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भाकृ अनुप ICAR

मत्स्य प्रौद्योगिकी समाचार
Fish Technology Newsletter

CONTENTS

Awards and Recognitions	1
Vision 2020 in Indian Fisheries	4
News from the Research Front	6
Training Programmes	10
Outreach Programmes	10
Post Tsunami Activities	11
Forthcoming Events	13
New Publication from CIFT	13
Coastal Awareness Camps	14
Technology Transfer	14
Participation in Exhibition	15
Visitors	15
Personnel News	15
Personalia	16

CIFT Research Team Wins the International Smart Gear Award

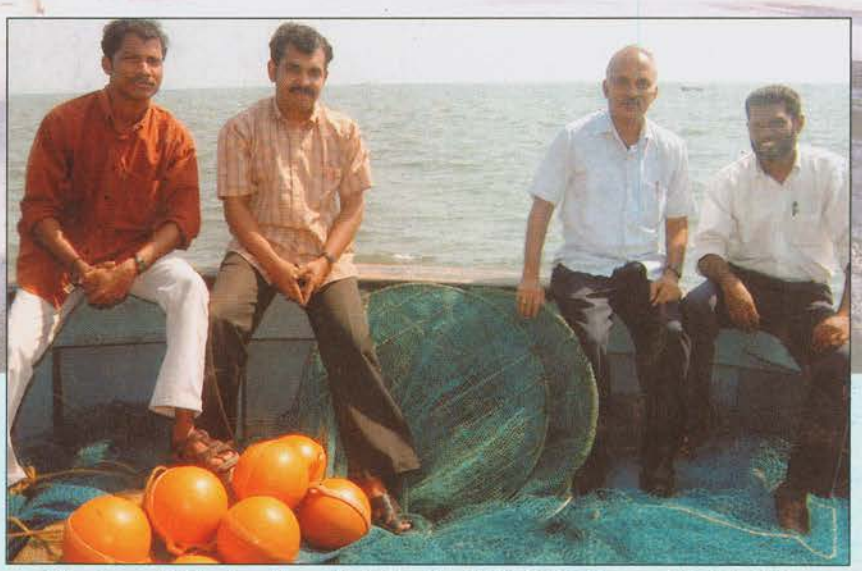
सिफ्ट अनुसंधान टीम को अंतर्राष्ट्रीय स्मार्ट गियर अवार्ड

CIFT research team consisting of Dr. M.R. Boopendranath (Principal Scientist), Dr. P. Pravin (Sr. Scientist), Shri T.R. Gibinkumar (Sr. Research Fellow) and Shri S. Sabu (Sr. Research Fellow) of Fishing Technology Division, has won the coveted International Smart Gear Award, in the category 'Other Non-target Species (Including fish)'. The award carries a cash prize of US $5,000.

The award was received by the

केन्द्रीय मात्स्यकी प्रौद्योगिकी संस्थान के मत्स्यन प्रौद्योगिकी डिवीज़न के डॉ. एम.आर. भूपेन्द्रनाथ (मुख्य वैज्ञानिक) डॉ. पी. प्रवीण (वरिष्ठ वैज्ञानिक) श्री टी.आर. जिबिन कुमार (वरिष्ठ अनु. छात्र) और श्री एस. साबु (वरिष्ठ अनु. छात्र) से युक्त अनुसंधान टीम ने 'अन्य अलक्षित जातियाँ (मत्स्य शामिल हैं)' की श्रेणी में शानदार अंतर्राष्ट्रीय स्मार्ट गियर अवार्ड जीत लिया। अवार्ड में $ 5,000 का नकद पुरस्कार निहित है।

यह अवार्ड WWF द्वारा नैशनल प्रेस क्लब,



The Award Winning Team (L to R : Shri T.R. Gibin Kumar, Shri S. Sabu, Dr. M.R. Boopendranath and Dr. P. Pravin)

केन्द्रीय मात्स्यकी प्रौद्योगिकी संस्थान
मत्स्यपुरी पी.ओ., कोचिन - 682 029

Central Institute of Fisheries Technology
MATSYAPURI P.O., COCHIN-682 029

team leader at a special ceremony organized by WWF, at the National Press Club, Washington DC, on 21 April 2005.

The team that won for "Other Non-Target Species" is made up of a group of scientists who have worked together for more than a year on the "bycatch reduction devices for selective shrimp trawling" project. Dr. M.R. Boopendranath is the principal investigator for the project, Dr. P. Pravin is the associate scientist and Shri T.R. Gibinkumar and Shri S. Sabu are senior research fellows for the project.

Dr. M.R. Boopendranath (left, front row) with other awardees and officials in front of the Capitol, Washington D.C.

This team was formed in April 2004 and had already participated in an ad hoc research project for the ICAR. The CIFT is the part of the ICAR that oversees and analyzes the harvest and post-harvest technology of fishing in India.

Invention

This team's entry specifically addresses the bycatch problems faced by shrimp trawlers in the Indian Ocean. They developed a system of angled metal grids and net meshes that work to reduce bycatch of undersized shrimp and fish in trawls.

Trawl fishermen in India and other tropical fisheries depend on both finfish catches and shrimp catches to keep the commercial operations economically viable. Christened the Juvenile Fish Excluder cum Shrimp Sorting Device (JFE-SSD) by its inventors, this solution traps mature shrimp in the bottom portion of the net while allowing juvenile shrimp to swim out of the mesh net unharmed. The device also retains mature finfish in the upper portion of the net while allowing small fish of low commercial value to safely exit the shrimp trawl.

The sorting of the shrimp and the finfish between the lower and upper parts of the net enhance profitability because it reduces sorting time on the deck which increases the useful fishing time of the trawler fishermen; and it prevents shrimp from becoming crushed under the weight of fish and bycatch hauled on deck which increases the shrimp's market value.

Increasing profitability while decreasing bycatch through a simple solution could have positive impact on a heavily populated developing country and the global problem of bycatch.

