



# मत्स्य प्रौद्योगिकी समाचार

## Fish Technology Newsletter



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### National Seminar on WTO WTO पर राष्ट्रीय संगोष्ठी

The Society of Fisheries Technologists (India) in collaboration with CIFT, Cochin organized a one day National Seminar on "WTO and its impact on seafood trade" on 28 June, 2008. Dr. K. Devadasan, Director, CIFT and other invited speakers formally inaugurated the Seminar by lighting the traditional lamp. In his

मात्स्यकी प्रौद्योगिकियों की समिति (भारत) एवं सिफ्ट, कोचिन ने 'WTO और समुद्री खाद्य व्यवसाय में उसके संघात' पर एक दिवसीय राष्ट्रीय संगोष्ठी 28 वीं जून 2008 को आयोजित की। डॉ. के. देवदासन, निदेशक, सिफ्ट और अन्य आमंत्रित व्यक्तियों ने संगोष्ठी का उद्घाटन किया। उद्घाटन भाषण में उन्होंने कहा कि यह



*Inauguration of the Seminar by lighting the traditional lamp*

केन्द्रीय मात्स्यकी प्रौद्योगिकी संस्थान

सिफ्ट जंक्शन, मत्स्यपुरी पी.ओ., कोचिन - 682 029

Central Institute of Fisheries Technology

CIFT JUNCTION, MATSYAPURI P.O., COCHIN - 682 029



inaugural address he said that this is a very vital topic not only for the fisheries sector, but also for the national economy and that agencies concerned like EIA, MPEDA, Research Institutes in the field and the exporters should come together and discuss relevant issues. CIFT has now taken the initiative along with SOFT(I) in this direction. Dr. G.R. Unnithan, Principal Scientist, CIFT and Convener of the Seminar introduced the Seminar theme.

Delivering the Key Note Address, Dr. Ramesh Chand, National Professor, National Centre for Agricultural Economics & Policy Research, New Delhi opined that though devaluation of exchange rate was favourable in the initial years of liberalization, the output growth in fisheries sector has sharply decelerated after WTO. The reason for such a slow down was mainly due to the increased competition among several developing countries.

Quoting statistics, he told that export of fish and fish products did not do better than average of other agricultural products. While the percentage growth rate per year was 12.1 prior to WTO, i.e., 1985-86 to 1995-96, it declined to 3.9% after WTO, i.e., 1995-96 to 2005-06. Dr. Chand also pointed out that India must be prepared to face tight competition and stringent quality checks by equipping our fishery sector with technological and required infrastructure support.

Thereafter, Dr. A.G. Ponnaiah, Director, CIBA, Chennai highlighted the need for making more investments in science and HRD to effectively combat unreasonable WTO regulations in fisheries sector.

Dr. K. Gopakumar, former DDG (Fisheries), ICAR, New Delhi chaired the second session in which Smt. Asha Parameswaran, Deputy Director, MPEDA, Shri Sandu Joseph, Secretary, Seafood Exporters Association of India, Shri Deepak Shekhar, Joint Director, EIA, Adv. Jacob Joseph, National University of Advanced Legal Studies, Dr. M.K. Mukundan, HOD, Quality Assurance & Management, CIFT and Dr. Nikita Gopal, Senior Scientist, CIFT presented papers on related relevant topics. In the plenary session, a set of recommendations were unanimously adopted for bringing to the notice of the authorities.

केवल मात्स्यकी क्षेत्र के लिए नहीं बल्कि राष्ट्रीय अर्थव्यवस्था और EIA, MPEDA और इस क्षेत्र में कार्यरत अनुसंधान संस्थान एवं निर्यातकों के लिए एक महत्वपूर्ण विषय है की सभी एक साथ संबद्ध जरूरियों की चर्चा करें। इसलिए सिफ्ट ने सोफ्ट(ई) के साथ इस विषय को चुन लिया है। डॉ. जी.आर. उणिन्तान, मुख्य वैज्ञानिक, सिफ्ट और संगोष्ठी के संयोजक ने संगोष्ठी प्रकरण की प्रस्तुति की।

मुख्य भाषण देते हुए डॉ. रमेश चाँद, राष्ट्रीय प्रोफेसर, कृषि आर्थिक विज्ञान व पॉलीसी अनुसंधान केलिए राष्ट्रीय केन्द्र, नई दिल्ली ने व्यक्त



*Dr. Ramesh Chand delivering the Key Note Address*

किया कि उदारतावाद के प्रारंभिक वर्षों में विनिमय दर का अवमूल्यांकन होने पर भी अनुकूल था, मात्स्यकी क्षेत्र की उत्पाद बढ़ती WTO के बाद मंद पड़ गया। ऐसी मंद गति का मुख्य कारण कई विकासशील देशों के बीच की बढ़ती प्रतियोगिता है। सांख्यिकी को उद्भूत करते हुए उन्होंने कहा कि मत्स्य और मत्स्य उत्पादों का निर्यात,

अन्य कार्षिक उत्पादों के औसतन दर से श्रेष्ठ नहीं था। लेकिन प्रति वर्ष की बढ़ती दर प्रतिशतता WTO के पहले 12.1 थी यानी 1985-86 से 1995-96 तक, WTO के बाद घटती 3.9% हुई यानी 1995-96 से 2005-06 तक। डॉ. चन्द ने यह भी सूचित किया कि प्रौद्योगिकीय एवं आवश्यक अवसंरचना सहायता के साथ हमारे मात्स्यकी क्षेत्र को सज्जित करके भारत को सख्त प्रतियोगिता एवं सख्त गुणवत्ता जांचों को सामना करने की तैयारी में रहना है।

उसके बाद डॉ. ए.जी. पोन्नय्या, निदेशक, सिबा, चेन्नई ने मात्स्यकी क्षेत्र के अकारणीय WTO विनियमों को सामना करने के लिए विज्ञान एवं HRD में अधिक लागतों को लाने की आवश्यकता पर बल दिया।

डॉ. के. गोपकुमार, भूतपूर्व डी डी जी (मात्स्यकी), भा कृ अनु प, नई दिल्ली दूसरे सत्र के अध्यक्ष थे श्रीमती आशा परमेश्वरन, उप निदेशक, एम पी ई डी ए, श्री सान्दु जोसफ, सचिव, भारत के समुद्री खाद्य निर्यात संघ, श्री दीपक शेखर, संयुक्त निदेशक, EIA श्री जेकब जोसफ, NUALS, डॉ. एम.के. मुकुन्दन, प्रभाग अधिकारी, गुणता आश्वासन एवं प्रबंधन, सिफ्ट और डॉ. निकिता गोपाल, वरिष्ठ वैज्ञानिक, सिफ्ट आदि ने संबद्ध विषयों पर प्रपत्र प्रस्तुति की। अंतिम सत्र में प्राधिकारियों के ध्यान में लाने के लिए कई सिफारिशों की प्रस्तुति भी की गयी।



### Peptides

The word peptide is from Greek meaning "digestible". Peptides are a family of short molecules formed from the linking of two to 50  $\alpha$ -amino acids to each other in a defined order as determined by the genetic code. A peptide is any compound produced by amide formation between a carboxyl group of one amino acid and an amino group of another. The amide bonds in peptides may be called peptide bonds. The word peptide usually applies to compounds whose amide bonds are formed between C-1 of one amino acid and N-2 of another (sometimes called eupeptide bonds), but it includes compounds with residues linked by other amide bonds (sometimes called isopeptide bonds). Peptides with fewer than about 10-20 residues may also be called oligopeptides; those with more, polypeptides. Polypeptides of specific sequence of more than 50 residues are usually known as proteins, but authors differ greatly on where to start using this term.

