst.)
21. Shri V.A. Sudhakaran, T-2 (Plumber), Cochin as T-3 (Plumber)
22. Shri K.V. Mohanan, T-2 (Driver), Cochin as T-3 (Driver)
23. Shri G. Kingsley, T-2 (Engine Driver), Veraval as T-3 (Engine Driver)
24. Shri C.K. Suresh, T-2 (Machine Operator), Cochin as T-3 (Machine Operator)
25. Shri S.H. Ummer Bhai, T-2 (Driver), Veraval as T-3 (Driver)
26. Shri M.M. Damodara, Asst., Veraval as Asst. Admn. Officer

Transfers

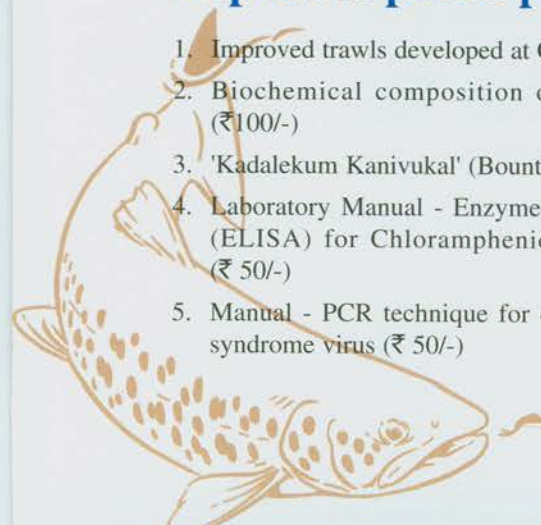
1. Dr. P.K. Binsi, Scientist, Cochin to Mumbai
2. Smt. Arathy Ashok, Scientist, Cochin to Visakhapatnam
3. Kum. Jesmi Debbarma, Scientist, Cochin to Visakhapatnam
4. Kum. S. Remya, Scientist, Cochin to Veraval
5. Shri K.C. Gopalan, Tech. Officer (T5), Visakhapatnam to Cochin
6. Shri H.S. Bag, T-I-3 (Driver), Burla to Visakhapatnam
7. Shri Kedar Meher, SSS, Cochin to Visakhapatnam

Retirements

1. Shri V. Gopalakrishna Pillai, Tech. Officer (T6), Cochin
2. Smt. M.K. Sreelekha, Tech. Officer (T6), Cochin
3. Shri C. Sriharibabu, Tech. Officer (T6), Visakhapatnam
4. Smt. K. Gracy, AAO, Cochin
5. Shri P.V. Venugopalan, Asst., Cochin
6. Shri P. Padmanabhan, Asst., Cochin
7. Shri M.T. Mani, Cook (Auxiliary), Cochin

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5. Manual - PCR technique for detection of white spot syndrome virus (₹ 50/-)
6. Spl. Bulletin - 11 Synthetic fish netting yarns (₹ 25/-)
7. Spl. Bulletin - 12 CIFT-TED for turtle-safe trawl fisheries (₹ 30/-)
8. Spl. Bulletin - 12 CIFT - TED for turtle-safe trawl fisheries (Tamil) (₹ 50/-)
9. Spl. Bulletin - 12 CIFT - TED for turtle-safe trawl fisheries (Telugu) (₹ 50/-)
10. Fish canning - Principles and practices (₹ 125/-)
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13. Value added products from low priced fish (Malayalam) (₹ 50/-)
14. The seafood canning industry in India (Monograph) (₹ 35/-)
15. Gillnets in marine fisheries of India (Monograph) (₹ 100/-)
16. Manual of biochemical methods for determining stress and disease status in crustaceans (₹ 90/-)
17. Electronic instrumentation technology developed by CIFT (₹ 60/-)
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Announcement

Winter School on Fish Harvesting Systems for Resource Conservation 20 November - 10 December, 2012; Venue: CIFT, Cochin

Fishing Technology Division of CIFT is organizing a Winter School on Fish Harvesting Systems for Resource Conservation which will cover theory and practical sessions on the following topics and on-board fishing practice: (1) Conservation needs for marine and inland fishery resources, (2) Fisheries legislation and management approaches for resource conservation, (3) Traditional, motorized and mechanized vessels, (4) Alternate materials and design interventions in fishing craft and gear for energy efficiency, (5) Design and operational approaches for resource conservation for major gear types *viz.* trawls, purse seines, gill nets, lines and traps, (6) Selectivity of important fishing gears, (7) Bycatch Reduction Devices (BRDs) and Turtle Excluder Devices (TEDs), (8) IUU fishing and mitigation measures, (9) Application of remote sensing and GIS for fishery resource management, and (10) Environment and fishery resource sustainability.

Eligibility: The participation in the Winter School is meant for researchers and teachers in the rank of Asst.

Professors/Scientists/Lecturers/research workers with at least 2 years of teaching/research experience in Fishing Technology and related fields in State Agricultural Universities/ICAR Research Institutes/Colleges. Applicants should have a Masters degree in Fisheries Science/Industrial Fisheries/Fisheries Technology and Engineering/Fisheries Engineering/Fishery Resource Management/Marine Biology/Zoology or equivalent qualification.

Contact for further information:

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