वाशिंगटन में 21 अप्रैल 2005 को आयोजित एक विशेष समारोह में टीम लीडर ने प्राप्त किया है।

'अन्य अलक्षित जातियों' के लिए पुरस्कार प्राप्त टीम, एक वैज्ञानिक ग्रूप है जिन्होंने "वरणात्मक झींगे ट्रोलिंग के लिए उपपकड घटौती उपकरण" प्रोजक्ट पर एक वर्ष से अधिक एक साथ काम किया था। प्रोजक्ट के मुख्य अनुसंधाता, डॉ. एम.आर. भूपेन्द्रनाथ है। डॉ. पी. प्रवीण, सह. वैज्ञानिक और श्री टी. आर. जिबिन कुमार और श्री एस. साबु, आदि प्रोजक्ट के वरिष्ठ अनुसंधान अध्येता हैं।

अप्रैल 2004 को इस टीम का रूपायन किया गया और भारतीय कृषि अनुसंधान परिषद के तदर्थ प्रोजक्ट पर पहले ही भागीदार भी थे। सिफ्ट भारत के पैदावार एवं पश्च पैदावार प्रौद्योगिकी पर निरीक्षण एवं विश्लेषण करने वाले भा कृ अनु प के भाग है।

आविष्कार

भारतीय महासमुद्र के झींगा ट्रालरों द्वारा सामना करने वाले उपपकड की समस्याओं पर टीमों का विशेष प्रवेश है। ट्रालों की निम्न आकृति के झींगे एवं मत्स्यों के उप पकड को कम करने के लिए उन्होंने काँटेधार घात्विक ग्रिडों एवं जाल संपाशों को विकसित किया गया।

वाणिज्यपरक प्रचालन आर्थिक तौर पर सक्षम बनाने के लिए भारत के ट्राल मछुवारे और अन्य उष्णकटीबंध मात्स्यकी दोनों फिन मत्स्य पकड और झींगे पकडों पर आश्रित है। अनुसंधातों द्वारा किशोर मत्स्य अपवर्जक व झींग छंटाई उपकरण (जे एफ ई - एस एस डी) के नामकरण के बाद यह जाल के अधोभागीय भाग में परिपक्व झींगे को फंसाकर किशोर झींगों को कोई क्षति बिना मेश जाल से बाहर की ओर तैरकर जाने को अनुमत करता है। यह उपकरण परिपक्व फिन मत्स्य को जाल के ऊपरी भाग में रहने और निम्न वाणिज्यिक मूल्य के छोटे मत्स्यों को झींगे जाल से किसी भी क्षति के बिना बच जाने के लिए अनुमत करता है।

जाल के निम्न और ऊपरी भागों में झींगे और फिन फिशों का छांटन, लाभ की वृद्धि करती है क्यों कि डक पर के छांटन समय को कम करता है जो ट्रालर मछुवारों के लिए उपयोगी मात्स्यकी समय को बढाता है। साथ ही साथ डेक पर घसीटे मत्स्य के वज़न के कारण झींगों की पिसाई हो जाने से बच जा सकती है। ऐसे झींगों के बाज़ारी मूल्य बढ़ जाता है।

भारी आबादी के विकासशील राष्ट्र में और उप पकड की सार्व-भौमिक समस्या में एक छोटे साधन द्वारा उप पकट को कम करके लाभ-कारिता की बढती एक धनात्मक संघात हो सकता है।

Fisheries Technocrats Forum Award to CIFT Scientists
सिफ्ट वैज्ञानिकों के लिए मात्स्यकी टेक्नोक्राट फोरम अवार्ड

A team of Scientists of CIFT consisting of Dr. T.K. Srinivasa Gopal, Dr. C.N. Ravishankar and Smt. J. Bindu, has bagged the K. Chidambaram Memorial Annual Award 2005, given by The Fisheries Technocrats Forum, Chennai for their outstanding contribution to the "Development of value added fishery products in India". The team was selected for the award for their contribution in value addition of fresh fish through vacuum packaging, modified atmosphere packaging and value addition by proper packaging of frozen, dried and smoked fish in flexible retortable pouches and rigid cans, and development of extruded products in thermoform trays. Different technologies developed have been transferred to entrepreneurs and technical guidance has been given to exporters, entrepreneurs, self help groups and other individuals. The award was presented at a function on 14 May 2005 at the Directorate of Fisheries, Government of Tamil Nadu.

सिफ्ट के डॉ. टी.के. श्रीनिवास गोपाल, डॉ. सी.एन. रविशंकर और श्रीमती जे. बिन्दु से युक्त वैज्ञानिक टीम ने 'भारत के मूल्य जोड' मात्स्यकी उत्पन्नों के विकास में उनके द्वारा दिए गए उत्कृष्ट सहयोग केलिए मात्स्यकी टेक्नोक्राट फोरम, चेन्नाई द्वारा के. चिदंबरम यादगार वार्षिक अवार्ड 2005 प्राप्त किया। इस टीम को निर्वात संवेष्ठन, सुधरे वातावरणिक संवेष्ठन, हिमीकृत संवेष्ठन, सूखे और धूमित मत्स्य उत्पन्न, लचीले भभका और अनम्य डिब्बाओं में परोसने के लिए तैयारित मूल्यजोड उत्पन्नों के विकास, थेर्मोफार्म ट्रेयों में निष्कासित उत्पन्नों के विकास आदि ताजे जल मत्स्य के मूल्य जोड के लिए किए गए सहयोग के लिए पुरस्कार दिया गया। विकसित विभिन्न प्रौद्योगिकियों को ठेकेदारों को स्थानांतरित किया गया और प्रौद्योगिकी मार्गनिर्देशन निर्यातकों, ठेकेदारों और स्वयं सहायता ग्रूपों एवं अन्य व्यक्तियों को दिया गया। तमिलनाडु सरकार, मात्स्यकी निदेशालय में 14 वीं मई 2005 को संपन्न समारोह में अवार्ड का वितरण किया गया।

Dr. C.N. Ravishankar Smt. J. Bindu Dr. T.K. Srinivasa Gopal

Jawaharlal Nehru Award for CIFT Scientist
सिफ्ट वैज्ञानिक के लिए जवाहरलाल नेहरु अवार्ड

Dr. Saly N. Thomas, Sr. Scientist of CIFT is chosen for Jawaharlal Nehru Award for P.G. Agricultural Research 2004. This award is given for the best Ph. D. Thesis in Fisheries. The work was on the technological and operational aspects of gill nets of the Kerala coast.

She did her Ph. D. under the guidance of Prof. (Dr.) C. Hridayanathan who was the Director of the School of Industrial Fisheries, Cochin University of Science and Technology. The award comprises a gold medal, citation and Rupees Twenty Thousand. The award was presented to her at a function held in New Delhi on 16 July 2005 by Shri Sharad Pawar, Hon'ble Union Minister for Agriculture.