Based on how peptides are produced, they are classified as Ribosomal Peptides, Non-ribosomal Peptides, and Digested Peptides.

**Ribosomal Peptides:** These peptides are synthesized by translation of mRNA. They are often subjected to proteolysis to generate the mature form. These function generally in higher organisms, as hormones and signaling molecules. In general, they are linear in structure.

**Non-ribosomal Peptides:** These peptides are synthesized using a modular enzyme complex. Non-ribosomal peptides are confined primarily to unicellular organisms, plants, and fungi. There is a common core structure to all of these complexes, and they can contain many different modules to perform chemical manipulations on the evolving product. Often, these peptides have highly-complex cyclic structures.

**Digested Peptides:** These peptides are the result of non-specific proteolysis as part of the digestive cycle. Digested peptides in general are ribosomal peptides, although they are not made on the ribosome of the organism that contains them. Digested peptides are also produced from protein digestion with specific proteases such as Trypsin digestion which commonly occurs during mass spectrometry peptide analysis.

#### Peptide Families

1. Calcitonin peptides

2. Opioid peptides
3. Vasopressin and Oxytocin
4. Tachykinin peptides
5. Vasoactive intestinal peptides
6. Pancreatic polypeptide-related peptides
7. GLP (Glucagon-like Peptides: GLP-1, GLP-2) Family of Peptides

**Applications of peptides in research:** Peptides have been instrumental in recent years in the study of life. The following are the applications of peptides in molecular biology and science.

**1. Peptide Antibody Production:** Peptides have allowed the creation of antibodies without the need for purification of protein. One can simply order a custom synthesized peptide of their protein of interest (which is immunogenic), allowing the creation of antibody.

**2. Peptides and Therapeutics:** Peptides have found usefulness in the clinic as therapeutic molecules targeting proteins and receptors of cancer and other diseased cells.

**3. Antimicrobial Peptides:** Antimicrobial peptides are molecules produced by the immune system of animals and plants and are being considered potential novel antibiotic candidates to combat emerging drug-resistant bacterial strains. The peptides are known to kill bacterial cells by direct membrane attack.

**4. The Study of Protein Structure and Function:** Synthetic peptides have been important in delineating protein-protein interactions, the binding of peptide and protein ligands to receptors, and many other protein interactions.

**5. Protein Identification and Mass Spectrometry:** Last but certainly not least, peptide mass spectrometry has allowed the identification of proteins and the study of proteomics.

In the Biochemistry and Nutrition Division at CIFT, Cochin a process for extraction, isolation and purification of peptides from fish waste is being improvised. The process involves extraction of meat in ethanol/HCl, and experimental procedures like solid phase extraction and HPLC.

- Smt. K.K. Asha and Dr. T.V. Sankar

Biochemistry and Nutrition Division, CIFT, Cochin



## Training Programmes

### Cochin

1. Production of yeast and assay of enzymes (1 March - 22 April)
2. Protein fractionation of fresh squid and evaluation of properties (1 February - 30 April)
3. Isolation and identification of halophilic Vibrios from fish (10 March - 10 June)
4. Quantitative and qualitative studies on Coliforms in fish (10 March - 10 June)
5. Post harvest technology in fisheries (26 March - 1 April)
6. Modern analytical techniques in Biochemistry (27 March - 7 April & 1-11 April)
7. Seafood waste utilization (2-15 April)
8. Nutrient composition, analysis and comparison of two species (7-26 April)
9. Principles and operation of Atomic Absorption Spectrophotometer (9-11 April)
10. Analysis of proximate composition of fish (9-11 April)
11. Analysis of pesticides in fish and water (15-26 April)
12. Utilization of fish and fish waste and production of silage, chitin/chitosan from different sources of fish and shell fish wastes (15-30 April)
13. Chemical analysis of water and ice (18 April - 9 May & 19-31 May)
14. Trace metal analysis in plants in relation to same in soil (21 April - 3 May)
15. Laboratory techniques for the microbiological examination of seafood (21 April - 3 May & 26 May - 7 June)
16. Techniques in microbial biotechnology (21 April - 3 May & 26 May - 7 June)
17. HACCP concepts (23-26 April, 14-17 May, 26-29 May & 16-19 June)
18. Modern analytical techniques in analysis of fish (28 April - 9 May)
19. Preparation of value added fish and fishery products (5-17 May)
20. Sous-vide technology for fish cutlets and fish steaks (5-17 May)
21. Preparation of condiments incorporated fish products (5-17 May)
22. Fish processing, product development and waste utilization (5-18 May)
23. Fish processing technology (12-24 May)
24. Microbial evaluation of seafood quality (19-31 May)
25. Preparation of value added products (21 May - 4 June)
26. Good laboratory practices and ISO/IEC 17025 (23 May)
27. Bacterial inhibitors and microbiological analysis of fish and fish products (26-31 May)
28. Evaluation of lipolytic activity in different organs of oil Sardine (4-18 June)
29. Evaluation of proteolytic activity in different organs of Indian Mackerel (4-18 June)
30. Seafood quality assurance (9-21 June)
31. HPLC (10-13 June)
32. Fish processing and solar drying techniques (12-16 June)
33. Extraction of certain flavours from cephalopod and its stabilization (16-26 June)
34. Basic techniques in Biotechnology (23-28 June)
35. Seafood quality assurance and water analysis (23 June - 5 July)



*Training on HACCP concepts*



*Training on Preparation of value added products*



## Visakhapatnam

1. Value added products (22 -26 April)
2. Post harvest technology (4-19 June)

## Outreach Programmes

The following outreach programmes were organized by the Institute during the quarter:

1. Awareness programme on Remote sensing and potential fishing zones, Sutrapada and Mangrol in Gujarat (2-3 April)
2. Training on handling and transportation of fish, KIDS, Kottapuram (11 April)
3. Awareness programme on Bycatch Reduction Device, Fishing villages of Ratnagiri, Maharashtra (12-14 April)
4. Training on Canning of fish products, Dept. of Fisheries, Manipur (24-25 April)
5. Training on Packaging of fish and fishery



*Training at Patwadi Madh, Maharashtra*

3. Laboratory techniques for microbiological examination of seafood (17-30 June)

6. Training on Harvest technologies, Emchi, Itanagar, Arunachal Pradesh (6 May)
7. Training on Hygienic handling and preparation of dried fishery products, Patwadi Madh fishermen village (7 May)
8. Training on Post harvest technology of fish, canning and value addition in fish, Yazali, Arunachal Pradesh (6-10 May)
9. Training on Production of fish pickles, prawn pickles and fish cutlets, Kannur (13-14 May)
10. Training on HACCP concepts, CIBA, Chennai (14-17 May)



*Training at Kottapuram, Kerala*

## Participation in Exhibitions

During the period, the Institute participated in the following exhibitions:

1. Exhibition held at Gandhi Smaraka Seva Kendram, SL Puram, Alappuzha during 20-27 April, 2008.



*Exhibition at SL Puram, Alappuzha*



*Exhibition at CIFA, Bhubaneswar*



2. Exhibition organized as part of Brain storming Meet on Aquaculture 2025: Challenges and opportunities, CIFA, Bhubaneswar during 7-8 June, 2008.
3. Exhibition organized as part of National Seminar on WTO and its impact on Indian seafood trade, CIFT, Cochin on 28 June, 2008.

