



भाकृ अनुप
ICAR

मत्स्य प्रौद्योगिकी समाचार Fish Technology Newsletter

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International Symposium on Remote Sensing and Fisheries

CIFT, Cochin in association with the Society of Fisheries Technologists (India), Cochin hosted the International Symposium on Remote Sensing and Fisheries organized by the SAFARI Initiative (Societal Applications in Fisheries and Aquaculture using Remotely-sensed Imagery) during 15-17 February, 2010. The symposium highlighted case studies using Earth observation data with contributions from key fisheries systems around the world. About 200 delegates including delegates from 38 foreign countries attended the three day Symposium.

The Symposium was formally inaugurated on 15 February, 2010 by Dr. Shailesh Nayak, Secretary, Ministry of Earth Sciences, Govt. of India and President, Indian Society of Remote Sensing. Dr. B. Meenakumari, Director, CIFT welcomed the gathering. The inaugural function was presided over by Dr. P. Krishnaiah, IAS, Chief Executive, NFDB, Hyderabad. A special address was given by Dr. Shubha Satyendranath, Plymouth Marine Laboratory, U.K.

The Symposium addressed the following themes: (a) Operational Use of Remote Sensing for Fish Harvesting, (b) Earth Observation Ecosystem Indicators to assess Fish Health, Growth and Recruitment, (c) Use of Remote sensing in Aquaculture, (d) Implications of Climate Change on Fisheries, (e) Food Security and Sustainability, (f) Remote Sensing in the Detection and Monitoring of Harmful Algal Blooms as Pertaining to Fisheries and Aquaculture, (g) Earth Observation Satellite Data in Fisheries Models, and (h) Remote Sensing Applications in the Management of Coastal Zones and Fisheries.



Dr. Shailesh Nayak formally inaugurating the Symposium on Remote sensing

केन्द्रीय मात्स्यकी प्रौद्योगिकी संस्थान

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

Central Institute of Fisheries Technology

CIFT Junction, Matsyapuri P.O., Cochin - 682 029



The Symposium had 12 sessions on various key topics. During the Second Session, the following invited speakers gave Key Note addresses. Dr. Shailesh Nayak, talked on 'Remote sensing applications to fisheries: Indian initiative to the improvement of the socio-economics in fishing communities'. Dr. Kenneth Sherman, Director, Narragansett Laboratory and Office of Marine Ecosystem Studies at the Northeast Fisheries Science Centre, National Oceanic and Atmospheric Administration in Rhode island gave a talk on 'The application of satellite remote sensing for assessing productivity and fisheries yields of the world's Large Marine Ecosystems'. Dr. Jeffrey J. Polovina, Chief, Ecosystems and Oceanography Division, Pacific Island Fisheries Science Centre, Honolulu gave a talk on 'Applications of satellite remotely sensed data in research on Loggerhead sea turtle pelagic ecology' in Session 4. The theme of Sessions 3 and 4 was 'Remote sensing for fish harvesting and related issues'. Ten papers were presented during the Sessions.

Session 5 focused on 'Remote sensing for ecosystem-based management of fisheries' which was chaired by Dr. Lasse Pettersson. Dr. Emmanuel Chassot, Fisheries Scientist, Institut de Recherche le Development, France in his key note address focused on 'Marine primary production constraints on world fish catch'. Four papers were presented in the Session. Session 6 and 7 dealt with 'Remote sensing of harmful algal blooms' which was chaired by Dr. Joji Ishizaka. Seven papers were presented in this session.

Session 8 focused on 'Remote sensing data in fisheries models'. Dr. Simon Jennings, Lead Scientist, Centre for Environment, Fisheries and Aquaculture Science, Lowestoft, U.K. delivered the key note address and spoke on 'Linking remote sensing data and food web models to predict consumer biomass in the global oceans'. Sessions 9 and 10 focused on 'Implications of climate on fisheries'. The key



A view of audience

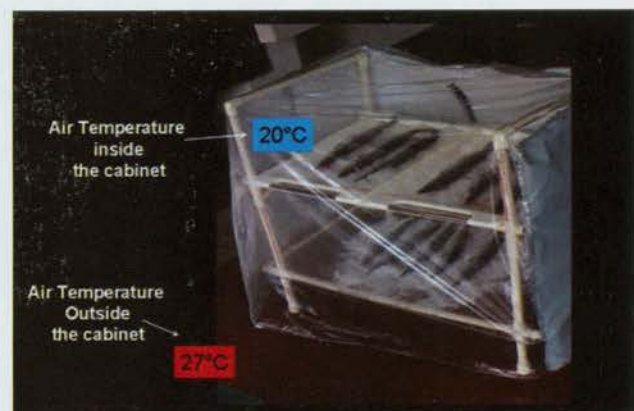
note speaker was Dr. Cara Wilson, Principal Investigator of the West Coast Regional Node of the NOAA CoastWatch Programme, Honolulu. She talked on 'The rocky research to operations transition of ocean colour - What's fisheries got to do with it?'. Eight papers were presented in the Session. Sessions 11 and 12 focused on 'Remote sensing applications in the management of coastal zones and fisheries'. Dr. Sei-ichi Saitoh, Graduate School of Fisheries Sciences, Hokkaido University, Japan, the key note speaker talked on 'An operational use of remote sensing and marine-GIS for sustainable fisheries'. Seven papers were presented in the technical session.

Poster sessions were held for two days during the Seminar. Thirty five posters were displayed by researchers from different countries. The Plenary Session was held on 17th February, 2010. The chairpersons of the various sessions attended the session and draft recommendations were made.

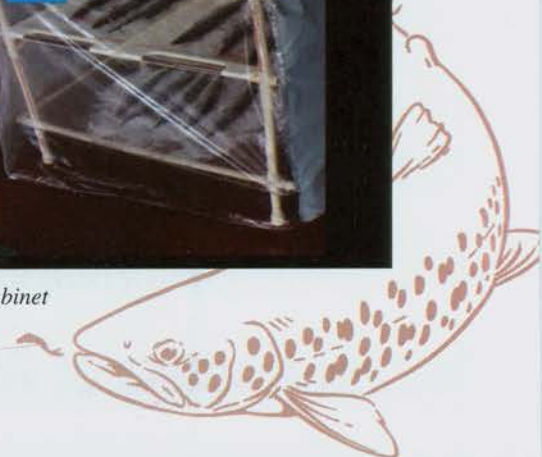
News from the Research Front

Insulated Fish-display Cabinet for Hygienic Display of Fish

It is well known that improper handling of fish accounts for huge post-harvest losses. Temperature abuse is the single most factor responsible for the loss of quality of fresh fish. Generally, in urban retail markets fish are displayed on planks, exposing the fish to dirt and flies. Moreover, ice melts faster when exposed directly to the outside air. In order to address these problems, an insulated fish-display cabinet was designed and fabricated for the display of fish during sale by the fisher women in urban retail fish markets. The insulated fish-display cabinet is a dismantable unit having two racks on which plastic trays can be placed for keeping fish and ice. The front portion of the display cabinet is made of transparent material for the consumers to see through.



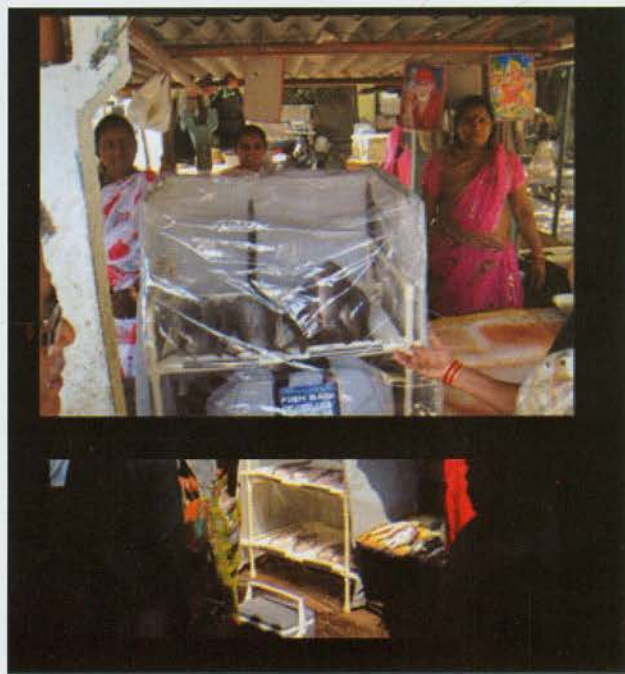
Insulated fish display cabinet





Contamination with flies and dust can be minimized totally by using insulated fish-display cabinet

The sides are covered with three layered insulation (outer cotton coated rexin, middle thermofoam and inner plastic sheet) to slow the melting of ice and prevent contamination with dust and flies. The air temperature inside the cabinet (20°C) is lower than the room temperature (27-31°C). The fish contamination with flies and dust is minimised totally and it improves the aesthetic appeal of fish markets. The insulated fish-display cabinet was demonstrated to fisherwomen and fish consumers in urban retail fish markets of Visakhapatnam. The use of fish display cabinet at fish markets can help to maintain freshness of fish and minimize



Demonstration of insulated fish-display cabinet to fisherwomen and urban fish consumers

the post-harvest losses of the highly nutritious fish and shrimp. Use of the display cabinets in local fish markets by fisherwomen vendors will go a long way in improving the sanitary and hygienic conditions in fish markets.

- Dr. D. Imam Khasim and Dr. B. Madhusudana Rao
Visakhapatnam Research Centre of CIFT

Biomedical Applications of Seafood Products

Ocean, the biggest wonder in the universe, covers almost three quarters of the surface of earth. Marine organisms produce many bioactive substances, which are having a lot of potential biomedical and pharmaceutical applications. Seafood is an excellent resource for proteins, vitamins, trace elements and polyunsaturated fat (Omega-3 Fatty Acids). There is a growing awareness of beneficial role of fish and other marine foods in human nutrition, particularly the importance of seafood in lowering the risk of major nutrition related chronic diseases.