The study examines gills nets as a low energy fishing technique with focus on its technological and operational importance in the marine fishing sector of Kerala. She has studied selectivity of gill nets which

डॉ. साली एन. थॉमस, वरिष्ठ वैज्ञानिक, केन्द्रीय मात्स्यकी प्रौद्योगिकी संस्थान को पी.जी. कृषि अनुसंधान 2004 के जवाहरलाल नेहरु अवार्ड के लिए चुन लिया गया। यह अवार्ड मात्स्यकी में किए गए श्रेष्ठ पी.एच डी. शोध-ग्रंथ केलिए दिया जाता है। यह कार्य केरल तट के क्लोमजालों के प्रौद्योगिकीय और संचालनीय पहलुओं पर है।

Dr. Saly N. Thomas receiving the award from Shri Sharad Pawar

प्रो. (डॉ.) सी. हृदयनाथन, निदेशक, औद्योगिक मात्स्यकी स्कूल, कुसाट के मार्ग-निर्देशन में उन्होंने पी एच डी की। अवार्ड में एक स्वर्ण पदक, प्रशंसात्मक उल्लेख और बीस हज़ार रुपए शामिल है। जूलाई 16, 2005 को नई दिल्ली में संपन्न समारोह में यह पुरस्कार माननीय कृषि मंत्री श्री शरद पवार ने उनको दिया था।

अध्ययन, क्लोम जालों को एक निम्न और ऊर्जा मत्स्यन तकनीक के रूप में केरल के समुद्री मत्स्यन क्षेत्र में उसके प्रौद्योगिकी एवं प्रचालन की महत्ता पर जाँच करता है। क्लोम जालों की वरणात्मकता पर उनके द्वारा किए गए अध्ययन, पक्वता से निम्न मत्स्यों के प्रग्रहण को रोकने के लिए

helped in arriving at the minimum mesh size to be used to prevent capture of fishes below the size at first maturity. She has also proved substitution of costly nylon in large mesh gill nets by less costly polyethylene and found successful to bring out a saving of 52% in the cost of gear. The study confirmed gill net as a very efficient gear.

प्रयुक्त न्यूनतम मेश आकारों को प्राप्त करने में सहायक हुआ। उन्होंने बडे मेश के क्लोम जालों में महँगे नाइलॉन को एक्ज़ी के रूप में सस्ते पॉलीएथिलीन को प्रयुक्त करना, विजय पद स्थापित किया जो गिअर के खर्च पर 52% बचत लाता है। अध्ययन ने स्थापित किया गया है कि क्लोम जाल बहुत प्रभावकारी गिअर है।

VISION 2020 – Harvest and Post Harvest sectors in Indian Fisheries : A vision of Indian Fisheries 2020

In a developing economy, multi faceted planning and execution of programmes are of paramount importance. Capability of critical evaluation of all natural and human resources available and a clear vision of the future should be the guiding principles of planning. As a country poised to be fully developed in another two decades, India should depict a vision in all major sectors of the economy. As a part of this exercise, the CIFT has developed a vision document for the fisheries sector of the country as a whole and presented it to the ICAR. The core points of this idea are furnished with a SWOT analysis as under.

Strength

1. India with an extensive coast line of about 8118 kms, 2.02 million sq km of EEZ and a continental shelf of 0.506 million sq km is blessed with potential and highly productive fishing zones rich in commercially important marine species.
2. The vast inland water resources including 191024 km of river and canal system, 3.15 million ha of reservoirs, 2.25 million ha of ponds and tanks, 1.3 million ha of ox-bow lakes and 1.24 million ha of brackish water also are highly productive. Together, the total fish production potential is estimated as 8.5 million tonnes.
3. The export of fish and fishery products to 79 countries around the world including US, Japan, EU, South East Asia and others stand at 4 lakh MT valued at 6900 crores of rupees. In dollar terms the exports are valued at 1330 million US dollars. India is the 4th largest producer and exporter of shrimp in Asia.
4. The contribution of fisheries sector to GDP is 1.5% and 5.0% to agricultural GDP. It is the largest net foreign exchange earning industry in the agriculture and related sectors. Fisheries sector can play a vital role in attaining nutritional security in India. It is also one of the largest employer in the rural sector, providing direct and indirect employment to millions of rural poor, especially weaker sections and women. The sector provides employment to 5.96 million (full time and part time) fishermen in the country and supports a sizable number of people for employment in ancillary industries like boat building, gear design and fabrication, fish processing, marketing etc.
5. The sector has vast infrastructure in the form of 394 fish processing plants, with an annual installed capacity of 9244 MT/day apart from canning plants, fish meal plants, cold storage and peeling sheds. Around 143 processing plants have acquired the EU approval for maintaining the international standards of quality. The fishing industry is supported by 53000 mechanised crafts of varying sizes capable of multi-day fishing, 44000 motorised crafts fitted with inboard/outboard engines and 2,00,000 non-motorised country crafts. The sector also is supported by 6 major and 38 minor fishing harbours, 138 modernised fish landing centres, 2200 other fish landing centres and 3600 fishing villages.
6. The sector has developed trained man power in the field of fisheries comprising personnel with fishing skills, technical expertise, managers, policy makers, researchers, aquaculturists, extension workers and teachers capable of tackling any challenge that may arise in the field of fisheries both in the national and international scenario.
7. R & D facilities in harvest and post harvest technologies available in the country is comparable to those in any other nation in the field. The R & D institutions provide leadership in capture, culture, harvest and post harvest preservation of fishery resources. The much needed diversification and value addition to the vast low value fish resources are also taken care of by the R & D institutes which offer extensive education and training facilities also.

Weakness (Sectoral)

1. A comprehensive fisheries policy is lacking in the country.
2. Conflicts in the fisheries sector.
3. Insufficient extension manpower and linkages with State Fisheries Departments.
4. Inadequate scientific manpower.
5. Unorganized marketing system.
6. Lack of access to institutional finances and insurance facilities to the fisherfolk.
7. Excessive and unregulated number of fishing fleet leading to uneconomical fishing in the open access

system resulting in over exploitation of the resources.

8. Over dependence on shrimp in both capture and culture sectors and need for diversification.
9. Insufficient awareness among fishermen about the importance of responsible fishing and conservation of resources.
10. Inadequate emphasis on value added products from discards and low value fishes.
11. Neglect of the vast untapped internal market.
12. The inland resources on account of its scattered centres, is yet to be exploited fully in an organised industrial level.
13. Lack of encouragement to organic farming of fishery resources.

Opportunities

1. The vast potential internal market can be exploited to provide direct and indirect employment for many more, at the same time avoiding wastage of valuable proteins, thereby fighting protein caloric malnutrition prevalent among the rural poor.
2. Full exploitation of the oceanic resources like tuna, cephalopods etc. and the inland resources can change the face of Indian fisheries.
3. Opening up of new potential markets like the EU, Gulf countries, Far East and China is reducing over dependence on traditional markets like Japan and US.
4. New types of products like ready to eat products that can be stored at room temperature will widen the horizons for the industry.
5. Valuable by products and bioactive compounds and pharmaceutical products that can be prepared from fish also offer vast scope for development.
6. In view of globalisation and liberalisation in trade, import, processing and re-export of fishery products can ensure full employment to the labour employed in the sector and can increase foreign exchange earnings.
7. Enormous potential exists in the field of ornamental fisheries, both freshwater and marine, which can be scientifically exploited.

Threats

1. The quality standards of the developed importing countries are becoming unrealistically stringent and unless we gear up to meet this challenge, we are likely to lose our position of prominence in the field.
2. Non sustainable growth of the fisheries sector and environmental degradation may threaten fishery resources and future development.
3. Failure to implement scientific management measures to control open access to capture fisheries may lead to fishery collapses and inter sectoral conflicts.
4. Disabling policies, changing political priorities, negative public opinion, market forces and budgetary constraints could affect development and opportunities.
5. If a proper quarantine set up is not evolved, import processing and re-export of fishery products may introduce new health hazards to the country.
6. Unscientific culture practices may lead to environmental degradation and rejection of our exported products in the international market.