## Training Programmes at NEH Region

A series of outreach training programmes on Harvest and post harvest technologies were held in the state of Arunachal Pradesh during the quarter. On 6 May, 2008 a training programme on Harvest technology was held at Emchi, Itanagar. Thirty fishermen/fish farmers participated in the programme which was inaugurated by Shri Tage Moda, Director of Fisheries, Arunachal Pradesh. Dr. M.P. Remesan, Scientist (SG), CIFT gave the Key Note address. A presentation was also made on gill nets and responsible fishing practices. Demonstration of rigging of gillnet was held in the afternoon. 250 kg of PA multifilament netting and twines were issued to Fisheries Department of Arunachal Pradesh for distribution among the participants.



*Training and distribution of Gillnet at Passighat*

A similar programme was held at Ziro on 8 May, 2008 which was inaugurated by Shri M. Pertin, IAS, Commissioner of Fisheries, Arunachal Pradesh. Shri

Tage Moda, Director of Fisheries, Arunachal Pradesh, Shri Pani Taram, DFDO, West Subansiri district and other officials of the Department attended the inaugural session. Forty fishermen participated in the 3-days programme. Dr. P.T. Mathew, Acting HOD, FP, CIFT gave the Key Note address. The Training programme on Fish canning and value addition in fish was conducted by Shri P.K. Vijayan, Principal Scientist, CIFT. 250 kg of PA multifilament netting and twines were also issued to the DFDO, Ziro for distribution.

Another training cum awareness programme on Gill net fishing was held at Passighat on 10 May, 2008. DFDO, Passighat welcomed the gathering and inaugurated the programme. Dr. M.P. Remesan gave the Key Note address followed by a presentation on gill net fishing. Demonstration and distribution of 250 kg of gill nets and ropes to the beneficiaries were arranged in the afternoon.

## Participation in 'Farmers Meet'

The Visakhapatnam Research Centre of CIFT participated in the "Farmers Meet" held at Rayawada reservoir, near Devarapally, Visakhapatnam district on 12 June, 2008. The Farmers Meet was organized by



*Hon'ble Minister Shri Ponnala Lakshmiiah visiting CIFT stall*

the Department of Agriculture, Government of Andhra Pradesh to highlight the developmental activities being undertaken by the Government for the welfare of farmer community. An exhibition with



*Shri Veera Brahmiah, IAS, Joint Collector observing the products developed by CIFT*



display of various products/by-products developed by CIFT like fish pickle, prawn pickle, fish wafers, fish fingers, fish cutlets, fish powder, isinglass, shark fin rays, chitin, chitosan, ready to serve fish curry, fish feed etc. was arranged for general public/visitors.

A foldable freshwater prawn trap for reservoir prawns designed, developed and fabricated in the recent past was also exhibited in the stall on the occasion. Since the programme was organized at the vicinity of the reservoir, a good number of reservoir fishermen also took part in the Meet. They have shown

overwhelming response on foldable traps and they expressed that these have more advantageous features than the traditional rectangular box type unfoldable bamboo traps.

Three Honorable Ministers from Govt. of Andhra Pradesh, Shri Konatala Ramakrishna, Minister of Commercial Taxes, Shri Gollapalli Surya Rao, Minister of Small Scale Industries, Shri Ponnala Lakshmiiah, Minister of Irrigation and Shri Veera Brahmiah, IAS, Joint Collector visited CIFT stall and appreciated the products.

## Field Trials Conducted

The Visakhapatnam Research Centre distributed three foldable traps and nylon monofilament and nylon multifilament of 120 mm mesh gill nets for performance evaluation to the Rayawada fishermen on 4 June, 2008. The gears were immersed in the evening hours and hauled in the morning hours of next day. While hauling these traps and gill nets, it

was observed that *Labeo rohita* was found entangled in the gear instead of gilling. The hanging ratio of the experimental gill net has been modified and reduced to 30% from 45%. It was found that few freshwater prawns are caught in the foldable traps suggesting that the entrance channels are to be modified to improve its catching efficiency.



Distribution of foldable trap developed by CIFT



Freshwater prawn caught in the foldable trap

## Awareness cum Demonstration Campaign on JFE-SSD

### किशोर मत्स्य अपवर्जक एवं झींगा छंटाई यंत्र पर जानकारी व विनिर्देशन अभियान

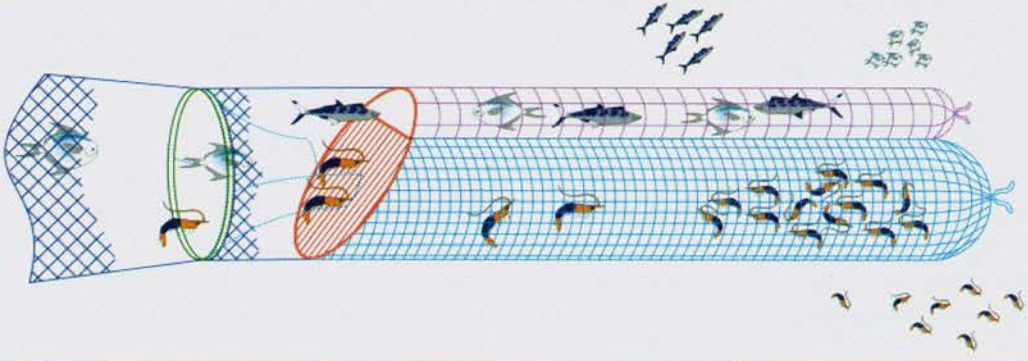
An Awareness cum Demonstration Campaign on Bycatch Reduction Device was conducted during 12-14 April, 2008 for the benefit of trawler fishermen at fishing villages in Ratnagiri by CIFT, Cochin, College of Fisheries of Dr. Balasaheb Swant Konkan Krishi Vidhyapeeth, Ratnagiri and Cameron International, Mumbai, under a unique collaborative initiative focussed on conservation of trawl caught resources and reduction of the negative impact of trawling on juveniles.

The Juvenile Fish Excluder cum Shrimp Sorting Device (JFE-SSD) combines shrimp bycatch reduction function with an *in-situ* shrimp sorting mechanism. It

रत्नगिरी के मत्स्यन गाँवों के ट्रालर मछुवारों के लाभार्थ सिफ्ट, कोचिन, मात्स्यकी कॉलेज, डॉ. बाल साहेब स्वान्त कोंकण कृषि विद्यापीठ, रत्नगिरी और कैमरन इंटरनैशनल, मुंबई के अधीन ट्राल पकड़ाव संपदाओं के संरक्षण और किशोरों पर ट्रालिंग के नकारात्मक संघात की घटौती पर एक बेजोड पहल को केन्द्रित करके उप पकड घटौती यंत्र पर एक जानकारी व विनिर्देशन अभियान 12-14 अप्रैल, 2008 के दौरान संचालित किया गया।

किशोर मत्स्य अपवर्जक व झींगा छंटाई उपकरण (JFE-SSD) झींगा उपपकड घटौती कार्य के स्वस्थाने झींगा छंटाई यंत्र-विन्यास से युक्त है। यह ट्राल जाल में पकडने वाले अलक्षित किशोर मत्स्यों को





*Perspective view of JFE-SSD*

is designed to exclude non-target juvenile fishes caught in the trawl net. The design concept of JFE-SSD proposed by the CIFT research team Dr. M.R. Boopendranath, Principal Scientist, Dr. P. Pravin, Sr. Scientist, Shri T.R. Gibinkumar and Shri S. Sabu, Senior Research Fellows has won the award of World Wildlife Fund's (WWF) International Smart Gear Competition for 2004, in the category 'Other Non-target Species - Including fish'. The device is fitted by replacing the conventional codend of the trawl with an oval grid with a top opening which, in turn, leads to an upper codend with large square meshes. Shrimp passing through the grid are retained in the lower codend made up of square mesh panel with 20 mm mesh size. Juveniles of shrimp and fish are allowed to escape through the upper and lower codend meshes, respectively.