Marine Lipids - PUFA

Fish and other marine life are rich sources of ω -3 Fatty Acids (Eicosapentaenoic acid and Docosahexaenoic acid). EPA and DHA constitute 70-75% of total Polyunsaturated fatty acid. Marine organisms accumulate this through their food chain.

Antilipidemic activity

EPA and DHA play a major role in maintaining health

by regulating the lipid metabolism. They exert hypolipidemic activity by decreasing cholesterol, triglycerides, LDL and VLDL-cholesterol in the systemic circulation.

Anticancer and anti-arthritis property

It is well evident from experimental and clinical investigations that consumption of EPA and DHA are beneficial in alleviating a wide range of cancers. Intake of Omega-3 Fatty Acids also reduces the activities of cartilage destroying enzymes responsible for joint destruction in rheumatoid arthritis.

Antidiabetic activity

Impaired insulin production and/or function leading to impaired glucose metabolism is characteristic of adult onset Type -II diabetes. Excess weight can be controlled with diet and exercise. Diet containing Omega-3 Fatty Acids will allow tissue to more efficiently absorb and metabolize glucose in the absence of insulin.





Squalene

Squalene, an isoprenoid molecule present in shark liver oil in large quantities, has been reported to possess antilipidemic, antioxidant and membrane stabilizing properties. Squalene revitalizes weakened body cells and helps to revive cell generation. Its chief attribute is the protection of cells from oxidation reactions. It prevents the formation of harmful lipid peroxide. Squalene carries oxygen at the cellular level, causing further improvement in organ function through cellular metabolism.

Fish Proteins

- Incorporated as a protein supplement in human diet.
- High content of highly digestible protein, available lysine, methionine, cysteine and minerals makes fish protein a highly nutritious product.
- Lessen the risk of microalbuminuria.
- Improves blood lipid profile of animals and human.
- Used to formulate infant foods, soups and protein containing beverages to enhance their protein content and nutritive value.
- Used as milk replacer.
- Fish protein hydrolysates have inhibitory effect on both lipoxigenase and cyclo oxygenase pathways.
- Synergistic effect when used with synthetic antioxidants.
- FPH contains some important bioactive peptide fraction like gastrin, calcitonin gene related peptides (CGRP) and some growth promoting peptides which play a key role in metabolic path ways.
- FPH suppresses both hypertension and atherogenesis.

Collagen

- Fins, skin and air bladder are rich sources of pure collagen.
- It is biocompatible, non-antigenic and non-toxic nature and biodegradable.
- It is used in the production of anti-thrombogenic surfaces, burn cover dressings and controlled drug delivery systems.
- It is also used as a bone filling material.

- Premature aging of skin due to hyperglycemia attack in diabetic patients can be cured using collagen.
- Surgical suture can be made from fish gut collagen
- Collagen-chitosan membrane is used as a barrier device for guided tissue regeneration in human periodontal infrabony and furcation defects.

Vitamins

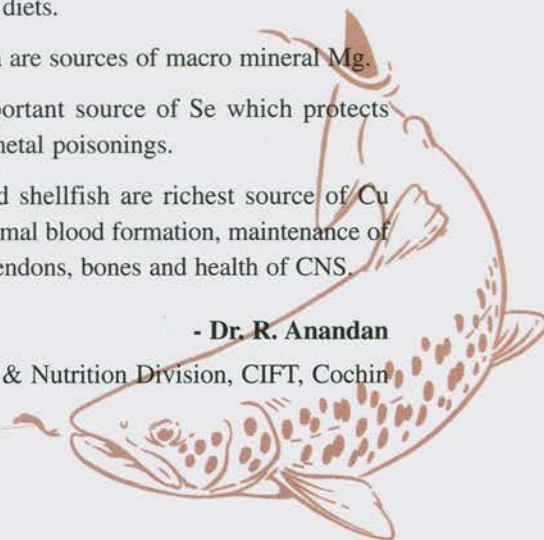
- Fish meat is a good source of B Vitamins (red meat and white meat). Fish liver, eggs, milk and skin are good sources of B1, Riboflavin, Pyridoxine, Folic acid, Biotin and B12. Hence it is involved in prevention of various anemias including pernicious anemia.
- Fatty or semi fatty fishes are excellent sources of Vitamin D. Hence it plays an important role in calcium and phosphorous metabolism.
- Anti-hemorrhage factor Vitamin K is also present in fish.
- In fish flesh Vitamin E occurs as Tocopherol, a potent antioxidant Vitamin involved in counteraction of free radical mediated oxidative damage to the cell membranes. Large quantity of Vitamin E (500-3000 IU) is present in liver and body oils.
- Hepatic reserves of Vitamin A is much greater in fish compared to that in mammals and birds. Liver oils from shark and Tuna are rich in Vitamin A and D.

Minerals

- Fish is a valuable source of Ca, P, Fe, Cu and Se.
- Fish calcium powder from back bone of tuna can be used to combat calcium deficiency in diet, particularly of children.
- Marine fish have high content of iodine which is good for brain and thyroid function.
- Sodium content is low in fish and makes it suitable for low sodium diets.
- Snails and Tuna are sources of macro mineral Mg.
- Tuna is an important source of Se which protects against heavy metal poisonings.
- Crustaceans and shellfish are richest source of Cu essential for normal blood formation, maintenance of blood vessels, tendons, bones and health of CNS.

- Dr. R. Anandan

Biochemistry & Nutrition Division, CIFT, Cochin





Publications

Research Papers

1. Balasubramaniam, S. and Charles Jeeva, J. (2009) – Technology transfer management and organizational constraints in fisheries, In: *New initiatives in aquaculture extension* (Eds: De, H.K., Kumaran, M. and Saha, G.S.), Narendra Publishing House, Delhi, p: 61-75.
2. Bindu, J., Ravishankar, C.N., Srinivasa Gopal, T.K. and Mallick, A.K. (2010) – Investigations on shelf life and heat penetration attributes of ready to eat 'Fish Peera' from Anchovy (*Stolephorus commerson*) in retort pouches, *J. Food Process. & Preserv.*, **34**: 207-222.
3. Boopendranath, M.R. and Shahul Hameed, M. (2010) – Energy analysis of the stake net operations, in Vembanad Lake, Kerala, India, *Fish. Technol.* **47**(1): 35-40.
4. Chakrabarti, R. (2010) – An easy method to store Bombay Duck (*Harpodon nehereus*) at tropical ambient temperature, *Fishing Chimes* **12**: 50-51.
5. Dhanya Ramachandran, Mukund Mohan and Sankar, T.V. (2010) – Effect of thermal modification on physicochemical and functional properties of myofibrillar proteins from tilapia, *Oreochromis mossambicus* (Peters, 1852), *Fish. Technol.* **47**(1): 41-50.
6. Geethalakshmi, V., Nikita Gopal and Unnithan, G.R. (2010) – Analysis of Indian shrimp exports and its prices in major international markets, *Fish. Technol.* **47**(1): 79-84.
7. Geroge Ninan, Joseph, A.C., Zynudheen, A.A., Abbas, A.R. and Ravishankar, C.N. (2010) – Effect of hydrocolloids as an ingredient of batter mix on the biochemical, physical and sensory properties of frozen stored coated shrimp, *Fish. Technol.* **47**(1): 57-64.
8. Lalitha, K.V., Surendran, P.K. and Nirmala Thampuran (2010) – Intestinal bacterial flora of *Macrobrachium rosenbergii* (De Man, 1879) from freshwater farms in Kerala, India, *Fish. Technol.* **47**(1): 65-70.
9. Mohan, C.O., Ravishankar, C.N. and Srinivasa Gopal, T.K. (2010) – Active packaging of fishery products: A review, *Fish. Technol.* **47**(1): 1-18.
10. Rakesh Kumar, Surendran, P.K. and Nirmala Thampuran (2010) – Role of enrichment period for PCR detection of *Salmonella* in seafood, *Fish. Technol.* **47**(1): 71-78.
11. Sanjoy Das, Surendran, P.K. and Nirmala Thampuran (2010) – Detection and differentiation of *Listeria monocytogenes* and *Listeria innocua* by multiplex PCR, *Fish. Technol.* **47**(1): 91-94.
12. Sreenath, P.G., Abhilash, S., Ravishankar, C.N., Anandan, R. and Srinivasa Gopal, T.K. (2009) – Heat penetration characteristics and quality changes of Indian Mackerel (*Rastrelliger kanagurta*) canned in brine at different retort temperatures, *J. Food Process Engg.*, **32**: 893-915.
13. Yesudhasan, P., Srinivasa Gopal, T.K., Ravishankar, C.N., Lalitha, K.V. and Ashok Kumar, K. (2009) – Effect of modified atmosphere packaging on chemical, textural, microbiological and sensory quality of seer fish (*Scomberomorus commerson*) steaks packed in thermoformed trays at 0-2°C, *J. Food Process. & Preserv.*, **33**(6): 777-797.