Vision 2020

1. By 2020, India will emerge as one of the top fish producing countries in the world, producing 13 million tonnes of fish both in marine and inland sectors. The country will be equipped for export of marine products to a tune of 11,75,000 MT in 2015 and 18,90,000 MT in 2020.
2. The country will attain a technologically well advanced status on par with any developed country with immense scientific and technological manpower equipped for meeting any challenges in the domestic and global markets.
3. The sector will be well developed for making a substantial contribution of Rs. 59,000 crores to the GDP of the country which may come to about 2% of the national income.
4. With a projected population of 125 crores in 2020, the sector will contribute immensely to the nutritional security of the country with the per capita consumption of fish rising to 15 kg from the existing 9.9 kg.
5. The sector will have a well developed infrastructure with large capital investment capable of exporting fishery products to an estimated level of 17,800 crores of rupees fetching a foreign exchange of 3,900 million US dollars in 2020. The industry will be capable of catering to specialized markets for pouch packed, ready-to serve products with stress on value addition.
6. Full exploitation of the oceanic resources like tuna which can even replace the present prawn centered fishery export market in the long run.
7. The fishing fleet will be judiciously managed and stress will be given to the development of deep sea and factory vessels for exploiting our tuna resources.
8. Cage culture and mariculture will be strengthened in the niche areas like tuna fattening.The domestic markets will be strengthened with newer consumer friendly value added, ready-to-eat and speciality products for enhancement of fisheries economy and utilisation of low value fishes.
9. The sector will have a capability of providing direct

and indirect employment to 20 million people, thus making a significant impact on the socio-economic scenario of the rural population resulting in the upliftment of a large section of people above poverty line.

10. The aquaculture sector will be serviced by better hatcheries, fish meal plants, feed mills etc., with indigenous technology.

11. As per the present indications, the ornamental fisheries is poised for a boom, as demand increases both in the domestic and international markets. The production and export of this is expected to create employment opportunities and additional revenue from domestic and overseas markets in the next decade.

12. The overall development in the fisheries sector will necessitate the creation of large scale infrastructure and consequently enormous capital investment. Both government and private sectors will have to pool their resources for meeting this challenge to equip this sector and make it a vibrant and modern industry.

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NEWS FROM THE RESEARCH FRONT/अनुसंधान क्षेत्र से समाचार

An assessment on the organochlorine pesticide residues in water and shrimps

जल और झींगों पर ऑर्गानोक्लोरिन कीडाणुनाशी अपशेषों का मूल्यांकन

Many of the common pesticides are poisons from highly toxic and indestructible chemicals like arsenic, copper, lead and mercury and hence can accumulate in the environment. There are different groups of pesticides namely insecticides, herbicides, rodenticides, fungicides, fumigants etc. depending on their application. The pesticides are basically classified on the basis of their chemical structure as organochlorines, organophosphates, carbamates, pyrethreoid derivatives etc. The organochlorine compounds are most dangerous for human health basically because of their lipid solubility and high level of persistence. The organophosphorous and carbamate pesticides, even though more potent than organochlorine are biodegradable. It is in this context that the presence of organochlorine pesticides in the food commodities assumes significance. The pesticides even though meant for use against a particular organism, may act on other organisms sharing the same environment and kill desirable or by contaminating their food source and cause adverse health effects in animals and humans.

The persistent pesticides, besides being inert and non-degradable are bio-accumulative within the body of the consuming organisms and are concentrated with each ensuing level of the biologic food chain. The accumulation of these substances in fish is related to its feeding habit. Pesticide in water settles to the bottom along with sediments and the bottom breeders ingest the same along with food. Since these substances are not metabolized and excreted completely, their concentration in the body of the organism increases with the progress of food chain. In this era of ever increasing demand for quality standards for processed seafood, presence of xenobiotic residues particularly pesticides, poly aromatic hydrocarbons and heavy

आरसेनिक, तॉबा, लेड और मेरकुरी जैसे उन्नत विषैले और अविनाशित रासायनिक कई साधारण पीड़कनाशी विष से युक्त है इसलिए वे पर्यावरण पर संचित हो सकता है। प्रयोग के अनुसार कई प्रकार के पीडकनाशी है यानी, कीडाणुनाशी, शाकनाशी, कृतकनाशी, फफूँदनाशी, धूमक आदि, पीडकनाशियों को उनके रासायनिक संघटन के अनुसार ऑर्गनोक्लोरिन, ऑर्गनोफॉसफेट, कार्बमेट, पैरेथ्रोयड, व्युत्पन्न ऐसे वर्गीकृत किया गया है। इनमें आर्गनाक्लोराइड संयुक्त लिपिड विलेयता और उन्नत दीर्घस्थायिता के कारण मानक स्वास्थ्य केलिए सबसे खतरनाक है। ऑर्गानोफॉसफरेस और कार्बमेट पीटकनाशी क्लोरिन से अधिक सक्षम होने पर भी जैव-निम्नीकृत है। इस संदर्भ में खाद्य सामग्रियों में ऑर्गानाक्लोरिन की उपस्थिति महत्वपूर्ण बात है। यद्यपि पीडकनाशी एक खास जीवाणु के खिलाफ प्रयुक्त होने पर भी अन्य जीवाणुओं को उसी पर्यावरण में रहकर वांछनीय जीवाणुओं को प्रत्यक्ष रूप में मारता है या खाद्य साधन को संदूषित करके जानवरों एवं मानवों पर विरुद्ध स्वास्थ्य प्रभाव का कारण बन जाता है।

स्थायी पीडकनाशी, अक्रिय और अनिम्नीकृत है और इसके अलावा उपभोक्तृ जीवाणु के शरीर में जैव-संचित है और जीवविज्ञानीय खाद्य चेन के प्रत्येक आगमी स्तर पर सांद्रित है। इन पदार्थों का संचयन मत्स्य के भरण आदत से संबंध रखता है। जल के पीडक नाशी अवसादों के साथ अधस्तल पर होता है और अधस्तल के भरक खाद्य के साथ इसका भी अंतग्रहण करता है। यद्यपि इन पदार्थों का उपापचय न होने और संपूर्ण रूप में बाहर न निकालने के कारण जीवाणु के शरीर पर उसका सांद्रण खाद्य चेन की उन्नति के साथ बढती है। संसाधित समुद्री खाद्य केलिए गुणता मानकों की बढती के इस युग पर क्सेनोबयोटिक अपशेषों का खासकर, उत्पन्नों पर पॉलीआरोमाटिक हाइड्रोकार्बन और भारी धातु अपशेषों की उपस्थिति एक मुख्य स्वास्थ्य खतरा बन गयी है। यह समुद्री

metal residues in the products has become an important health hazard. This is particularly true in the light of the EU regulations on sea food. Of late, the residue of these chemicals have been reported in low levels in milk, animal fat and human milk everywhere in the world. Thus monitoring of these organochlorine residues in food commodities is a priority concern for the authorities concerned with health protection.