Awareness cum Demonstration was conducted at Harnai fishing village, Kasaraveli fishing village and Mirkarvada minor fishing harbour, located in Ratnagiri, Maharashtra on 12th, 13th and 14th April 2008, respectively. Onboard demonstrations were followed by discussion meetings in which a total of about 180 fishers actively participated. The programme has been a great success and received good print and digital media coverage which enabled the transmission of the message to a wider spectrum of stakeholders.

निकालने के लिए अभिकल्पित है। JFE-SSD के अभिकल्प संकल्प का प्रस्ताव, लोक वन्य निधि (WWF) के अन्तर्राष्ट्रीय स्मार्ट गियर प्रतियोगिता 2004 में "अन्य अलक्षित जातियाँ-मत्स्य शामिल है", की श्रेणी में पुरस्कार प्राप्त सिफ्ट अनुसंधान टीम डॉ. एम.आर. भूपेन्द्रनाथ, मुख्य वैज्ञानिक, डॉ. पी. प्रवीण, वरिष्ठ वैज्ञानिक, श्री टी.आर. जिबिनकुमार और श्री एस. साबु, वरिष्ठ अनुसंधान अध्येता, ने किया है। उपकरण का जोड़, ट्रॉल के पारंपरिक कोड एन्ड के स्थान पर एक ऊपरी खुलाव से युक्त एक अण्डाकार ग्रिड से किया जाता है जो दीर्घ स्क्वयर संपाशों से युक्त ऊपरी कोड एन्ड हो जाता है। ग्रिड से जाने वाले झींगे 20 एम एम मेश आकार के स्क्वयर चैनल से बनाए अधोभागीय कोड एन्ड में प्रतिधारित होता है। किशोर झींगे और मछलियों को क्रमानुसार ऊपरी एवं नीचे के कोड एन्डों से बच जाने को अनुमत करता है।

जानकारी व विनिर्देशन कार्यक्रम, महाराष्ट्र के रत्नगिरी के हारनाई मत्स्य गाँव, कासरावेली मत्स्य गाँव और मिरकारवाडा छोटे मत्स्य गाँवों में क्रमानुसार 12,13 और 14 वीं अप्रैल 2008 को संचालित किया गया। बोर्ड पर के विनिर्देशन के बाद चर्चा बैठक भी हुई जिनमें 180 मछुवारे सक्रीय रूप में भाग लिए थे। कार्यक्रम की बड़ी कामयाबी हुई और समाचारों एवं डिजिटल माध्यमों में प्रसार भी हुआ जिसके कारण पणधारियों के विस्तृत स्पेक्ट्रम में संदेश का प्रक्षेपण हुआ था।



*Demonstration of JFE-SSD at Harnai fishing village*



*Demonstration of JFE-SSD at Mirkarvada fishing harbour*



## Bench Mark Survey

Under the NAIP on Responsible harvesting and utilization of selected small pelagics and freshwater fishes, a Bench Mark Survey has been initiated at Chellanam, Malampuzha (in Kerala) and Jaffrabad (in Gujarat)

Another Bench Mark Survey was conducted in



*Dr. S. Ashaletha, Scientist, Sr. Scale interacting with the migratory fisherfolk in Arunachal Pradesh*

Arunachal Pradesh in collaboration with Department of Fisheries prior to transfer of technologies like fish canning, fibre glass boat construction etc. The resource potential and current practice in vogue with reference to both technologies were documented.



*Shri M. Nasser, Principal Scientist examining the country crafts in vogue in Namsai area of Arunachal Pradesh*

## Commissioning of Community Canning Centres at NEH Region

### एन इ एच क्षेत्र में सामुदायिक डिब्बाबन्दन केन्द्रों का प्रारंभ

A Community Canning Centre was established at Directorate of Fisheries, Imphal, Manipur by CIFT, Cochin on 27 April, 2008. The Centre is having facility for canning ready to eat fish and fishery products. These products can be stored for more than two years at ambient temperature storage conditions without any refrigeration. The Centre is having facilities like fish cutting facility, fish washing facility, can filling tables, kitchen for preparing fish curry, can closing machinery (Can double seaming machine), Retort for thermal processing cans, cooling tank, etc. The processing hall was built by Directorate of Fisheries, Impahl, Manipur as per CIFT's guidelines and the machinery have been procured and set up in the hall by CIFT, Cochin. This facility can be used for producing many varieties of ready to serve canned fish products and also for providing training to interested entrepreneurs.

The Centre was commissioned by Hon'ble Minister for Fisheries, Govt. of Manipur, Shri Md. Allauddin

मात्स्यकी निदेशालय, इंफाल, मणिपुर में सिफ्ट, कोचिन द्वारा 27 वीं अप्रैल, 2008 में एक सामुदायिक डिब्बाबन्दन केन्द्र की स्थापना की गयी। खाने के लिए तैयार मत्स्य और मात्स्यकी उत्पादों के डिब्बाबन्दन के लिए केन्द्र में सुविधा होता है। ये उत्पाद कोई प्रशीतन के बिना उपवेशी तापमान संग्रहण अवस्थाओं में दो वर्षों से अधिक संग्रहित किया जा सकता है। केन्द्र में मत्स्य कतरन, मत्स्य धुलाई की सुविधा, डिब्बा भराव मेज, मत्स्य कढ़ी की तैयारी के लिए रसोई घर, समाप्त करने की मशीनरी (दिगुने सीवन मशीन) तापीय संसाधन डिब्बाओं के लिए भभका, शीतन टंकी आदि सुविधाएँ होती है। सिफ्ट के मार्गनिर्देशन के अनुसार मात्स्यकी निदेशालय ने संसाधन हॉल की स्थापना की और सिफ्ट, कोचिन ने मशीनरियों को खरीदकर हाल में स्थापित किया। ये सुविधाएँ अनेक प्रकार के खाने के लिए तैयार डिब्बाबन्दन मत्स्य उत्पादों के उत्पादन के लिए प्रयुक्त की जा सकती है और अभिरुचि रखने वाले उद्यमियों को प्रशिक्षण भी दे सकता है। मणिपुर सरकार के माननीय मात्स्यकी मंत्री श्री मोहम्मद अलाउद्दीन खान ने श्री लोकेश्वर सिंह, विधान सभा सदय और श्री शरद





*Commissioning of Canning Centre at Imphal -  
Dr. T.K. Srinivasa Gopal speaks*

Khan, in presence of Shri Lokeshwar Singh, MLA and Shri Sharat Kumar Singh, Director of Fisheries, Manipur.

A training programme was organized by CIFT, Cochin immediately after commissioning the plant. Dr. T.K. Srinivasa Gopal, Principal Scientist and Dr. C.N. Ravishankar, Senior Scientist imparted training on various aspects of canning fish products. Seventy participants representing State Fisheries Department, SHGs, NGOs, Private Industry, Fisheries Federations and Fisheries Co-operatives attended the training programme. Dr. S. Ashaletha, Scientist, Senior Scale coordinated the programme.

Three ready to eat products, Rohu curry in Mughlai style, Rohu curry in Manipuri style and Catla in Bengali style were prepared and acceptability studies were conducted. The products were appreciated very well by all the trainees. Many have envisaged interest in setting up canning facility at Imphal and other neighbouring states of North East.

The Community Canning Centre is the first of its kind in the whole North East of India.