Training Programmes

Cochin

1. Fermentation of marine bacteria for production of industrial enzymes (15 December, 2009 to 14 January, 2010)
2. Extraction of gelatin from tuna fish skin (1 January - 20 March)
3. HACCP concepts (11-14 January, 2-5 February, 16-22 February & 1-3 March)
4. Analytical methods for PCBs (11 -15 January)
5. Value added fishery products (11-16 January)
6. Modern analytical techniques in biochemistry (11-19 January)
7. Fish processing (11-25 January)
8. Laboratory methods for the microbiological quality assessment of seafoods (11-27 January)
9. Analytical techniques in Microbial biotechnology (11-30 January)
10. Molecular methods for characterization of seafood borne pathogens (11 January - 10 February)
11. Isolation and identification of seafood borne pathogens (11 January - 10 February)





HACCP concepts (Cochin) - Participants and faculty

12. Bacteriological quality of water supplied by tankers in Cochin and effect of chlorination on faecal indicator organisms (11 January - 9 March)
13. A comparative account of biochemical composition of Sin Croaker and its hydrolysate (11 January - 27 March)
14. Nutritional evaluation of hygienically dried (solar) fishery products (*Sardinella longiceps* and Threadfin bream) (25 January - 6 March)
15. Monitoring the nutritional quality of certain commercial fishery products from the super markets of Cochin (25 January - 6 March)
16. Biochemical composition of fish and extraction of collagen from fish skin (1 February - 24 March)
17. Clam meat processing (8-10 February)
18. Development of ready-to-use dry fish products from lizard fish (16 February - 12 March)



HACCP concepts (Veraval) - Participants and faculty

19. Effect of processing temperature on the quality of 'Cobia' packed in TFS cans and retortable pouches (16 February - 16 March)
20. Fish processing (15-20 March)
21. Molecular finger printing of *Staphylococcus epidermids* using ERIC PCR and Ribotyping PCR (17-27 March)

Visakhapatnam

1. Hygienic fish drying (22-23 February)

Veraval

1. HACCP concepts (16-20 March)

Mumbai

1. HACCP in seafood processing (2-5 February)

Outreach Programmes

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

1. Community based fish processing at Chellanam during 1-2 February, 2010.
2. Preparation of value added oyster products at Moothakunnam during 8-9 February, 2010.
3. Fish cutting techniques and Hygienic handling of fish at SIFT, Kakinada during 17-18 February, 2010.
4. Hygienic fish drying at Chepala Uppada, Visakhapatnam during 22-23 February, 2010.
5. Post harvest technology at Danavaipeta, East Godavari district, Andhra Pradesh on 5 March, 2010.
6. Value added fishery products at Kannur during 7-8 March, 2010.



Training programme at Chellanam in progress

7. Value added products from tuna at Pullani, North Thuravoor, Angamally on 29 March, 2010.





Participation in Exhibitions

During the quarter the Institute participated in the following exhibitions:

1. Exhibition organized by Mararikulam North Grama Panchayath at Mararikulam, Alappuzha district during 27 December, 2009 to 3 January, 2010.
2. Exhibition organized as part of the International Conference on 'Recent advances in lobster biology, aquaculture an management', NIOT, Chennai during 5-8 January, 2010.
3. 'JIVA 2010' - Exhibition organized by the Department of Animal Husbandry, Govt. of Kerala at Kottiyam, Kollam district during 8-11 January, 2010.



Visitors at CIFT stall at 'JIVA 2010'

4. Exhibition held in connection with the National seminar on 'Integrated management of water resources with reference to biodiversity and national livelihood', Bhopal during 16-17 January, 2010.
5. Exhibition held in connection with National seminar on 'Challenge for sustainable management of fishery resources in Indian EEZ', Visakhapatnam on 20 January, 2010.
6. Exhibition held in connection with the Workshop on 'Shelf life: Emerging trends in nutrition and food microbiology', V.S. Krishna Govt. College, Visakhapatnam during 31 January to 1 February, 2010.

7. Exhibition held in connection with 'Kisan Mela', RARS, ANGR A.P. Agril. University, Anapakalli, Visakhapatnam during 31 January to 1 February, 2010
8. 'Annam' Food Festival and exhibition, Kozhikode during 11-15 February, 2010.
9. Exhibition organized as part of the International Symposium on 'Remote sensing and fisheries', Cochin during 15-17 February, 2010.
10. 17th India International Seafood Show organized by MPEDA, Cochin at Chennai during 19-21 February, 2010.
11. 'Krishi Darpan' organized by CIFT at Ernakulam during 11-12 March, 2010.



Dr. Leena Nair, IAS, Chairman, MPEDA, Cochin visiting CIFT stall at International Seafood Show



Visitors at CIFT stall at 'Krishi Darpan'

ZTM & BPDU (South Zone) Meeting

The Zonal Technology Management & Business Planning and Development Unit (South Zone) at CIFT, Cochin organized a Meeting cum Workshop for the 22 ICAR Research Institutes coming in its zone on 12th and 13th March,

2010, at Cochin. The meeting was meant for a faster adoption and implementation of the new scheme of Intellectual Property Management and Technology Transfer/ Commercialization within ICAR. The inaugural meeting





was held on 12th March. Shri M. Nasser, Principal Investigator, ZTM & BPDU (South Zone) welcomed the gathering and briefly explained about the objectives of the workshop. Dr. B. Meenakumari, Director, CIFT and Chairman, ZITMC, gave an overview of the South Zone ZTM & BPDU. Shri K.R. Vishwambharan, IAS, Vice Chancellor, Kerala Agricultural University, Thrissur, formally inaugurated the workshop by lighting the traditional lamp. Felicitations for the meeting were offered by Dr. G. Syda Rao, Director, CMFRI, Cochin and Dr. Sanjeev Saxena, Principal Scientist (Policy & IPR), ICAR, New Delhi. Dr. Leela Edwin, Co- PI, ZTM & BPDU (South Zone) proposed the vote of thanks.

The workshop was held in four Technical Sessions. On the first day, the Technical Session I was on "Basics of Zonal Technology Management & Business Planning and Development." It was chaired by Dr. B. Meenakumari, Director, CIFT and Chairman, ZITMC and Co-chaired by Dr. Sanjeev Saxena, Principal Scientist (Policy & IPR), ICAR, New Delhi. Dr. A.R.S. Menon and Shri Nitin Singh were the Rapporteurs. Dr. Sanjeev Saxena presented an inspiring talk on "ICAR Policy Perspectives and Guidelines." The Technical Session II was on "Asset Management." The Theme Talk of the session was given by Shri V. Raghuram, Regional Manager, NRDC, Bangalore, on "Priorities, Issues and Ideas for IP Management and Technology Commercialization in Research Environment." This was followed by presentations on the ITMU status sharing experiences in IP Management at Institute level. The 22 ICAR Institutes with expertise on various fields like Rice, Sorghum, Sugarcane, Oil seeds, Horticultural Crops, Oil Palm, Plantation Crops, Tuber Crops, Banana, Cashew, Spices, Tobacco, Biological Control, Dry Land Agriculture, Meat, Poultry, Animal Nutrition and Physiology, Animal Disease Monitoring and Surveillance, Brackishwater Aquaculture, Marine Fisheries and Fisheries Technology presented their ITMU activities. The presentations were centered on the capabilities and capacities of each Institute.

The Day 2 started with the Technical Session III on "Planning and Development of IP Business." The meeting was chaired by Dr. B. Meenakumari and Co-chaired by Dr. Sanjeev Saxena. Dr. K. Gopakumar, Former Deputy Director General (Fisheries), ICAR, New Delhi delivered the Theme Talk on "IPR in relation to TRIPS agreement in the Indian context." Shri Nasser, Principal Investigator, ZTM & BPD (South Zone) gave an "Overview of IP assets in South Zone". This was followed by the presentation of Dr. R. Kalpana Sastry, Head, Agricultural Research Systems Management and Policies Division, NAARM, Hyderabad on "Technology Transfer through IP Management in NAARS." The presentation on "Agro web Digital Dissemination System for Indian Agricultural Research," a centralized online information system of patent application by ICAR Institutes,



Shri K.R. Vishwambharan, IAS inaugurating the Workshop

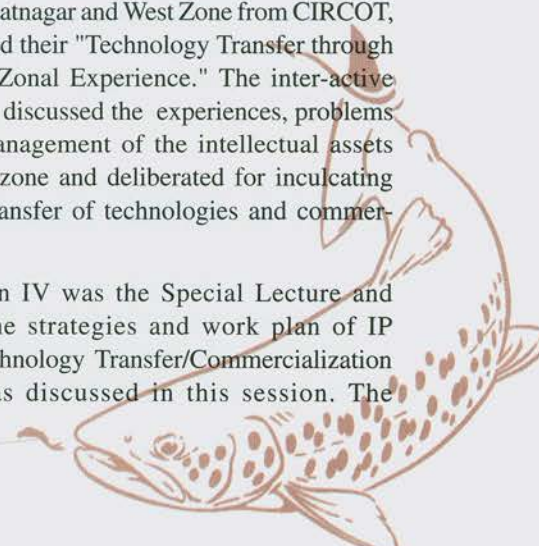
was made by Dr. R.C. Agrawal, Principal Scientist, NBPGR, New Delhi and an actual demonstration of the software was given by Dr. Himanshu, Scientist, Sr. Scale, ARIS Cell, ICAR.



Participants of the Workshop

The afternoon session started with presentations by Member Secretaries of other ZTM & BPDUs of ICAR. Dr. J.R. Rao, Member Secretary, North-I Zone from IVRI, Izatnagar and Dr. S.B. Roy, Member Secretary, East Zone from NIRJAFT, Kolkata presented their "Experiences and lessons learned during IP Management in respective Zone." Dr. Rahul Srivastava and Dr. S. Pal, Business Managers of North-I Zone, IVRI, Izatnagar and West Zone from CIRCOT, Mumbai also presented their "Technology Transfer through Business Incubation-Zonal Experience." The inter-active session that followed, discussed the experiences, problems and issues on the management of the intellectual assets generated within the zone and deliberated for inculcating business culture in transfer of technologies and commercialization.

Technical Session IV was the Special Lecture and Plenary Session. The strategies and work plan of IP Management and Technology Transfer/Commercialization within the zone was discussed in this session. The





proceedings and recommendations of the Technical Sessions were presented by Dr. A.R.S. Menon. The remarks on the same were offered by Dr. Sanjeev Saxena and the concluding remarks were presented by Dr. B. Meenakumari. Dr. P.T.

Mathew, Principal Scientist, CIFT and Nodal Officer extended the vote of thanks to all the delegates who attended the meeting. The meeting came to an end by reciting the National Anthem.