There are evidences to suggest that certain organochlorine compounds, can cause breast and endometrial cancers through their estrogenic potential in women. There are reports indicating that perinatal exposure of experimental rats to Heptachlor resulted in the suppression of the primary IgM and secondary Ig G anti-SRBC responses. Because of the diverse clinical manifestations of organochlorine, it has become a point of great concern as far as health of consumer is concerned. Because of their health effects, different agencies have prescribed limits for the presence of organochlorine pesticides in water and food items. As per the regulations of Environmental Protection Agency, USA the water meant for drinking should not have pesticides above 0.1 ppb and the fish and shell fish have a limit for different pesticides as per Food and Drug Administration, USA.

A study conducted at CIFT on the levels of organochlorine pesticide residues in water used in fish processing plants has shown that 10% of the samples are free from organochlorine pesicides residues. The level of these compounds in the remaining samples ranged from 0.001 ppb to 4.6 ppb. The three organochlorine pesticides, Heptachlor, opDDT, which are well known for their adverse and toxicological effects on nervous system and liver function, were found to be absent in all the samples. The frequency of detection of the individual pesticides in the water samples analyzed is given in Fig. 1. Few of the samples contained higher levels of individual pesticides residue (0.1 ppb) than that prescribed by EC standard for drinking water.

Investigations in the level of pesticides in the shrimps have shown that 30% of the samples were free of

खाद्य के विनियमों के आधार पर सच भी है। आजकल इन रासायनिकों के निम्नस्तरीय उपस्थिति दूध, पशुवसा और मानव दूध में रिपोर्ट की गयी है। इसलिए खाद्य सामग्रियों में इन आर्गानाक्लोरिन अपशेषों के मॉनिटरण स्वास्थ्य सुरक्षा से संबद्ध प्राधिकारियों का प्राथमिक विषय हो जाता है।

यह सुझाव देने केलिए सबूत है कि कुछ ऑर्गानोक्लोरिन संयुक्तों ने उनके इन्स्ट्रोजन्य क्षमता द्वारा महिलाओं पर स्तन एवं गर्भाशय कैंसर का कारण बन जाता है। रिपोर्ट सूचित करती है कि हेपटाक्लोर पर पेरिनेटल अनावरित पेरीक्षणात्मक चूहे प्राथमिक तौर पर 1 gm और द्वितीय तौर पर 1gc प्रति SRBC प्रतिक्रियाओं को दमनित करते हुए दिखाई पडा। आर्गनोक्लोरिन के विविध चिकित्सीय अभिव्यक्ति के कारण उपभोक्ता के स्वास्थ्य के संबंध में यह एक खास बात हो गयी है। उनके स्वास्थ्य प्रभाव के कारण विभिन्न एजेन्सियों ने जल और खाद्य सामग्रियों पर आर्गनोक्लोरिन पीडकनाशियों की उपस्थिति केलिए निर्धारित सीमा रखी है। पर्यावरण संरक्षण एजेन्सी यू एस ए के विनिमयों के अनुसार पीने के पानी में 0.1ppb से अधिक पीड़कनाशी नहीं होना चाहिए और खाद्य और दवा प्रशासन यू.एस.ए. के अनुसार मत्स्य और सीपी में विभिन्न पीडकनाशियों की सीमा होनी चाहिए।

मत्स्य संसाधन संयंत्रों पर प्रयुक्त जल में ऑर्गानोक्लोरिन पीडकनाशी अपशेष के स्तरों पर सिफ्ट में संचालित अध्ययन ने दिखाया कि 10% नमूने ऑर्गनोक्लोरिन पीडकनाशी अपशेषों से मुक्त है। बाकी नमूनों में इन संयुक्तों के स्तर 0.001 पी पी बी से 4.6 पी पी बी स्तर रेंज में था। तीन ऑर्गानोक्लारिन पीडकनाशी यानी हेप्टाक्लोर, ओ पी डी डी टी जो स्नायु तंत्र व्यवस्था एवं जिगर व्यवस्था पर प्रतिकूल एवं विषैले असर डालने के कारण प्रसिद्ध है, इन नमूनों में अनुपस्थित दिखाई पडा। जल नमूनों में प्रत्येक पीडकनाशियों की विश्लेषित आवर्तिता जाँच चित्र 1. में दी गयी है। पीने के पानी केलिए निर्धारित EC मानक से उन्नत स्तर का प्रत्येक पीडक अवशेष (0.1ppb) कुछ नमूनों में दिखाई पडा।

झींगों पर पीडकनाशियों के स्तर पर किए गए अनुसंधान ने दिखाया कि नमूनों में 30%, ऑर्गानोक्लारिन से मुक्त है। (चित्र 2.) α–BHC, आल्ड्रिन और opDDT आदि किसी भी नमूनों में नहीं थे। विश्लेषित

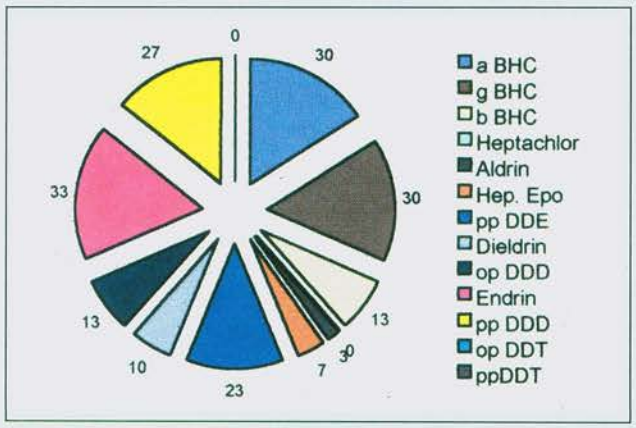

Fig. 1 - Frequency of occurrence (%) of organochlorine pesticides residues in water

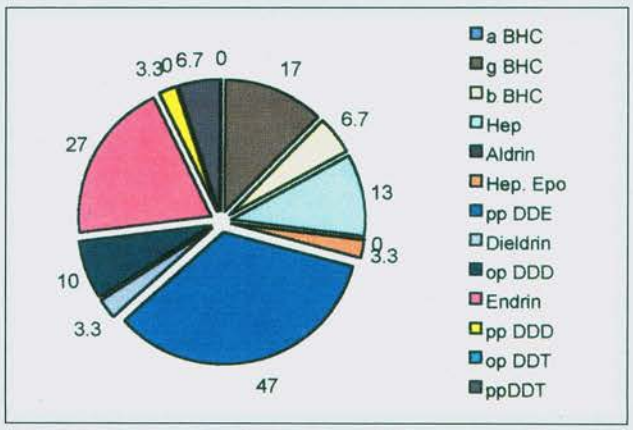

Fig. 2 - Frequency of occurrence (%) of organochlorine pesticides residues in shrimp

organochlorines (Fig. 2). α-BHC, Aldrin and opDDT were not detected in any of the shrimp samples. ppDDE, Endrin, γ-BHC, Heptachlor, opDDD, β-BHC, Heptachlor epoxide, Dieldrin, and ppDDD were detected in the samples analyzed. The pesticide concentrations in the samples analyzed are generally below the toxic limit prescribed.