A second Canning Centre was opened on 10 May, 2008 in Arunachal Pradesh at Yazalai, 60 kms up from Itangar in the hill locked village near the Ranganadi Dam site. The Centre was inaugurated by Shri M. Pertin, IAS, Commissioner of Fisheries, Govt. of Arunachal Pradesh. Dr. P.T. Mathew, Acting Head, FP Division delivered the Key Note address and explained the technological support extended by CIFT and its commitment to continue such help for strengthening the fisheries activities in the NEH region. The CIFT has supplied a semi commercial canning facility comprising of semi automatic can sealing machine, canning retort, stainless steel topped fish processing tables, plastic pouch sealing machine, weighing balance, different size vessels and accessories for fish processing work.



*Training on Canning of fish products*

कुमार सिंह, मात्स्यकी निदेशक, मणिपुर की उपस्थिति में केन्द्र को चालू कर दिया।

संयंत्र चालू करने के तुरंत बाद सिफ्ट, कोचिन ने एक प्रशिक्षण कार्यक्रम आयोजित किया। डॉ. टी. के श्रीनिवास गोपाल, मुख्य वैज्ञानिक और डॉ. सी.एन. रविशंकर, वरिष्ठ वैज्ञानिक ने मात्स्य उत्पादों के डिब्बाबन्दन की विभिन्न पहलुओं पर प्रशिक्षण प्रदान किया। राज्य मात्स्यकी विभाग, स्वयं सहायता ग्रूप, अराजपत्रित कर्मचारी, निजि व्यवसाय, मात्स्यकी संघ, मात्स्यकी सहकारिता संघ आदि से सत्तर भागीदारी प्रशिक्षण कार्यक्रम में भाग लिए थे। डॉ. एस. आशालता, वैज्ञानिक, वरिष्ठ वेतनमान कार्यक्रम का समन्वयक थी।

खाने के लिए तैयार तीन उत्पादों यानी मुगलाई स्टाइल की रोहु कढ़ी, मणिपुरी स्टाइल की रोहु कढ़ी, बंगाली स्टाइल की कतला की तैयारी की गयी और स्वीकार्यता अध्ययन भी संचालित किया गया। सभी प्रशिक्षार्थियों ने उत्पादों की सराहना की। उनमें से कई लोगों ने इंपाल और भारत के उत्तरी पूर्वी पड़ोसी राज्यों में डिब्बाबन्दन सुविधाओं की स्थापना करने में रुचि भी प्रकट की।

पूरे उत्तरी पूर्वी भारत में सामुदायिक डिब्बाबन्दन केन्द्र का, पहलीबार स्थापना हुई है।

अरुणाचल प्रदेश के याजाली, इट्टानगर से 60 की. मी. दूर के रंगनडी बाँध के नज़दीक में स्थित छोटी पहाड़ी गाँव में 10 वीं मई, 2008 में दूसरा डिब्बाबन्दन केन्द्र खुला गया। डिब्बाबन्दन केन्द्र का उद्घाटन श्री एम. पेरटिन, IAS मात्स्यकी आयुक्त, अरुणाचल प्रदेश सरकार ने किया। डॉ. पी.टी. मैथ्यु, मुख्य, म. सं प्रभाग ने मुख्य भाषण दिया और सिफ्ट द्वारा दिए गए तकनीकी सहायता को स्पष्ट किया और एन इ एच क्षेत्र पर मात्स्यकी क्रियाकलापों को बढ़ावा देने के लिए ऐसी सहायता को कायम रखने की वादा भी की। मात्स्य संसाधन कार्य के लिए सिफ्ट ने अर्ध वाणिज्यिक डिब्बाबन्दन सुविधा जिनमें अर्ध स्वयंचालित डिब्बा मुद्रण यंत्र, डिब्बाबन्दन भभका, ऊपरी सतह जंगरोधी इस्पात से युक्त मेजें, प्लास्टिक थैली मुद्रण यंत्र, तोल तराजु, विभिन्न आकार के बर्तन एवं उपसाधन आदि को वितरित किया।

## Digital Library Modernized

The Digital Library at CIFT is a single platform through which users can access information available in the digital format on LAN. The application was developed using GenISISweb which allows to create searchable digital collections containing documents in various formats on the network.

The modernized Digital Library at the Institute hosts Web OPAC, E-gateway, E-journal, E-books, Scientific publications of CIFT (Full text), Image gallery and CD/DVD Mirror Server. It functions as a single window channel to catalogue of books and journals, full text electronic journals, standards, reports, scientific papers and photo gallery of

important events in CIFT in the electronic format and other useful electronic information resources. CD/DVD Mirror Server which hosts about 56 CD-ROMs/DVDs is also available through the Digital Library.

Use of resources is governed by license agreements which restrict the use of Digital Library to CIFT community. The system is designed to be modular, allowing existing modules to be modified easily and new modules added for additional functionality. Users of the Digital Library are encouraged to add any useful contents to the Library using "add to archive" option of the CD/DVD Mirror Server.

## CUSAT VC Delivers Lecture / कुसाट के कुलपति का भाषण

Dr. Gangan Prathap, Vice Chancellor, Cochin University of Science and Technology, Cochin delivered a lecture on "In defence of open ended research" at CIFT, Cochin on 20 June, 2008.

The meeting was presided over by Dr. K. Devadasan, Director, CIFT. Delivering the invited talk, Dr. Gangan Prathap opined that "crazy ideas" of scientists should be encouraged without seeking for immediate deliverables. Tracing the history of scientific research and achievements during the past century, he reiterated that in our country we never gave credits to individual creativity during the second half of the 20th century. Quoting examples from other countries, he observed that for a country of India's size and population, the number of higher education and research institutions are pathetically poor. He compared India with China, South Korea and other countries in this respect to emphasize his point. He suggested that the number of Universities and research labs in the country should be enhanced considerably so that India can compete with other nations. The past achievements of India in this respect were due to the far sighted policies of the Nehru era. If we are to keep ourselves in the forefront, we must take science and technology as a much more important national priority.

The meeting came to a close with a formal vote of thanks by Dr. M.K. Mukundan, Joint Director, CIFT.



*Dr. Gangan Prathap delivering the lecture*

डॉ. गंगन प्रताप, कुलपति, कोचिन विश्वविद्यालय, विज्ञान व प्रौद्योगिकी, कोचिन ने सिफ्ट, कोचिन में 20 वीं जून, 2008 को "बुनियादी अनुसंधान" पर भाषण दिया।

डॉ. के. देवदासन, निदेशक, सिफ्ट बैठक के अध्यक्ष थे। भाषण देते हुए डॉ. गंगन प्रताप ने व्यक्त किया कि प्रत्यक्ष निर्णयों को माँगें बिना वैज्ञानिकों की 'सनकी चिंताओं'

को प्रोत्साहित करना चाहिए। पिछले शतकों के दौरान हुई वैज्ञानिक अनुसंधान एवं उपलब्धियों पर ध्यान देते हुए उन्होंने दोहराया कि हमारे देश में 20 वीं शतक के दूसरे अर्ध तक वैयक्तिक सृजन के लिए हम किसी को श्रेय नहीं देता है। दूसरे देशों को उद्धृत करके उन्होंने कहा है कि भारत जैसे आकार और आबादी से युक्त देश में उच्च शिक्षा और अनुसंधान संस्थानों की दयनीय कमी है। इस पर महत्व देकर उन्होंने भारत की तुलना चीन, दक्षिण कोरिया और अन्य देशों से की। उन्होंने सुझाव दिया कि देश के विश्वविद्यालयों एवं अनुसंधान कार्यशालाओं की संख्या को गणनात्मक रूप में बढ़ाना देना चाहिए ताकि उसे अन्य राष्ट्रों से मुकाबला कर सकता है। इस संबंध में भारत की पिछली उपलब्धियाँ, नेहरू युग की दीर्घ दृष्टि पॉलिसियों के कारण थे। यदि हमें आगे बढ़ना है तो हमें विज्ञान व प्रौद्योगिकी को एक महत्वपूर्ण राष्ट्रीय प्राथमिकता के आधार पर लेना चाहिए।