Workshop on Accounts Management

Under the NAIP on 'Responsible harvesting and utilization of selected small pelagics and freshwater fishes' fisherwomen, selected from different SHGs under the Chellanam-Kandakadavu Fisherman Welfare Development Cooperative Society, a core partner in the project, have been organized into three post harvest activity clusters and they are being trained in operation and management of a community based processing unit. In continuation with the entrepreneurship and skill development activity, a one day workshop was organized by the CIFT, Cochin and the Institute of Chartered Accounts of India (ICAI), Ernakulam Branch on 7th January, 2010. Thirteen fisherwomen of the three clusters participated in the workshop. The workshop was held at the ICAI, Ernakulam.

The workshop began with a brief inaugural session in which Dr. Nikita Gopal, Senior Scientist, CIFT gave a brief about the objectives of the project and the need to develop skill in fisherwomen as part of their entrepreneurship development. Shri S. Venugopal, Chairman, Shri P.G. Sajeev, Former Chairman, Shri Vivek Krishna Govind, Vice-Chairman and Shri Saji Mathew, Secretary, ICAI, Ernakulam Branch spoke about the functions of the Institute as well as their willingness in associating with socially relevant programmes such as the current one.

The Accounts Management session was handled by Shri P.G. Sajeev, Former Chairman and Smt. Febeena, Faculty

of ICAI. The necessity of keeping accounts was explained and the basic registers to be maintained were explained with simple examples. The Session was an interactive one in which the fisherwomen participated actively.



Dr. Nikita Gopal briefing about the objectives of the Workshop

Trainers Training Workshop

Under the network project on 'Capacity building of coastal fisherwomen through post harvest technologies' a two day Trainers Training Workshop was organized by the CIFT, Cochin in association with Directorate of Research on Women in Agriculture (DRWA), Bhubaneswar. The main aim of the Workshop was to equip the PIs, Co-PIs and Research Scholars of the Network Institutions with the latest technological developments in fish drying. PIs, Co-PIs and Research Scholars from Fisheries College and Research Institute, TANUVAS, Tuticorin, College of Fisheries, Berhampur, KVK (ANGRAU), Undi, West Godavari participated in the Workshop.

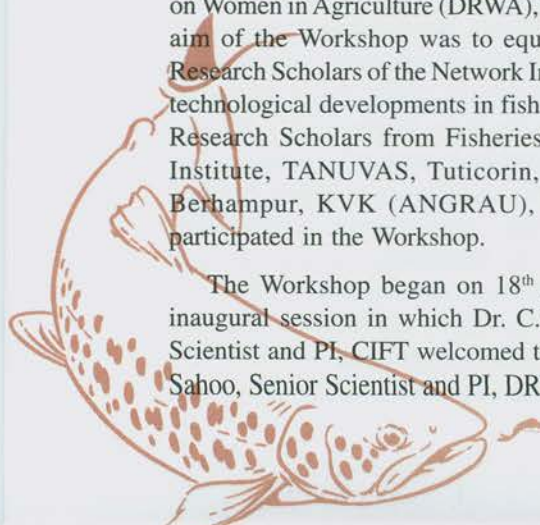
The Workshop began on 18th January, 2010 with an inaugural session in which Dr. C.N. Ravishankar, Senior Scientist and PI, CIFT welcomed the participants. Dr. P.K. Sahoo, Senior Scientist and PI, DRWA, Bhubaneswar gave

a brief introduction of the project. Dr. B. Meenakumari, Director, CIFT, Cochin delivered the Presidential address and Dr. Krishna Srinath, Director, DRWA, Bhubaneswar spoke about the project and its future prospects. Dr. Nikita Gopal, Senior Scientist and Co-PI, CIFT proposed the vote of thanks.

The training session which followed included a lecture by Dr. P.N. Joshi, HOD, Engineering, CIFT, Cochin on 'Recent advances in fish drying'. The participants were taken on a visit to the Mararikulam South Panchayath Fish Processing Centre, an LPG back up fish drying unit set up under the technical guidance of CIFT. On 19th January, 2010 lectures on 'Quality control and HACCP' by Dr. K. Ashok Kumar, Senior Scientist, CIFT, Cochin and 'An overview of fish drying and curing' by Dr. J. Bindu, Scientist (SG), CIFT, Cochin were held. Demonstration on fish drying and

ChloroGIN Meeting

A Workshop on Chlorophyll Globally Integrated Network (ChloroGIN) was organized by CIFT, Cochin during 18-19 February, 2010 in continuation with the International Symposium on Remote sensing and fisheries. The meeting was attended by 60 delegates.





packing followed the lectures.

After the sessions, the project team held discussions on the work plan and project implementation. It was decided that CIFT team will prepare the fish drying protocol and design of fish drying racks.

Training on Oyster Products

CIFT, Cochin conducted a two day training programme on 8th and 9th February, 2010 on "Preparation of value added oyster products" at Moothakunnam as part of the Department of Science and Technology funded project 'Location specific livelihood interventions for empowerment of fisherwomen of Kerala'. A well started initiative for nurturing women empowerment in coastal Kerala, presently implemented in three districts viz. Ernakulam, Kollam and Alappuzha, the project envisages identifying location specific need based interventions in fisheries sector. The project team has already assisted the beneficiaries in initiating culture of edible oyster by women SHG groups.

The inaugural function of the programme was presided over by Shri T.G. Asokan, Panchayath President, Vadakkekara panchayath. Shri K. George Joseph, Principal Scientist and Acting HOD, QAM, CIFT offered felicitations and expected that project initiatives will enhance the livelihood opportunities of coastal fisherwomen. Shri P.K. Vijayan, Principal Scientist, Fish Processing Division and Dr. Femeena Hassan, Senior Scientist and Principal Investigator of the project, Quality Assurance and Management Division and Dr. Saleena Mathew, Professor, Cochin University of Science and Technology spoke on the occasion. Dr. J. Charles Jeeva, Scientist, Senior Scale, Extension, Information and Statistics Division, CIFT,

"Krishi Darpan" Programme

To enhance the communication to the grass-root farmers and among policy planners for improving farmers' receptivity and thus the agricultural production, the CIFT, Cochin organized a two day Technology Expo cum Farmers Mela- "Krishi Darpan" under the project 'Mobilizing mass media support for sharing agro-information' guided by the Directorate of Information and Publications of Agriculture (DIPA), ICAR, New Delhi during 11-12 March, 2010. The event demonstrated and showcased the strength of the technology and addressed the issues and problems of farmers.

Prof. Mercy Williams, Hon'ble Mayor of Cochin Corporation was the Chief Guest of the inaugural function. Dr. B. Meenakumari, Director, CIFT presided over the function. Smt. Saira Banu, Joint Director of Fisheries, Ernakulam, Shri Paul T. Kunnathu, Deputy Director, Animal Husbandry, Ernakulam, Dr. P.T. Mathew, Principal Scientist



Dr. Krishna Srinath, Director, DRWA addressing the gathering

Cochin and Co-PI of the project proposed vote of thanks.

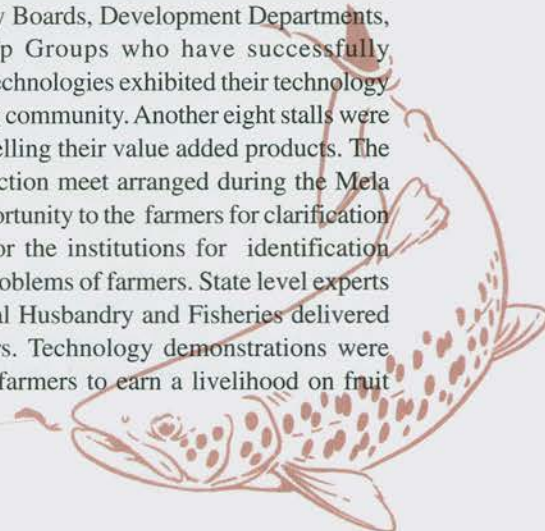
Training on preparation of value added products including breaded and battered oyster products, oyster masala and oyster fillings were imparted by resource persons from CIFT, Cochin, Shri P.K. Vijayan and Dr. Femeena Hassan. More than 40 women members from different Self Help Groups participated in the programme.



Shri T.G. Asokan delivering the presidential address

and Dr. S. Balasubramaniam, HOD, EIS, CIFT spoke on the occasion.

During the two day's programme, 18 stalls involving scientific institutions under ICAR (CIFT, CMFRI, CPCRI, and IISR), Commodity Boards, Development Departments, NGOs and Self Help Groups who have successfully commercialized new technologies exhibited their technology support for the farming community. Another eight stalls were arranged outside for selling their value added products. The scientist-farmer interaction meet arranged during the Mela provided a unique opportunity to the farmers for clarification of their doubts and for the institutions for identification and prioritization of problems of farmers. State level experts on Agriculture, Animal Husbandry and Fisheries delivered lectures to the farmers. Technology demonstrations were also arranged for the farmers to earn a livelihood on fruit





Prof. Mercy Williams inaugurating 'Krishi Darpan'

processing, value added fish product marketing, products from coconut, byproducts from spices etc.

Champion farmers who won awards in diary, agriculture and fisheries were invited for deliberations with scientists as well as farmers. They were felicitated in the function.

The valedictory function was held on 12th March, 2010. Shri S. Sharma, Hon'ble Minister for Fisheries, Govt. of



Shri S. Sharma, Hon'ble Minister giving valedictory address

Kerala was the Chief Guest, who appreciated the efforts being done under the project for dissemination of technological information to the farmers at the grass root level. Dr. B. Meenakumari, Director, CIFT presided over the function. Dr. K.V. Unnithan, SIC, KVK, Njarakkal, Dr. K.K. Sasi, District Animal Husbandry Officer and Shri C.M. Devassy, Ex-Block Panchayath President, Vypeen offered felicitations on the occasion.

Training on Remote Sensing and Ecosystem Based Management

A training course on 'Remote sensing and ecosystem based management' for young scientists and students was conducted by CIFT, Cochin to provide a broad overview of remote sensing applications for ecosystem management in general and fisheries applications in particular. The programme also included discussions regarding complementary *in situ* observations that can be made to enhance the interpretation of satellite data. Dr. Vivian Lutz from INIDEP, Argentina was the guest lecturer. The training programme held during 11-13 February, 2010 at NIO Regional centre, Cochin had 55 trainees from 16 countries.