In conclusion, the present study indicated that the process water and shrimp samples analyzed contained organochlorine pesticide residues but in most cases within the safe limit prescribed by various agencies. Hence, in general the process water used in fish processing industries are of safe and of good quality and the shrimp samples are safe for human consumption as far as organochlorines are concerned.

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नमूनों में ppDDE, एन्ड्रिन, γ-BHC, हेप्टाक्लोर, opDDD, β-BHC, हेप्टाक्लोर इपोक्साइड, डीलड्रिन और ppDDD आदि दिखाई पडे थे। नमूनों में दिखाई पडे पीडकनाशी सांद्रण निर्धारित विषैली सीमा से निम्न था।

अध्ययन ने सूचित किया कि विश्लेषित संसाधित जल और झींगे नमूनों में ऑर्गानोक्लोरिन है लेकिन अधिक मामलों में विभिन्न एजेन्सियों द्वारा निर्धारित, सुरक्षा सीमा तक है। इसलिए मत्स्य संसाधन व्यवसाय केलिए प्रयुक्त जल सुरक्षित एवं अच्छी गुणता का होना चाहिए और ऑर्गानोक्लोरिन के संबंध में झींगे मनुष्य उपभोग केलिए सुरक्षित होना चाहिए।

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Processed jelly fish export from Veraval
वेरावल से संसाधित जेल्ली मत्स्य निर्यात

In an effort to diversify the export of seafood commodities, processors from Veraval region have attempted to utilize the jelly fish resource abundantly available along Gujarat coast. Among all the edible jelly fish species (belonging to order Rhizostomeae) available throughout the world, three species, namely *Rhopilema hispidum, Cephea cephea* and *Lobonema smithii* are reported in Indo-west pacific region. Veraval Centre of CIFT has undertaken a pioneering effort to standardize the processing parameters for production of dried jelly fish for export.

Jelly fish collected from Veraval coast as a trawl bycatch was analyzed for various biochemical parameters. The protein and moisture content in tentacles were found to be 0.618% and 96.16%, where as that in umbrella were 0.923% and 96.11% respectively. The maximum weight of umbrella can be upto 6-10 Kg. and tentacles about 4-10 Kg. The process parameters of jelly fish curing were standardized by treating with varying concentrations of salt and alum. After a week of processing it is drained and kept under chilled storage. The yield of finished product is 6-7%. The detailed procedure for production of dried jelly fish is shown in the flowchart.

Jelly fish ready for processing

Japanese market continues to be the leading destination for processed jelly fish which is being gradually accepted as a delicacy in most of the Southeast Asian countries. In this context, the prospects of processed jelly fish export from India seems to be quite encouraging. Few containers of jelly fish have been exported from Veraval during the last season.

समुद्री खाद्य सामग्रियों की निर्यात विविधता के लिए वेरावल क्षेत्र के संसाधकों ने गुजरात तट पर अधिक मात्रा में उपलब्ध जेल्ली मत्स्य साधनों को प्रयुक्त करने का प्रयास किया। दुनिया में उपलब्ध सभी खाने योग्य जेल्ली मत्स्य जातियों में तीन जातियाँ *रोपिलेमा हिस्पिडम*, सेफिया सेफिया और *लोबोनिमा स्मिथि* आदि इन्दो-पैसिफिक क्षेत्र के है ऐसा रिपोर्ट की गयी है। निर्यात केलिए सूखे जेल्ली मत्स्य के उत्पादन के लिए संसाधन पैरामीटरों को मानकीकृत करने का अग्रणी प्रयास सिफ्ट के वेरावल अनुसंधान केन्द्र लिया गया है।

ट्राल उप पकड के रूप में वेरावल तट से संचित जेल्ली मत्स्य को विभिन्न जैव रासायनिक पैरामीटरों के लिए विश्लेषित किया गया। स्पर्शिकाओं में दिखाई पडे प्रोटीन व आर्द्रता अंश 0.618% और 96.16% दिखाई पडा लेकिन अंब्रेला में क्रमानुसार 0.923% और 96.11% थे। अंब्रेला का अधिकतम वज़न 6-10 कि.ग्रा. और स्पर्शिकाओं का 4-10 कि.ग्रा. हो सकता है। जेल्लीफिश अभिसाधन के प्रक्रिया पैरामीटरों को नमक व फिटकरी के विभिन्न सांद्रणों के उपचार द्वारा मानकीकृत किया गया। एक हफ्ते के संसाधन के बाद उसका जल निकास करके शीतित संग्रहण में सुरक्षित रखता हैं। अन्तिम उत्पन्नों का उत्पाद 6-7% है। सूखे जेल्ली के उत्पादन संबंधी ब्योरेवार प्रक्रिया फ्लोचार्ट में दिखाया गया है।

संसाधित जेल्ली मत्स्य के लिए जापनीस बाज़ार अग्रणी गंतव्य स्थान रहा। साथ ही सूखे जेल्ली फिश की दक्षिणी पूर्वो एशियाई राष्ट्रों के स्वादिष्ठ खाद्य के रूप में क्रमशः स्वीकृति हो रही है। इस संदर्भ में भारत से निर्यातित संशोधित जेल्ली फिश के भविष्य प्रोत्साह जनक दिखाई पडा। वेरावल से पिछले मौसम के दौरान जेल्ली फिश की कुछ डिब्बाओं का निर्यात किया गया था।

Flow chart for production of dried jelly fish for export

Washing the jelly fish in sea water and cutting

↓

Removal of intestine, gonad and digestive juices and washing

↓

Umbrellas are cleaned, uncurled and flattened. The edges are trimmed using wooden knives

↓

Cleaned umbrellas are immersed in solution containing 10% Salt, 4% Alum and little bleaching powder for one day. pH of 4 is maintained using lime

↓

Umbrellas are taken out and immersed in another solution of 15% Salt and 2% Alum for 2 days

↓

Umbrellas are taken out and immersed in 20% Salt solution for 4 days

↓

Umbrellas are removed from solution and stacked over sloped draining board under chilled condition

↓

Grading and packing

↓

Storage and transportation at 2-4°C

-Dr. Rajendra Badonia, Dr. D.I. Khasim and **Dr. L. N. Murthy**, Veraval Research Centre of CIFT, Veraval