डॉ. एम.के. मुकुन्दन, संयुक्त निदेशक, सिफ्ट के औपचारिक धन्यवाद भाषण के साथ बैठक की समाप्ति हुई।



## Overseas Training to Smt. Bindu

Smt. J. Bindu, Scientist (Senior Scale) of Fish Processing Division, had undergone a six weeks training on "Application of High Pressure Sterilization to Fish Processing" at Department of Food Science and Technology, Ohio State University, Columbus, USA during the period 10 March to 18 April, 2008. The training was as a Borlaug Scholar under Norman E. Borlaug International Agricultural Science and Technology Fellows Programme. The programme was part of the Indo-US Agricultural Knowledge initiative of the ICAR and USDA. The training was under the mentorship of Dr. V.M. Balasubramaniam, Associate Professor, Department of Food Science and Technology, Ohio State University. The highlights of the subject under training are as follows:

High Pressure Processing (HPP) is a non-thermal food processing technique whereby food is subjected to elevated pressures (up to 700 MPa), with or without the addition of heat, to achieve microbial inactivation or to alter the food attributes. The process is also known as high hydrostatic pressure processing (HHP) and ultra high-pressure processing (UHP) and can be used to process both liquid and solid foods. High pressure processing causes minimal changes in the 'fresh' characteristics of foods by eliminating thermal degradation and achieving consumer-desired

qualities. This technology is primarily used as a powerful tool to assure product food safety while maintaining desirable texture, appearance and flavor, therefore addressing majors concerns of the consumers.

High pressure processing can be conducted at ambient or refrigerated temperatures, thereby eliminating thermally induced cooked off-flavors. It is generally observed that high pressure has very little effect on low molecular weight compounds such as flavor compounds, vitamins, and pigments compared to thermal processes. Accordingly, the quality of HPP pasteurized food is very similar to that of fresh food products and the quality degradation is influenced more by subsequent storage and distribution rather than the pressure treatment. Pressure also provides a unique opportunity to create and control novel food textures in protein-based or starch-based foods. HPP can provide shelf lives similar to thermal pasteurization. Pressure pasteurization kills vegetative bacteria and, unless the product is acidic, it requires refrigerated storage. For

foods where thermal pasteurization is not an option (due to flavor, texture or color changes), HPP can extend the shelf life by two to three fold over a non-pasteurized counterpart, and improve food safety.



*Smt. Bindu receiving the training certificate from Dr. Mark Erbaugh, Asst. Director, International Programmes in Agriculture of Ohio State University*

## Improved Utilization of Fish and Shell Fish Waste - A New Research Initiative of CIFT / मत्स्य और सीपी मत्स्य रद्दी के सुधरे प्रयोग - सिफ्ट का एक नया अनुसंधान प्रारंभ

Post harvest fishery activities and processing of fish generate considerable quantity of waste which are not useful for edible purpose. It is estimated that during handling and processing, about 40-60% of the biomass is converted to waste. The waste generated by fishery industry pose various problems of environmental pollution and the disposal of these wastes are difficult and expensive. To address these problems, different byproducts can be developed from the waste which finds various applications in different fields.

पशु पैदावार मत्स्यकी एवं मत्स्य संसाधन गणनात्मक मात्रा में रद्दी पैदा करते हैं जो खाने के लिए योग्य नहीं हैं। यह आकलित किया जाता है कि हस्तन एवं संसाधन से तकरीबन 40-60% जीवभार रद्दी के रूप में परिवर्तित हो जाता है। मत्स्यकी व्यवसाय द्वारा पैदा किए गए रद्दी पर्यावरणीय प्रदूषण जैसे विभिन्न समस्याओं का कारण बन जाता है और इन रद्दियों का निपटान करना कठिन एवं खर्चोला होता है। इन समस्याओं को सामना करने के लिए रद्दी से विभिन्न उपोत्पाद विकसित किया जा सकता है जिसका विभिन्न क्षेत्रों पर प्रयोग भी होता है।



The crustacean wastes can be converted to chitin/ chitosan and their derivatives by means of either chemical or enzymatic processes. Similarly the fin fish wastes from surimi processing plants and wastes from pre-processing centres can be converted into silage either by chemical or by biological means.

The present project aims to identify the technological needs in utilizing the waste, whereby useful products can be developed. Alternate technologies for the process of developing chitin/ chitosan derivatives like glucosamine hydrochloride, carboxy methyl cellulose etc. are to be evolved. Studies on the quality and utilization of fish calcium which can be separated from the fish waste and antibacterial, anti-inflammatory and immuno properties of chitin/ chitosan/ fish oils, squalene etc. is also envisaged. The project proposes to utilize the waste generated from different sectors of post harvest fish handling for the development of useful consumer-friendly innovative products. Prawn shell waste, fish waste, squid/ cuttle fish and surimi processing wastes are envisaged for the preparation of products for human beings and animals. The quality evaluation of the products for nutritional, nutraceutical and pharmaceutical properties are to be carried out.

The three year project is headed by Dr. A.A. Zynudheen, Scientist, Senior Scale of Fish Processing Division as the Principal Investigator. The Co-investigators in the project are Dr. P.T. Mathew, Dr. T.K. Thankappan, Principal Scientists, Shri George Ninan, Scientist, Senior Scale, Dr. R. Anandan, Senior Scientist of CIFT, Cochin and Dr. S. Suresh Kumar, Senior Lecturer of MES College, Ponnani.

It is expected that as the immediate benefits, the environmental problems due to fish processing waste will be reduced. Utilization of fishery waste for the development of byproducts will eliminate the cost of waste disposal and in turn the waste will fetch value for the processing centres. As the medium benefit, development of fortified fish products and nutraceutical products will increase the demand for fish and enhance the returns of fishermen. Innovative uses of fish based products will improve the utilization of the underutilized and unutilized fish species. As the long term benefits, it is expected that the technologies will be of use for better utilization of the fishery resources, loss reduction, employment generation and better returns to the producers. The living standards of the fishers are expected to improve.



क्रस्टेशियन रद्दियों को रासायनिक या एन्जाइमेटिक प्रक्रियाओं के जरिए कैटिन/कैटोसान और उनके व्युत्पन्नों के रूप में परिवर्तित किया जा सकता है। उसी प्रकार सुरिमी संसाधन संयंत्रों से प्राप्त मत्स्य पंख रद्दियों और पूर्व संसाधन केन्द्रों से प्राप्त रद्दियों को रासायनिक या जीव विज्ञानीय तरीकों द्वारा साइलेज के रूप में परिवर्तित किया जा सकता है।