Dr. K.K.C. Nair, former Scientist-in-Charge, NIO RC

inaugurated the programme. Dr. B. Meenakumari, Director, CIFT, Dr. Parameswaran, SIC, NIO RC, Dr. Trevor Platt, and Dr. Subha Satyendranath from Plymouth Laboratories, UK addressed the trainees. The lectures covered a wide range of topics in remote sensing and applications, including: 1. Measurement and interpretation of phytoplankton pigments, 2. Marine optics underpinning remote sensing of ocean colour, 3. Applications of satellite data for studies of ecosystem variability and climate change, and 4. Use of ocean colour data to address various issues in fisheries and aquaculture. The training course consisted of both theory and practical sessions.

Training on Rigging and Operation of Tuna Long Lines

Under the NAIP Sub Project on 'A value chain on oceanic tuna fisheries in Lakshadweep sea', a training programme on 'Rigging and operation of tuna long lines from Pablo boats' was conducted at Agatti island in Lakshadweep during 9-14 March, 2010. The training was imparted to 25 fishermen under the project by tuna expert Capt. Jayaprakash Mendon. Theoretical and practical demonstrations were made. Two fishing trips along with the expert were made for the benefit of the fishermen.



Tuna expert Capt. Jayaprakash Mendon with the fishermen





Capacity Building Programme

A Capacity Building Programme on 'Preparation of value added fishery products' was conducted at Kannur Association for Integrated Rural Organization and Support (KAIROS), Kannur during 17-18 March, 2010. The inaugural function of the programme was presided over by Fr. Benny Manappatt, Director, KAIROS, Kannur. Resource persons from CIFT, Cochin imparted the training and skill upgradation on preparation of value added fishery products such as fish cutlets, fish fingers, fish pickle, fish wafers, prawn chutney powder, hygienically dried fish products and silage preparation from fishery wastes as a means of alternate livelihood and income generation activities. A group of 32 fisherwomen and fishermen from different Self Help Groups in coastal villages of Kannur district participated in the programme.



Training session in progress

Training on Value Added Products from Tuna

The CIFT, Cochin under the NAIP Sub Project on 'A value chain on oceanic tuna fisheries in Lakshadweep sea' organized a training programme on "Value added products from tuna" at Sevashram, Pullani, North Thuravoor, Angamali, Ernakulam district on 29 March, 2010. The inaugural session started with a meeting which was presided over by Shri K. Vishnu Master, President, Thuravoor Grama Panchayath. Fr. Kuriakose Mampilly, President, Sevashram,

Angamali welcomed the gathering. Shri Mathew Kolenchery, President, Angamali Block Panchayath officially inaugurated the programme. Dr. B. Meenakumari, Director, CIFT, Cochin delivered the Key Note Address and released the Training Manual on "Value added products from tuna" by handing over a copy to Shri Mathew Kolencherry. Dr. T.K. Srinivasa Gopal, Head, Fish Processing Division, and CCPI of the Project, CIFT, Cochin proposed the vote of thanks.



Dr. B. Meenakumari delivering the key note address

The training programme was attended by 35 participants from four districts of Kottayam, Alappuzha, Ernakulam and Thrissur. The two day training gave a hands on experience in the development of value added products from tuna. Eight products namely, cutlets, Balls, Pappad, Wafers, Soup Powder, Kabab, Burger and Pickle was demonstrated during the programme. The valedictory function was held on 30th March, 2010 in which Dr. T.K. Srinivasa Gopal distributed the certificates to the participants. Dr. K. Ashok Kumar, Senior Scientist, Dr. J. Bindu, Scientist (SG), Shri R. Yathavamoorthy and Ms V.R. Mumtaz, Research Associates were associated with the programme.

Workshop in Official Language

A Hindi workshop was conducted at Visakhapatnam RC of CIFT during 23-24 March, 2010 for the benefit of Administrative and Technical staff of the Centre. The Workshop was inaugurated by Dr. M.M. Prasad, SIC of the Centre. Shri Saroj Kumar Singh, Deputy Manager, Hindi, United India Insurance, Visakhapatnam was the resource person for the Workshop. During the Workshop classes were conducted in noting, drafting and entries in Hindi in the work diary.

Seminar in Official Language

CIFT, Cochin organized a National workshop on 'Rajbhasha, science and media management' on 12th March, 2010. Dr. B. Meenakumari, Director, CIFT inaugurated the programme. Prof. Neeraj Kumar, Xavier Institute of Management, Bhubaneswar was the faculty. Twenty scientists of the Institute attended the Workshop.





Dr. B. Meenakumari inaugurating the seminar

Foldable Traps Distributed

A new type of foldable trap with plastic coated iron was designed and fabricated with two different specifications such as L 0.5 m x B 0.5 m x H 0.5 m and L 1 m x B 0.15 m x H 0.5 m for harvesting reservoir prawns and fishes was distributed to the reservoir fishermen for field tests at Rayawada on 27th March, 2010 and at Thandava on 29th March, 2010. Each trap yielded an average of 1 to 2 kgs of prawns and 0.5 to 1 kg of Tilapia species. Dr. M.M. Prasad, SIC, Visakhapatnam RC of CIFT, Dr. G. Rajeswari, Senior Scientist, Dr. U. Sreedhar, Scientist (SG), Shri M.S. Kumar and Shri C. Srihari Babu, Tech. Officers participated in the programme.



Distribution of foldable traps to fishermen at Rayawada

Field Visit Undertaken

A field visit was undertaken by a team of scientists viz. Dr. M.M. Prasad, SIC, Visakhapatnam RC of CIFT, Dr. B. Madhusudanan Rao, Scientist (SG) and Dr. L.N. Murthy, Scientist, Sr. Scale to Cheppala Uppada village on 3rd March, 2010. The visit was a follow up of the training-cum-

Training on Post Harvest Technology

A training-cum-demonstration on 'Post harvest technology' was conducted by the Visakhapatnam Research Centre of CIFT at Danavaipeta fishing village, Thondangi Mandal, East Godavari district, Andhra Pradesh on 5th March, 2010. The programme was held in collaboration with M.S. Swaminathan Research Foundation, Kakinada. The team consisting of Dr. M.M. Prasad, SIC of the Centre, Dr. B. Madhusudana Rao, Scientist (SG), Dr. L.N. Murthy, Scientist, Sr. Scale, Shri N. Venkata Rao, T4 and Shri G. Bhushanam, SSG II. In the inaugural session, the Chief Guest Dr. M.M. Prasad talked on the importance of fish in the diet of people residing in rural areas specially fisherwomen, school going children and elderly people. Dr. Madhusudana Rao and Dr. L.N. Murthy demonstrated the hygienic handling of fish, preparation of fish fillets and salt curing of fish by scientific method. The programme benefited nearly 70 fisherwomen of the village out of which 51 were registered participants.



Demonstration of salt cured fish preparation at Danavaipeta

demonstration conducted on 'Hygienic preparation of salt cured dry fish by scientific method'. In the visit, a survey was undertaken on landing centres and fish curing areas. A



Distribution of insulated fish bags to fisherwomen of Cheppala Uppada





meeting was held with fisherwomen who were involved in preparation of slat cured fish. Suitable sites were identified for large scale preparation of salt cured fish by hygienic and scientific methods. The onsite quality assessment and physical verification of the cured fish revealed reasons for

the lacunae in quality of the cured fish. Suitable site was also identified to establish a modern model fish vending centre to facilitate better disposal of the cured fish products of high quality so as to generate sustainable income, availability of fish in lean/off season etc.

Awards and Recognitions

Dr. T.K. Srinivasa Gopal Gets INSA Fellowship

Dr. T.K. Srinivasa Gopal, Principal Scientist and Head, Fish Processing Division, CIFT, Cochin has been conferred with Fellow of National Academy of Agricultural Sciences in the field of Agricultural Engineering and Technology with specialization in Food Technology with effect from 1st January, 2010.

Dr. Srinivasa Gopal is specialized in retort pouch technology, modified atmosphere packaging and extruded products. He developed various retort pouch food products based on vegetables, dairy, coconut, meat and fish products. Earlier he has bagged ICAR team award for retort pouch technology and Chidambaram Award for developing value added fish products. He was the Project Leader in the ICAR adhoc project on Development of extruded fish products using low value fishes and presently he is the Consortium Principal Investigator in the World Bank project on Oceanic

tuna in Lakshadweep seas - A value chain approach. He is a Life Fellow Member of Society of Fisheries Technologists (India), Cochin, Member of Association of Food Scientists and Technologists, Expert committee member for assessment of scientists of CFTRI Mysore and Member in the Technical Committee, Food Safety Standards, Govt. of India.

Certificate of Appreciation to Dr. Ravishankar

The Professional Fisheries Graduates Forum (PGFG), Mumbai has awarded Dr. C.N. Ravishankar, Senior Scientist, Fish Processing Division, CIFT, Cochin with "Certificate of Appreciation" for the 'Best Indian Fisheries Scientist Award for the year 2009'. This has been awarded for securing the 'Second maximum cumulative impact factor for the research papers published during the year 2008'. The award was presented on 22nd December, 2009 at the College of Fisheries, Mangalore during the annual meet of the Forum.

Infrastructure

A new Shuttle Badminton court was constructed at CIFT Residential Complex. The court was formally inaugurated by Dr. B. Meenakumari, Director, CIFT on 26th January, 2010 in presence of the staff of CIFT and the residents of the complex.



Shuttle Badminton Court being inaugurated

VIPs Visits Veraval Centre

Dr. Madan Mohan, Assistant Director General (Marine Fisheries), ICAR, New Delhi visited the Veraval Research Centre of CIFT on 19th January, 2010. Dr. N.K. Tyagi, Member, Agricultural Scientists Recruitment Board, ICAR, New Delhi also visited the Centre on 2nd February, 2010.