निर्यात केलिए सूखे जेल्ली फिश उत्पादन केलिए फ्लो चार्ट

समुद्री जल में जेल्ली मत्स्य की धुलाई करके स्पर्शिकाओं को काटना है।

↓

आँते, यौन ग्रंथि और पचन रस को दूर करके धुलाई करती है।

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अंब्रेल्लाओं को साफ करके अकुण्डलित करके बराबर कर देता है। काष्ठ चुरियों को प्रयुक्त करके अग्रभागों का अलंकरण करता है।

↓

साफ किए गए अंब्रेल्लाओं को 10% नमक, 4% फिटकरी और थोडा सा ब्लीचिंग पाउडर से युक्त घोल में एक दिन निमज्जित रखता है। विवर्णन पाउडर को प्रयुक्त करके 4 के, पी एच को बनाए रखता है।

↓

अंब्रल्लाओं को बाहर लेकर 15% नमक और 2% फिटकरी से युक्त घोल में 2 दिनों तक निमज्जित रखता है।

↓

फिर उसमें से अंब्रल्लाओं को निकालकर 20% नमक घोल में 4 दिनों केलिए निमज्जित रखता है।

↓

अंब्रेल्लाओं को घोल से निकालकर चढाऊ निस्राव बोर्ड पर शीत अवस्था में खूँटों से बाँधकर रखा जाता है।

↓

ग्रेडिंग और संवेष्ठन

↓

2-4^0 सी में संग्रहण एवं परिवहन

-डॉ. राजेन्द्र बडोणिया, डॉ. डी. आई. खासिम और **डॉ. एल.एन. मूर्ति**
सिफ्ट वेरावल अनुसंधान केन्द्र

Quantitaive PCR (QPCR) set up for genomic investigations

जीनोमीक अन्वेषण के लिए मात्रात्मक पी सी आर (क्यू पी सी आर) को स्थापित किया गया

White Spot Syndrome Virus (WSSV) is the most devastating viral pathogen affecting shrimp farming. Although conventional PCR method is very sensitive to the WSSV virus, it will not detect the virus when present in very low numbers. Further, quantification of the number of virus particles in a sample is not possible with conventional PCR methods. The Real-Time PCR (QPCR), on the other hand, is very rapid and ultra sensitive for detection and quantification of the virus particles even when present in very low numbers. For this, the RT-PCR makes use of the DNA specific SYBR Green dye, which fluoresce when bound with double stranded DNA. The quantum of fluorescence produced is directly proportional to the amount of input DNA. Using this facility, a minimum detection level of 2 virus particles of WSSV from shrimp post larvae have been achieved.

Real - Time PCR setup

- Dr. Toms C. Joseph and **Dr. P.K. Surendran**
Microbiology, Fermentation and Biotechnology Division, CIFT, Cochin

झींगे खेती को प्रभावित रोगाणु है सफेद चित्ति संलक्षण वाइरस (डब्ल्यू एस एस वी)। अत्यधिक विध्वंसक विष डब्ल्यू एस एस वी वाइरस के लिए परम्परागत पी सी आर पद्धति बहुत संवेदी होने के बावजूद, यह बहुत कम मात्रा में होने पर वाइरस को खोज नहीं सकता है। और आगे परम्परागत पी सी आर पद्धति से नमूने में वाइरस अंश की संख्या के परिमाणन संभव नहीं है। दूसरी ओर रिअल-टाइम पी सी आर (क्यू पी सी आर), यह बहुत कम संख्या में उपस्थित होने पर भी वाइरस अंश के खोज एवं परिमाणन के लिए बहुत ही तीव्र और अत्यधिक संवेदी है। इस के लिए विशेष एस वाई बी आर हरा रंग डी एन ए को आर टी - पी सी आर काम में लाता, जब दुगुना संकरग्रस्त डी एन ए से घेर जाने पर यह प्रतिदीप्त होता। निवेशी डी एन ए की मात्रा का प्रतिदीप्ति उत्पादित प्रमात्रा के सीधे आनुपातिक होता है। इस सुविधा की प्रयुक्ति से, झींगा पश्च डिंभक (पी एल) से डब्ल्यू एस एस वी के 2 वाइरस अंश के अल्पतम स्तर को प्राप्त किया जा सकता है।

डॉ. टोम्स सी. जोसफ और **डॉ. पी.के. सुरेन्द्रन**
सूक्ष्मजीव विज्ञान किण्वन एवं प्रौद्योगिकी डिविजन, सिफ्ट, कोचीन
अनुवाद : श्री पी. शंकर

Training Programmes Conducted

During the period under report the following training programmes were conducted at Cochin

i. Packaging of fish and fish products (21 March - 2 April)
ii. Detection and enumeration of public health indicator organisms in fishery products (1 April – 18 May & 5 April-26 May)
iii. Seafood quality assurance (11-26 April)
iv. Laboratory techniques in microbiological examination of seafood (11–30 April & 13–25 June)
v. Value added products, fish pickles etc. (20–26 April)
vi. Fishing technology, fish processing and quality control aspects (20-29 April)
vii. Advance course on seafood HACCP (3 –7 May)
viii. Production of fish fingers, balls, cutlets, pickle and fried prawns (10–12 May)
ix. Fish processing (10–24 May)
x. Production of prawn pickle (11 May)
xi. Chemical and microbiological analysis of water (12–21 May)
xii. Extraction and estimation of proteases from typical aerobic bacteria from fish (17 May–18 June)
xiii. Biochemical analysis and instrumentation (3- 10 June & 15–25 June)
xiv. Production of value added fish products (6–10 June)

Outreach Programmes at Agarthala

The Institute organized a training programme on "Standardization and popularization of ready to serve North East fish curry" at College of Fisheries, Central Agricultural University, Agarthala during 17 – 18 April, 2005. Dr. T.K. Srinivasa Gopal, Principal Scientist and Dr. C.N. Ravishankar, Senior Scientist conducted the programme. They also delivered the following special lectures at the College:

i. Modified atmosphere package of fish – Dr. T.K. Srinivasa Gopal
ii. Packaging of fish and fish products – Dr. C.N. Ravishankar

CIFT Joins Hands with CIBA in Organizing Training Programme

As a maiden venture to cater to the needs of the stake holders responsible for the production of shrimp/fish starting from the hatchery to a final finished product, a training programme on HACCP for aquaculturists and food technologists was jointly organized by CIFT, Cochin and CIBA, Chennai. Fifteen participants from aquaculture industry and four from processing industry underwent the training held at CIBA during 4-7 May, 2005. A proforma for the evaluation of the training programme by the participants was developed and distributed to all. An analysis of the filled in proforma revealed the conclusive proof for the success of the programme. The programme proposed by the Society of Aquaculture Professionals was developed by CIFT and CIBA with a view to bring the hatchery and grow out system under the HACCP. Accordingly in addition to the faculty from CIFT who have a good experience in conducting HACCP programme for the fish processors, faculty from CIBA also actively participated and the interaction by the participants on the topics covered by CIBA scientists was very much encouraging and paved a way to further sharpen the curriculam to the actual needs of the stake holders in the future training programmes. Dr. M.K. Mukundan, Principal Scientist and Acting Head, Quality Assurance and Management Division, Dr. S. Sanjeev, Dr. P.T. Lakshmanan, Principal Scientists and Dr. K. Ashok Kumar, Senior Scientist, represented CIFT. Dr. Kalaimani, Principal Scientist, Dr. K.K. Vijayan, and Dr. Alavandi, Senior Scientists from CIBA also participated as faculty members. Thus in one HACCP training programme jointly organized by CIFT and CIBA a complete coverage of all the aspects starting from the hatchery till the of-final product has been carried out.