वर्तमान परियोजना रद्दी को उपयोग करने की प्रौद्योगिकी आवश्यकता जिससे उपयोगप्रद उत्पन्नों का विकास किया जा सकता है, को पहचानने के उद्देश्य से है। ग्लूकोसामिन हाइड्रोक्लोराइड, कार्बोक्सी मीथिल सेल्युलोज आदि कैटिन/कैटोसान व्युत्पन्नों को विकसित करके एकान्तर प्रौद्योगिकियों को प्रस्तुत किया गया। मत्स्य कैल्शियम की गुणवत्ता एवं उपयोग पर जिसकी विद्युक्ति मत्स्य रद्दी से किया जा सकता है और कैटिन, कैटोसान मत्स्य तेल, स्क्वालीन आदि के प्रतिजीवाणवीय, प्रति प्रदाहात्मक एवं प्रतिरक्षित विशेषताओं का भी अध्ययन किया गया है। पशु पैदावार मत्स्य हस्तन के विभिन्न क्षेत्रों से उत्पन्न रद्दी को उपयोगी उपभोक्ता-अनुकूल नए उत्पन्नों को विकसित करने के लिए परियोजना प्रस्ताव रखा गया है। मनुष्य एवं जानवरों के लिए उपयोगी उत्पन्नों की तैयारी के लिए झींगे छिलकों की रद्दी, मत्स्य रद्दी, स्क्विड/कतला मत्स्य और सुरिमी संसाधन रद्दियों पर अनुसंधान किया गया। पौष्टिक, निष्प्रभावीय औषध विज्ञानीय विशेषताओं के मूल्यांकन के लिए उत्पन्नों का गुणवत्ता मूल्यांकन किया गया।

डॉ. ए.ए. साइनुद्दीन, वैज्ञानिक, वरिष्ठ वेतनमान मत्स्य संसाधन प्रभाग, मुख्य अन्वेषक थे। डॉ. पी.टी. मैथ्यु एवं डॉ. टी.के. तंकप्पन, मुख्य वैज्ञानिक, श्री. जॉर्ज नैनान, वैज्ञानिक, सिफ्ट, कोचिन और डॉ. एस. सुरेश कुमार, वरिष्ठ प्राध्यापक, एम ई एस कोलेज, पोन्नानी प्रोजेक्ट के सह अन्वेषक थे।

यह प्रत्याशित किया जा सकता है कि शीघ्र ही मत्स्य संसाधन रद्दी से उत्पन्न पर्यावरणीय समस्याएँ कम हो जाएगी। उपोत्पन्नों के विकास के लिए मात्स्यकी रद्दी का उपयोग रद्दी निपटान खर्च को दूर करेगा और रद्दी; लाभ की सामग्री पुष्टीकृत मत्स्य उत्पन्नों एवं उदासीन उत्पन्नों के रूप में संसाधन केन्द्रों पर मूल्य की चीज हो जाएगी। मत्स्य आधारीय उत्पन्नों के नये प्रयोग अल्प प्रयुक्त और अप्रयुक्त मत्स्य जातियों के उपयोग को सुधरेगा दीर्घकालीन फायदे के रूप में, यह प्रत्याशित है कि मात्स्यकी विभवों की श्रेष्ठ प्रयुक्ति घटाव की क्षति, रोजगारी, उत्पादकों को श्रेष्ठ प्रत्यागम की दृष्टि आदि पर प्रौद्योगिकी का उपयोग है।

## Stake Nets of Kerala - A New Publication from CIFT

Estuaries and backwaters are the backbone of marine fishery resources as they serve as the nursery for many of the penaeid prawns and fishes. Stake nets are widely used in the backwaters, estuaries and coastal areas and they play an important role in the commercial exploitation of prawns and fishes. Fishermen communities started stake net operation initially as a subsistence fishing activity. As the demand for prawns in the international markets increased, the easy profit from the stake nets attracted many, including non-fishermen. Substantial increase in the number of stake nets and the use of very small meshes in the codend have resulted in the capture of immature prawns in huge quantities, affecting the sustainability of the prawn fisheries. There are economic, political and social factors which contribute to the unbridled expansion of the stake nets, which need to be addressed judiciously and scientifically.

CIFT has tried to address the problem in a scientific way by working out optimum codend mesh sizes for stake nets targeted at different species of prawns. In this publication, authored by Dr. Saly N. Thomas, Dr. Leela Edwin and Dr. B. Meenakumari, a comprehensive review of stake nets of Kerala, in terms of its present status, environmental implications and measures for its regulation are attempted to. The various chapters deals with The licensing system, Design and structure of stake nets, Operation of stake nets, Catch characteristics, Selectivity, Factors influencing catch, Issues in the management of stake net fishery and Management measures. An exhaustive reference is also appended. The publication would be useful to researchers and personnel involved in management and regulation of fisheries. Copies of the publication, priced at Rs. 40/- can be had from The Director, CIFT, CIFT Junction, Matsyapuri P.O., Cochin - 682 029.

## Staff Research Council Meeting Held

The Annual Staff Research Council Meeting of the Institute was held at Headquarters on 24th and 28th May, 2008. All the projects under operation (including 18 ongoing and 3 new projects) were thoroughly discussed apart from the Ad hoc projects.

## Radio Talk

Dr. R. Badonia, SIC, Veraval Research Centre delivered a radio talk on 'Role of CIFT in the development of fisheries in Gujarat' on 16 June, 2008 (In Hindi).



## New Publications

The following two new publications were brought out during the period:

1. Book on Fishing traps of Assam by Dr. P. Pravin and Dr. B. Meenakumari
2. Leaflet on Improved handling and drying of Bombay duck. On 6 June, 2008 Dr. K. Devadasan, Director, CIFT released the English version and Shri Leo Colaso, Chairman, Uttan Machimar Vividh Karyakari Sahakari Society released the Marathi version of the leaflet.



Release of leaflet by Shri Leo Colaso. Also seen is Dr. K. Devadasan

## Hindi Implementation Programme

An Official Language Karyashala was conducted at Mumbai Research Centre of CIFT on 26 June, 2008 for the benefit of the staff. Dr. Sunita Yadav, Assistant Director, Kendriya Hindi Teaching Scheme (Western) was the Guest Lecturer.

## Anti Terrorism Day Observed

The Institute observed Anti Terrorism Day on 21st May, 2008. On the occasion, the staff members assembled together and took Anti Terrorism Day Pledge.

## Post Graduate Studies

### Ph. D. Awarded

**Shri A.A. Zynudheen**, Scientist, Senior Scale, FP Division, CIFT, Cochin was awarded Ph. D. degree of Central Institute of Fisheries Education (Deemed University), Mumbai for his thesis entitled, "Biochemical, microbiological and nutritional evaluation of fermented fish silage". He worked under the guidance of Dr. K.G. Ramachandran Nair, former Head, Fish Processing, CIFT, Cochin.