Dr. N.K. Tyagi, ASRB Member at Veraval Centre

Union Minister of State for HRD Visits CIFT Exhibition Stall

A State Level Workshop on "Shelf life: Emerging trends in nutrition and food microbiology" was organized by V.S. Krishna Government College at Visakhapatnam on 31st

January and 1st February, 2010. In this Workshop CIFT Visakhapatnam Research Centre actively participated by exhibiting different harvesting and post harvest technologies





Smt. D. Purandeswari, MOS for HRD, Govt. of India at CIFT stall

Deputation Abroad

Dr. T.K. Srinivasa Gopal, Principal Scientist and Head, Fish Processing Division was deputed to Centre for New Food Technologies and Process (CENTA) at Monells, Spain, under the National Agricultural Innovation project (NAIP) on 'A value chain on oceanic tuna fisheries in Lakshadweep sea'. He was deputed for undergoing advance training and research at CENTA from 17th February to 18th March, 2010.

Dr. Pere Duran, Research Manager coordinated the training programme. The institute is having facilities like High pressure processing (Commercial model 130 litre capacity and 2 litre capacity) Radio frequency drying and thawing, Pulse Electric Field, Microwave energy processing equipment, Tomography for finding the distribution of fat in pork, Pulse light preservation, Texturimeter, Color meter, MAP and Vacuum sealing machine, Marinading tumbling machine etc.



Pulse Light Equipment at CENTA

Equipment used in CENTA, Spain has a 4 lamp, pulsed

light system from Claranor SA, a French company specializing in pulsed light applications. There appears to be very little data available in the public domain regarding the efficacy of pulsed light processing for the treatment of seafood. As fish is a highly perishable product, any process that extends the saleable life of fish would be of benefit to the fish supplier and retailer as it could lead to a reduced

wastage and higher quality at point of sale. For familiarising with the equipment and carrying out small experiment, Salmon fish steaks from nearby market were brought to the laboratory in iced condition. After washing in water it was packed in Nylon polythene laminate and subjected to Pulse light treatment. The samples were exposed to different pulses of various frequencies and found out that the sample should be kept 5 cm away from Xenon light to prevent burning on the sample. The temperature increase was found to be 18-19°C at the surface and 8°C at the centre of the sample. After this standardization, detailed studies were conducted during 23rd February to 18th March by subjecting the samples



Dr. Srinivasa Gopal doing experiments

After this standardization, detailed studies were conducted during 23rd February to 18th March by subjecting the samples





to standardized conditions. Samples were also dipped in 2% Potassium sorbate solution for 30 minutes and drained. Sorbate treated samples were also subjected to pulse light treatment. All the samples were kept at 0 to 2°C for shelf

life studies. Vacuum packed samples without Pulse light treatment gave a shelf life of 15 days. Potassium sorbate treated samples with vacuum packaging and pulse light treatment gave a shelf life of more than 23 days.

ICAR South Zone Sports Meet

The ICAR Inter Institutional Sports Meet (South Zone) - 2010 was hosted by CIFT, Cochin. A total of 25 ICAR Institutes from the Southern states of Kerala, Tamil Nadu, Karnataka and Andhra Pradesh participated in the five day event.

The meet was inaugurated by Dr. M. Beena, IAS, District Collector, Ernakulam on 23rd February. About 700 athletes from the institutions competed in various events in which CPCRI, Kasaragod emerged as the Overall Champions accumulating 88 points and IIHR, Bangalore became the Runner up by securing 54 points. Shri A.K. Shaji of CMFRI,

Cochin became the Best Athlete (Men) and Ms. K. Preethi, CPCRI, Kasaragod as the Best Athlete (Women).

The concluding function was held on 27th February in which Shri Subash J. Shenoy, Inspector of Central Excise, Cochin and National Basket Ball Player was the Chief Guest. He also gave away the prizes and trophies to the winners. Dr. B. Meenakumari, Director, CIFT presided over the function and Dr. N.G.K. Pillai, Joint Director, CMFRI, Cochin and Dr. T.V. Sankar, Senior Scientist, CIFT and Organizing Secretary spoke on the occasion.



Dr. M. Beena, IAS during the inaugural function



Shri Subash J. Shenoy handing over the overall championship trophy to CPCRI, Kasaragod

Celebrations

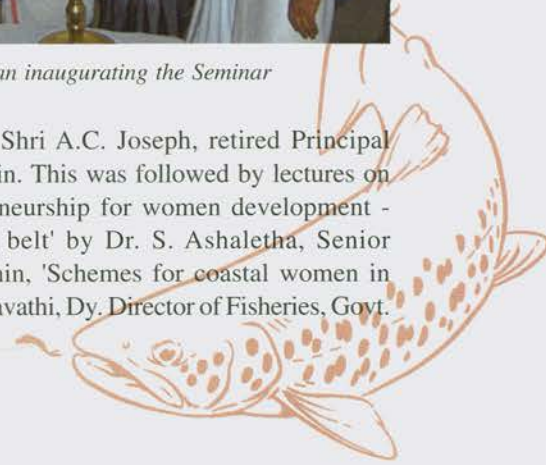
National Science Day

The CIFT, Cochin celebrated National Science Day on 26th February, 2010. At the Head Quarters at Cochin the celebrations were held at Munambam in Ernakulam district. A one day Seminar cum Techno-Expo was organized in association with Kerala State Science, Technology and Environment. Shri M.K. Purushothaman, MLA, Njarakkal inaugurated the Seminar. The meeting was presided over by Dr. B. Meenakumari, Director, CIFT. The focal theme selected being 'Gender equity for prosperity with peace', the Seminar was held on the theme, 'Techno-preneurship building in coastal women for sustainable livelihood'. The event was supported by the 'Sree Dharma Sasta Samiti', a local fisherfolk society. The programme comprised of lectures for the women on selected themes, an expo on the technologies suitable for livelihood in the coastal villages and demonstration on technologies. The first interactive lecture was on 'Technological solutions for women



Shri M.K. Purushothaman inaugurating the Seminar

entrepreneurship' by Shri A.C. Joseph, retired Principal Scientist, CIFT, Cochin. This was followed by lectures on the themes, 'Entrepreneurship for women development - Prospects in coastal belt' by Dr. S. Ashaletha, Senior Scientist, CIFT, Cochin, 'Schemes for coastal women in fisheries' by Smt. Satyavathi, Dy. Director of Fisheries, Govt.





Dr. G. Rajeswari delivering lecture on National Science Day at Visakhapatnam

of Kerala and 'Business prospects for women in fisheries', by Shri Peter, Sub-District Officer, Kothamangalam. Shri M.M. Hari, Vypeen Block Panchayat Vice President and Rev. Fr. Babu Muttickal, Vicar, Holy Family Church, Munambam offered felicitations on the occasion. Shri K.K. Velayudhan, Vice President, Shri Dharma Sasta Paripalana Samithi, proposed vote of thanks.

The Visakhapatnam Research Centre of CIFT celebrated the Day on 26th February, 2010. On the day the school



Students of Indian Rayon School at Veraval Centre

Post Graduate Studies

Ph. D. Awarded

Smt. Usha Bhagirathan, Research Fellow, Fishing Technology Division of CIFT, Cochin was awarded Ph. D. degree of Cochin University of Science and Technology, Cochin for her thesis entitled, "Studies on



children of Siva Sivani School, Visakhapatnam visited the Centre. Dr. M.M. Prasad, the Scientist Incharge introduced the Institute to the children and highlighted the achievements. Dr. G. Rajeswari, Senior Scientist spoke on the topic, 'Gender equity for prosperity and peace'. Dr. U. Sreedhar, Scientist (SG) spoke on the importance of National Science Day. A 'Science Quiz' was also organized on the occasion and the winners were given prizes and certificates.

The Veraval Research Centre of CIFT celebrated the Day on 26th February, 2010. Students from Indian Rayon School, Veraval visited the Centre.

Women's Day

Women's Day was celebrated at Head Quarters on 8th March, 2010. Dr. Leena Nair, IAS, Chairman, MPEDA, Cochin delivered a talk on "Challenges of women at work place". In today's male dominated world, women have lot to do to excel themselves in any sphere of life, said, Dr. Leena Nair. According to her, today women are capable of achieving any heights, provided there is will power. Women can prove themselves to be able officers in Government sector also as in many other private enterprises. Dr. B. Meenakumari, Director, CIFT presided over the function. In her introductory remarks, Dr. Meenakumari also reiterated on the specific dual role of women in the work place and at home. Smt. Sreelekha, Technical Officer (T5) proposed a vote of thanks to the gathering,



Dr. Leena Nair, IAS delivering the talk

the effects of bottom trawling on the benthic fauna off Veraval coast, Gujarat". She worked under the guidance of Dr. B. Meenakumari, Director, CIFT, Cochin.

The study was a pioneering work carried out along Veraval coast. The effects of bottom trawling on the substratum and the associated benthic communities of commercial trawling grounds of Veraval coast were studied. The possible impact of bottom trawling on the sediment characteristics, sediment heavy metals, epifauna, macrobenthos and meiobenthos were assessed. Of the 80 species of the epibenthic fauna identified, the octocorals were recorded for the first time from the sub-tidal region of





Veraval coast. Intense trawling destroys these valuable entities of ecosystem. A total of 81 species of polychaetes belonging to Errantia (36) and Sedentaria (45) were identified. The total numerical density of macrofauna and meiofauna increased after trawling exposing them from their natural habitat due to trawling. The macrobenthic octocoral *Lituarina* sp. was observed throughout the year at depths of 21-40 m because they escape from trawling effect to a certain extent as they live buried in sediment. The increase in the number and biomass after trawling signifies that they are exposed during bottom trawling. It was also observed that the seasonal/natural variations were more prominent

CIFT Team Emerges as Winners in Carrom Championship

The lady participants from CIFT, Cochin came out as winners in the 25th S. Ramaswamy Memorial Kerala State Carrom Championship 2009-10 held at Thiruvananthapuram during 12-14 February, 2010. The tournament was jointly organized by Kerala State Carrom Association and Trivandrum District Carrom Association. Smt. V.P. Vijayakumari of CIFT emerged as the Overall Champion of the tournament. Third place in Doubles was secured by the teams, Smt. V.P. Vijayakumari & Smt. K.K. Sumathy and Smt. Tessy Francis & Smt. Bhagirathi Amma.