Dr. A.A. Zynudheen

## Personnel News

### Participation in Seminars/Symposia/Workshops etc.

- ❑ **Dr. K. Devadasan**, Director, **Dr. G.R. Unnithan**, Principal Scientist, **Dr. V. Geethalakshmi**, **Dr. Nikita Gopal**, Senior Scientists and **Smt. P. Jeyanthi**, Scientist – Unit writers meeting organized by School of Agriculture, IGNOU, New Delhi at CIFT, Cochin (30 June)
- ❑ **Dr. D. Imam Khasim**, SIC, Visakhapatnam – Training on Techniques of fish dressing, processing and value addition, MANAGE, Hyderabad (5 May) (As resource person)
- ❑ **Dr. R. Badonia**, SIC, Veraval – XX Meeting of ICAR Regional Committee No. IX, CAZRI, Jodhpur (26-27 June)
- ❑ **Dr. M.M. Prasad**, SIC, Burla – National symposium on Biodiversity management and sustainable use of resources, GM College, Sambalpur (19-20 April). He also presented the following papers in the Symposium
  - i. Conservation and sustainable use of ichthyic diversity in Hirakud reservoir by M.M. Prasad.
  - ii. Development of value added products from low cost fish as a simple means for sustainable use of ichthyic fauna in Hirakud reservoir by Jyothirmayee Sahu and M.M. Prasad
- ❑ **Dr. M.M. Prasad**, SIC, Burla – Brain storming meet on Aquaculture – 2025: Challenges and opportunities, Bhubaneswar (7-8 June). Dr. Prasad delivered a talk on 'Processing and product development of fish and shell fish from aquatic resources: problems and practices'.
- ❑ **Dr. P.N. Joshi**, HOD, Engg. – Meeting of the Task Force on Infrastructure development for preparation of fisheries master plan of Kerala, Thiruvananthapuram (23 April)
- ❑ **Dr. P.N. Joshi**, HOD, Engg. – International workshop on Cleaner production and energy conservation for sustainability, Cochin (24-26 June). He also presented a paper entitled, "Renewable energy for cleaner production of dry fish".
- ❑ **Dr. P.N. Joshi**, HOD, Engg., **Dr. B. Meenakumari**, HOD, FT, **Dr. P.T. Lakshmanan**, Principal Scientist and **Dr. S. Ashaletha**, Scientist, Sr. Scale – Workshop on Fisheries master plan for Kerala, CMFRI, Cochin (25-26 April)
- ❑ **Dr. Nirmala Thampuran**, HOD, MFB – Seminar on Women in science: a career in science, CUSAT, Cochin (5 April)
- ❑ **Dr. B. Meenakumari**, HOD, FT – Annual review meeting on The project validation of PFZ along Gujarat coast, INCOIS, Hyderabad (15 April)
- ❑ **Dr. B. Meenakumari**, HOD, FT and **Dr. P. Pravin**, Senior Scientist – Meeting of Consortium Implementation Committee (CIC) of NAIP on Tuna fisheries, CMFRI, Cochin (24 April)
- ❑ **Dr. P.T. Mathew**, Acting HOD, FP – Environment Day celebrations of St. Therasas College, Ernakulam (8 June). He also made a presentation on 'Eco-friendly products from fish waste'.
- ❑ **Dr. P.T. Mathew**, Acting HOD, FP and **Dr. P. Pravin**, Senior Scientist – Brain storming session on Development of island fisheries – Challenges and opportunities, CARI, Port Blair (21-22 June). Dr. Mathew made a presentation on 'Processing of tuna and preparation of value added products'.
- ❑ **Dr. T.V. Sankar**, Acting HOD, B&N – Workshop on Outreach activity on nutrient profiling, ICAR, New Delhi (29-30 April)
- ❑ **Dr. T.V. Sankar**, Acting HOD, B&N and **Dr. Leela Edwin**, Principal Scientist – Mid term review meeting of NAIP on Responsible harvesting and utilization of selected small pelagics and freshwater fishes, ICAR, New Delhi (3 June)
- ❑ **Dr. M.R. Boopendranath**, Principal Scientist – Meeting of the Technical committee for establishing Oceanarium, Cochin (11 June)
- ❑ **Dr. M.R. Boopendranath**, Principal Scientist – Meeting



*Dr. Prasad chairing a Technical Session*

- ❑ **Dr. D. Imam Khasim**, SIC, Visakhapatnam and **Dr. G. Rajeswari**, Senior Scientist – Meeting in connection with closed fishing season, State Fisheries Department, Visakhapatnam (25 April)
- ❑ **Dr. M.K. Mukundan**, HOD, QAM and **Dr. P.T. Mathew**, Acting HOD, FP – Kerala Environment Congress – 2008, KILA, Thrissur (22-24 April)



- of the Technical team in connection with the purchase of equipment for deep sea fishing project of Matsyafed, Cochin (21 June)
- **Shri M. Nasser and Dr. Leela Edwin**, Principal Scientists – Capacity building programme on Business Incubator for ICAR-BPDs under Component -1 of NAIP, ICRISAT, Hyderabad (8-9 April)
  - **Shri M. Nasser and Dr. Leela Edwin**, Principal Scientists – Workshop on Technology business incubation: Technopreneur 2008, Cochin (17 May)
  - **Dr. Leela Edwin**, Principal Scientist – First annual workshop of NAIP, New Delhi (3 June)
  - **Dr. G. Rajeswari**, Senior Scientist – Meeting on the subject matter of Govt. vessels, Port Trust, Visakhapatnam (6 June)
  - **Dr. P. Pravin**, Senior Scientist – Workshop on Fisheries management, Cochin (23 April). Dr. Pravin delivered an invited lecture on 'Tuna fishing'.
  - **Dr. Femeena Hassan**, Senior Scientist – One day awareness programme on British retail consortium, Cochin (20 June)
  - **Shri V. Radhakrishnan Nair**, Scientist, Sr. Scale – Training programme on Decision support system for geospatial knowledge management for sustainable livelihoods security, NAARM, Hyderabad (4-13 June)
  - **Shri P. Muhamed Ashraf**, Scientist, Sr. Scale – Meeting on District agromet advisory services for the state of Kerala, IMD, Thiruvananthapuram (20 June)
  - **Dr. A.R.S. Menon**, Tech. Officer (T9) – Expert committee meeting to strengthen the activities of Production-cum-Training Centres of the VHS schools, Thiruvananthapuram (30 June)
  - **Dr. C. Jessy Joseph, AD (OL)** - 13th National Official Language Seminar, Gangtok (27-29 May)
  - **Shri R. Anil Kumar and Shri A. Geroge Joseph**, AAO's – Training programme on Pension and other retirement benefits, ISTM, New Delhi (7-11 April)
  - **Shri K.S. Sreekumaran**, AF&ACO and **Smt. P.K. Shyma**, Tech. Officer (T5) – Training programme on Technical and administrative support for consortia-based research in agriculture, NAARM, Hyderabad (21-27 May)

- **Dr. K. Sobha**, Tech. Officer (T5) and **Shri P. Shankar**, T4 (Hindi Translator) – National Official Language Seminar on Coastal zone management, CMFRI, Cochin (30 May)
- **Shri P. Shankar**, T4 (Hindi Translator) – Seminar on Prof. Ravindranath Srivastava: Scientific scholar of Hindi language, Cochin (10-11 April)
- **Shri Santhosh Alex**, T4 (Hindi Translator) – Meeting of Town Official Language Implementation Committee, Visakhapatnam (9 May)
- **Shri T. Viswanathan**, PA – 22nd Induction programme for Personal Assistants (Direct Recruits), ISTM, New Delhi (21 April – 2 May)

## Personalia

### Promotions

1. Shri K.K. Sasi, UDC, Cochin as Assistant
2. Smt. Shiji John, LDC, Cochin as UDC
3. Shri A.R. John, SSG III, Cochin as SSG IV

### Transfers

1. Shri N. Viswambharan, Admn. Officer, CMFRI, Cochin to CIFT, Cochin
2. Shri B. Mahanandia, SSG III, Cochin to Burla
3. Shri D.L. Pattanaik, SSG III, Cochin to Burla
4. Shri T.N. Banchoor, SSG II, Cochin to Burla
5. Shri S.N. Dash, SSG II, Cochin to Burla
6. Shri Amit Vengaraj, SSG I, Cochin to Burla

### Retirements

1. Shri A.C. Joseph, Principal Scientist, Cochin
2. Shri P. Bahuleyan, Tech. Officer (T5), Cochin
3. Shri E.K. Balakrishnan, Tech. Officer (T5), Cochin
4. Shri P.A. Shanmughan, T2 (Tindal), Cochin (Voluntary Retirement)
5. Smt. M.S. Susanna, Assistant, Cochin
6. Shri C. Kamaraju, SSG IV, Visakhapatnam
7. Shri B. Sivanadham, SSG II, Visakhapatnam
8. Shri K.C. Mohanan, Tea Maker, Cochin

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