Personnel News

Participation in Seminars/Meetings etc.

- **Dr. B. Meenakumari**, Director – International conference on 'Recent advances in lobster biology, aquaculture ad management', NIOT, Chennai (5 January). Dr. Meenakumari chaired the Technical Session on Conservation and management of ecosystem. She also presented a paper on 'Craft and gear for lobster fishing' in the Conference.
- **Dr. B. Meenakumari**, Director – Meeting of the Directors of ICAR Institutes, New Delhi (16-17 February)
- **Dr. B. Meenakumari**, Director – 15th Meeting of Textiles Division Council, TXDL, BIS, New Delhi (24 February)
- **Dr. B. Meenakumari**, Director – Workshop on 'Gender issues in Indian science and transcending barriers to performance: The Indian women in science', NIAS, Bangalore (22-26 March)
- **Dr. B. Meenakumari**, Director and **Dr. S. Ashaletha**, Senior Scientist – Review workshop of NAIP Sub project on Mobilizing mass media support for sharing agro information, IIHR, Bangalore (27 March)
- **Dr. B. Meenakumari**, Director, **Dr. D.I. Khasim**, SIC, Visakhapatnam, **Dr. P.T. Mathew**, **Dr. M.M. Prasad**, Principal Scientists, **Dr. G. Rajeswari**, **Dr. R. Raghu Prakash**, **Dr. V. Geethalakshmi**, Senior Scientists, **Dr. U. Sreedhar**, **Dr. B. Madhusudana Rao**, Scientists (SG) and **Dr. L.N. Murthy**, Scientist,

masking the trawling effect on sediment texture and heavy metals. The study will provide a major fillip to the studies on impact of bottom trawling on the benthic fauna along the coast of India.

Invited Talks at Cochin

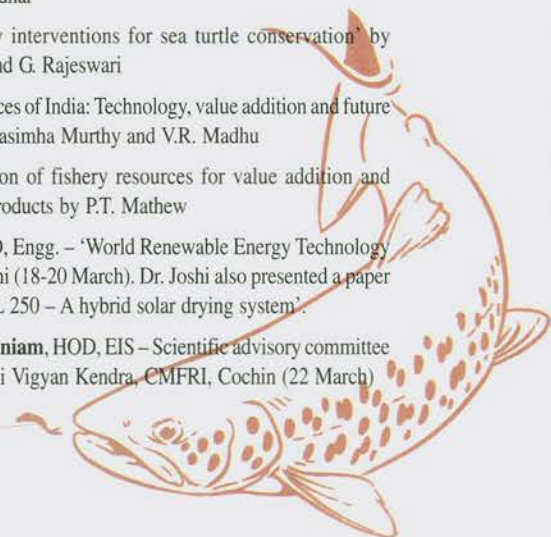
- i. **Dr. A.R.S Menon**, Technical Officer (T9), CIFT, Cochin - 'Right to Information Act-2005' (18 January)
- ii. **Shri B.S. Ravi Shankar**, Senior Training Manager, Informatics (India) Ltd., Bangalore - 'Consortium for e-Resources (CeRA)' (19 January)



Smt. Vijayakumari receiving championship trophy from Shri P.R. Pradeep, noted Malayalam mini screen personality

Senior Scale – National seminar on 'Challenges for sustainable management of fishery resources of India EEF', Visakhapatnam (20 January). The following papers were also presented in the Seminar:

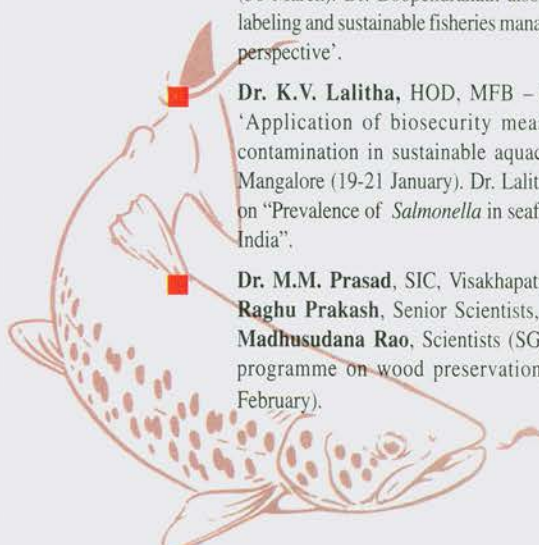
- i. 'Projections for production, export and additional infrastructure requirement for future on sustainable basis' by V. Geethalakshmi
 - ii. 'Post harvest losses – Minimization and better utilization' by D. Imam Khasim
 - iii. 'Emerging pathogens in seafood: Public safety issues and control measures' by M.M. Prasad and B. Madhusudana Rao
 - iv. 'Recent trends in fisheries technology' by G. Rajeswari, R. Raghu Prakash and U. Sreedhar
 - v. 'Fishing technology interventions for sea turtle conservation' by R. Raghu Prakash and G. Rajeswari
 - vi. Bombay duck resources of India: Technology, value addition and future prospects' by L. Narasimha Murthy and V.R. Madhu
 - vii. Sustainable utilization of fishery resources for value addition and development of byproducts by P.T. Mathew
- **Dr. P.N. Joshi**, HOD, Engg. – 'World Renewable Energy Technology Congress', New Delhi (18-20 March). Dr. Joshi also presented a paper on 'CIFT Dryer SDL 250 – A hybrid solar drying system'.
 - **Dr. S. Balasubramaniam**, HOD, EIS – Scientific advisory committee meeting of the Krishi Vigyan Kendra, CMFRI, Cochin (22 March)





- **Dr. S. Balasubramaniam**, HOD, EIS – Meeting of the working group on MGNREGS, NIRD, Hyderabad (31 March)
- **Dr. T.K. Srinivasa Gopal**, HOD, FP – MDP on ‘Leadership for innovation in agriculture’, Noida Campus of IIM, Lucknow (18-22 January)
- **Dr. T.K. Srinivasa Gopal**, HOD, FP – Seminar on ‘Integrated management of water resources with reference to biodiversity and livelihood’, Bhopal (16-17 January). Dr. Srinivasa Gopal also presented a theme paper on “Value added products for domestic and international markets” in the Seminar.
- **Dr. Leela Edwin**, HOD, FT, **Dr. M.R. Boopendranath**, Principal Scientist, **Dr. T.V. Sankar**, **Dr. C.N. Ravishankar**, **Dr. K. Ashok Kumar**, **Dr. Suseela Mathew**, **Dr. Saly N. Thomas**, **Dr. R. Raghu Prakash**, **Dr. Nikita Gopal**, Senior Scientists, **Dr. P. Muhamed Ashraf**, **Dr. J. Bindu**, **Dr. U. Sreedhar**, Scientists (SG), **Shri V. Radhakrishnan Nair**, Scientist, Senior Scale, **Shri V.R. Madhu**, **Dr. C.O. Mohan**, Scientists, **Dr. M. Baiju**, Tech. Officer (T5), **Shri P.S. Khanolkar**, **Shri Sibsankar Das**, **Shri P.T. Sreejit**, **Shri J. Jetva**, **Smt. Usha Bhagirathan**, **Shri S.S. Shaju**, **Ms G. Archana**, **Shri K.P. Manu** and **Shri Nishad Perur**, Research Fellows – International symposium on ‘Remote sensing and fisheries’, Cochin (15-17 February). The following research papers were also presented by them in the Symposium:
 - i. ‘Bio-optical properties of a phytoplankton bloom in coastal waters off Cochin during the onset of south west monsoon’ by Usha Bhagirathan, S.S. Shaju, N. Ragesh, B. Meenakumari and P. Muhd. Ashraf
 - ii. A comparative study on pre-monsoon inherent bio-optical properties of estuarine and coastal waters of Cochin’ by S.S. Shaju, Usha Bhagirathan, N. Ragesh, B. Meenakumari, and P. Muhd. Ashraf
 - iii. ‘In situ estimation of under water light field during north east monsoon in Bay of Bengal’ by P. Muhd. Ashraf, S.S. Shaju, D. Gayatri, Usha Bhagirathan and B. Meenakumari.
- **Dr. Leela Edwin**, HOD, FT, **Dr. P.T. Mathew**, **Shri M. Nasser**, Principal Scientists, **Dr. T.V. Sankar**, **Dr. K. Ashok Kumar**, **Dr. C.N. Ravishankar**, **Dr. A.A. Zynudheen**, Senior Scientists, **Dr. George Ninan**, Scientist (SG) and **Dr. A.R.S. Menon**, Tech. Officer (T9) – Zonal Technology Management-Business Planning and Development Meeting-cum-Workshop, Cochin (12-13 March).
- **Dr. Leela Edwin**, HOD, FT, **Dr. M.R. Boopendranath**, Principal Scientist, **Dr. Saly N. Thomas** and **Dr. M.P. Remesan**, Senior Scientists – National workshop on ‘Eco-labeling and sustainable fisheries management: The road ahead for India’, CMFRI, Cochin (30 March). Dr. Boopendranath also gave an invited talk on, ‘Eco-labeling and sustainable fisheries management in India: The technology perspective’.
- **Dr. K.V. Lalitha**, HOD, MFB – FAO/MIRCEN workshop on ‘Application of biosecurity measures to control *Salmonella* contamination in sustainable aquaculture’, College of Fisheries, Mangalore (19-21 January). Dr. Lalitha also presented a status paper on “Prevalence of *Salmonella* in seafood and aquatic environment of India”.
- **Dr. M.M. Prasad**, SIC, Visakhapatnam, **Dr. G. Rjeswari**, **Dr. R. Raghu Prakash**, Senior Scientists, **Dr. U. Sreedhar** and **Dr. B. Madhusudana Rao**, Scientists (SG) – Technology demonstration programme on wood preservation, IWST, Visakhapatnam (25 February).

- **Dr. M.M. Prasad**, SIC, Visakhapatnam, **Dr. B. Madhusudana Rao**, Scientist (SG), **Dr. L.N. Murthy**, Scientist, Sr. Scale, **Shri N. Venkata Rao**, Tech. Asst. (T4) and **Shri G. Bhushanam**, Skilled Support Staff – Training on ‘Value added products and Hygienic handling of fish’, Kakinada (5 March) (As resource persons).
- **Dr. M.M. Prasad**, SIC, Visakhapatnam, **Shri N. Venkata Rao**, Tech. Asst. (T4) and **Shri G. Bhushanam**, Skilled Support Staff – Training on ‘Hygienic handling practices of fish and prawn on board and at market places’, SIFT, Kakinada (9 March) (As resource persons). Dr. Prasad delivered a talk on ‘HACCP and its application in maintaining the quality of fish’.
- **Dr. P.T. Mathew**, Principal Scientist – ICAR Zonal Technology Management and Business Planning Development meeting cum workshop, CICR, Nagpur (5-6 March).
- **Dr. M.R. Boopendranath**, Principal Scientist – Scientific Advisory Committee – Marine Living Resources Programmes, CMLRE, Cochin (23 January).
- **Dr. M.R. Boopendranath**, Principal Scientist – National symposium on ‘Impact of climate change in aquatic ecosystems’, CUSAT, Cochin (18 February).
- **Dr. M.R. Boopendranath**, Principal Scientist – National seminar on ‘Peninsular aquaculture: Quest for solutions’, Bangalore (26 February).
- **Dr. M.R. Boopendranath**, Principal Scientist – Oil sardine fishery stakeholder meeting, WWF India, Cochin (9-10 March).
- **Dr. M.R. Boopendranath**, Principal Scientist – National Seminar on ‘Future of Indian fisheries: Emerging policy paradigms’, University of Kerala, Thiruvananthapuram (19 March).
- **Dr. M.R. Boopendranath**, **Dr. P.T. Mathew**, **Dr. T.K. Thankappan**, Principal Scientists, **Dr. A.A. Zynudheen**, Senior Scientist, **Dr. George Ninan**, Scientist (SG) and **Dr. R. Venkateswarlu**, Scientist – Indo-European workshop on ‘Waste management in aquaculture and fisheries’, Cochin (10-11 February). The following invited papers were also presented by them in the Workshop:
 - i. ‘Technological solutions for minimization of waste from capture fisheries’ - Dr. M.R. Boopendranath
 - ii. ‘Solution for fish products valorization – Indian context’ – Dr. P.T. Mathew
- **Shri P.K. Vijayan**, Principal Scientist – Workshop on ‘Fish culture-clam culture’, Cherthala (6 January) (As resource person)
- **Shri P.K. Vijayan**, Principal Scientist – Workshop on ‘Value added fish products for income generation’, Fatima National College, Kollam (10 February) (As resource person)
- **Dr. G. Rajeswari**, Senior Scientist – National seminar on ‘Recent trends in aquaculture’, SRR&CVR Govt. College, Vijayawada (7-8 January). Dr. Rajeswari also delivered an invited talk on ‘Recent trends in fisheries technology development’.
- **Dr. C.N. Ravishankar**, Senior Scientist – Meeting of the scientific panel of Food safety Standards Authority of India, New Delhi (22 January)
- **Dr. C.N. Ravishankar**, Senior Scientist – Workshop on ICAR Network project on Capacity building of coastal fisher women through post-harvest technologies in fisheries, DRWA, Bhubaneswar (9-10 March)
- **Dr. A.A. Zynudheen**, Senior Scientist – International seminar on



'Ornamental fish breeding, farming and trade', Cochin (13-14 February)

- **Dr. Femeena Hassan**, Senior Scientist- Technical seminar on 'Expand the reach and applications of LC and MS innovation', Cochin (28 January)
- **Dr. Saly N. Thomas**, Senior Scientist – Technical expert committee meeting constituted by Commissioner of Fisheries, Andhra Pradesh, Hyderabad (9 February)
- **Dr. S. Ashaletha**, Senior Scientist – PMAC meeting under the NAIP sub project, 'Mobilizing mass media support for sharing agro-information', IIHR, Bangalore (23 January)
- **Dr. R. Raghu Prakash**, Senior Scientist, **Dr. P. Muhd. Ashraf**, Scientist (SG), **Dr. C.O. Mohan**, Scientist, **Smt. Usha Bhagirathan**, **Ms G. Archana**, **Shri S.S. Shaju**, **Shri K.V. Aneesh Kumar**, **Shri Paresh S. Khanolkar**, Research Fellows – International training programme on 'Remote sensing and ecosystem based management including fisheries', Cochin (11-13 February)
- **Dr. Sanjoy Das**, Senior Scientist – Core group meeting of fish genomics researchers', CIFA, Bhubaneswar (12-13 January)
- **Dr. J. Bindu**, Scientist (SG) – JPC meeting and 2nd CSC meeting of the NAIP on 'Studies on high pressure processing of high value perishable commodities', IIT, Kharagpur (11-12 January)
- **Dr. U. Sreedhar**, Scientist (SG) – Workshop on 'Marine fishery resources of upper east coast with special reference to Orissa', Puri (5 March). Dr. Sreedhar also made a presentation on 'CIFT's initiative in sustainable fisheries'
- **Dr. U. Sreedhar**, Scientist (SG) – Workshop on 'Marine fishery of east coast of India', SIFT, Kakainada (25 March). Dr. Sreedhar also made an invited talk on 'Eco-friendly initiatives of sustainable fishing'
- **Dr. P. Muhd. Ashraf**, Scientist (SG) – Chlorgin workshop, Cochin (18-19 February)
- **Shri Rakesh Kumr**, Scientist, Senior Scale – Workshop on 'Fisheries conservation and enhancement in Kerala state', RGCB, Thiruvananthapuram (6 January)
- **Shri Rakesh Kumr**, Scientist, Senior Scale – National seminar on 'Proteomics: Advances, applications and challenges', IBAB, Bangalore (19 February)
- **Dr. Toms C. Joseph**, Scientist, Senior Scale – Meeting of NAIP on 'Allele mining', New Delhi (21-22 January)
- **Dr. A.R.S. Menon**, Tech. Officer (T9) – 22nd Kerala Science Congress on the theme 'Intellectual property rights and development: A national perspective', KFRI, Peechi (28-31 January)
- **Dr. A.R.S. Menon**, Tech. Officer (T9) – 1st meeting of the Institutions/Organizations working in areas relevant to forestry in the Western Ghats, Kerala Forest Headquarters, Thiruvananthapuram (4 February). Dr. Menon also made a presentation on 'Technologies for fisheries conservation and protection of marine biodiversity'
- **Shri M.V. Baiju**, Tech. Officer (T7-8) – Monitoring Committee meeting for the acquisition of Mother ship for Department of Fisheries,

Lakshadweep (19-20 February)

- **Shri M.V. Baiju**, Tech. Officer (T7-8) – Expert committee meeting for conversion of fishing vessels to tuna long lines and Subsidy scheme for fish hold installation, MPEDA, Cochin (5, 19, 25 and 31 March)
- **Dr. K. Sobha**, Tech. Officer (T6) – Official language seminar on 'The role of official language Hindi as a catalyst for business development', BPCL Kochi Refinery, Cochin (4 February). Dr. Sobha also presented a paper entitle, 'The role of official language Hindi in fisheries development'.
- **Dr. K. Sobha**, Tech. Officer (T6) and **Shri P. Shankar**, Hindi Translator (T4) - National official language seminar on 'Cultural crisis and contemporary Hindi literature', Sree Sankaracharya University of Sanskrit, Kalady (25-26 March)
- **Shri Santhosh Alex**, Tech. Officer (T5) – National Seminar in Hindi on 'Comparative literature and language study', Andhra University, Visakhapatnam (22-23 February)
- **Shri P. Radhakrishna**, Tech. Asst. (T4) and **Shri M. Hanumantha Rao**, JRF – National trainers training programme on 'Capacity building to enhance the competitiveness of Indian fisheries', CIFNET, Visakhapatnam (18-22 March).
- **Shri Renju Ravi**, JRF – Workshop on 'Role of low value fish species in strengthening food security in India', College of Fisheries, Mangalore (25-26 March).

Personalia

Appointments

1. Dr. Leela Edwin, Principal Scientist as Head, Division of Fishing Technology, Cochin
2. Dr. K.V. Lalitha, Principal Scientist as Head, Microbiology, Fermentation and Biotechnology, Cochin
3. Dr. G.K. Sivaraman, Senior Scientist (Biotechnology – Animal Sciences), Cochin
4. Dr. S. Vishnuviniyagam, Scientist (Veterinary Microbiology), Cochin
5. Shri Manoj Kumar, Scientist (Agricultural Statistics), Cochin

Promotions

1. Dr. S. Sanjoy Das, Scientist, Senior Scale as Senior Scientist
2. Smt. V.K. Raji, UDC, Cochin as Asst.
3. Smt. K. Renuka, UDC, Cochin as Asst., Mumbai

Retirements

1. Dr. D. Imam Khasim, Principal Scientist & SIC, Visakhapatnam
2. Dr. P.T. Mathew, Principal Scientist, Cochin
3. Smt. K. Sarasamma, Tech. Officer (T5), Cochin
4. Shri A.R. John, Skilled Staff, Cochin
5. Shri Premlal Panda, UDC, Burla (Voluntary Retirement)

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