Dr. M.K. Mukundan taking classes

Practical session in progress

Post – Tsunami Activities

The tsunami which hit the Indian coast on 26 December 2004 brought in its wake, havoc and destruction to hundreds of villages all along the south-

Vessels damaged by tsunami at Nagapattinam

Discussion with tsunami affected craft owners at Nagapattinam

west and east coasts, claiming the lives of thousands of people. A large chunk of the fishing fleet of Tamil Nadu was destroyed. Greatest damages were in the Nagapattinam, Cuddalore and Kanyakumari regions. Since there exists a wide regional variation in the design of fishing vessels owing to a number of operational parameters, the authorities were at a loss in establishing the appropriate specifications of the vessels to be replaced as it is not practical to replace all the varied designs in a short duration of time. The scientists and technicians of the Fishing Craft Design Section of the Institute swung into action immediately after the calamity on a war footing to collect and study the different designs of fishing vessels. An extensive and exhaustive survey of the damaged vessels was made. Eight designs were identified for replacement, two each from Nagapattinam, Cuddalore, Pondicherry and Kanyakumari regions, drawings and specifications prepared and the same submitted to the concerned State Fisheries Department and Ministry of Agriculture, Government of India for further action. The boat builders making fibreglass boats in different parts of the country, especially along the Tamil Nadu coast, were given all necessary technical guidance and help in making fibreglass boats.

The Institute's Director and Naval Architect gave necessary technical inputs at a meeting convened at Delhi by the Union Minister for Agriculture, Shri Sharad Pawar which was attended by the Hon'ble Union Finance Minister Shri P. Chidambaram and Hon'ble Union Minister for Shipping and Road Transport, Shri T.R. Baalu and senior level officers including Secretary (AH&D), Ministry of Agriculture. This was followed by a meeting at Chennai which was attended by the Hon'ble Union Ministers, Hon'ble Chief Minister of Tamil Nadu and senior officials of Tamil Nadu and Union Governments. In this meeting also, all technical inputs were provided by the Director, CIFT.

Following this, the Govt. of India constituted a five member delegation under the leadership of Dr. P.M.A. Hakeem, Secretary (AH&D), Ministry of Agriculture, to visit Japan to explore the possibility of importing improved FRP vessels to replace the fishing fleet destroyed on the east coast. Dr. K. Devadasan, Director and Shri M. Nasser, Principal Scientist (Naval Architect) of CIFT served as members of the delegation and visited five major FRP boatyards in Japan in February 2005 and held technical and commercial discussions with the concerned authorities. The Committee has since submitted its report to the Govt. of India.

Dr. K. Devadasan (3rd from right) and Shri M. Nasser (3rd from left) at the Yanmar boat yard, Japan

Rumors were spread all over the country that seafood after the tsunami was not safe for human consumption, and that it was contaminated with various types of food poisoning microorganisms and harmful pathogens. A detailed investigation on the post tsunami food safety aspects of the fish and shellfish from all localities in the west coast of India, starting from Alleppey to the Malabar coast and in the Andhra coast on the east was

Visakhapatnam fisheries harbour bustling with activity after the tsunami

therefore undertaken by the Institute in which the scientists of the Microbiology, Fermentation & Biotechnology Division at Cochin and Visakhapatnam Centre participated.

The scientists collected nearly 100 samples of fishes, shrimps, clams, mussels and cephalopods from the local markets, including nearly 40 species from the Kerala Coast. The samples included five species of shrimps viz., tiger prawns, naran, poovalan,

Post tsunami samples after microbiological analysis

kazhanthan and fresh water scampi, clam meat of different size groups of clams harvested from the Vembanad Lake and mussel from Fort Cochin. The fishes included seer fish, pearl spot, tuna, caranx, jew fish, lactarius, tilapia, cat fishes, ribbon fishes, pomfrets, flat fishes, oil sardine, mackerel etc. From the Andhra Coast, 20 samples comprising 16 species of marine fish (*Rastrelliger kanagurta* (mackerel), *Scomberomorus* spp. (seer), *Stromateus niger* (black pomfret), *Stromateus argenteus* (silver pomfret), *Lepturacanthus savala* (ribbon fish), *Sphyraena* spp. (barracuda), *Tachysurus* spp. (catfish), *Psenus indicus, Nemipterus* spp., *Pentaprion longimanus, Caranx affinis, Priacanthus hamru* and, *Anchoviella* spp.), three species of marine shrimp (*Penaeus* spp., *Metapenaeus* spp. and *Parapenaeopsis* spp.) and one species of squid (*Loligo* spp.) were procured from Visakhapatnam fisheries harbour. Surveillance was made of the pathogens like Salmonella, *Vibrio cholerae, V. parahaemolyticus, Staphylococcus, Escherichia coli, Enterobacteriaceae, Listeria, Streptococci*, other coliforms etc. In CIFT, a National Network Project on Seafood Safety has already been in place for the past 17 months. As the project covers the entire west and east coasts of India, database on seafood safety was made available by the Institute and the microbial quality of post - tsunami seafoods compared with the existing data on pre - tsunami fish. The results of the detailed investigation indicated that the microbial quality of the seafood has not undergone any change due to the tsunami factor. No new pathogen was found. Seafood was as safe as it used to be and could be consumed without any fear. This finding was given wide publicity through press releases and the visual media, which was very helpful to the fishermen.

In response to a request received from the Commissioner of Fisheries, Andhra Pradesh, a team of scientists from the Fishing Technology Division functioned as technical experts for ensuring the supply of quality net materials to the affected fishermen at

Discussion with A.P. State fisheries officials

competitive price in a definite time frame. Discussions were held with the Commissioner of Fisheries and Joint Director of A.P. State Fishermen Co-op. Societies Federation Ltd. and specific queries relating to (i) BIS specification for twines, yarns, ropes and webbings, and (ii) possibility of replacing nylon monofilament and multifilament webbings for gill nets with polyethylene webbings, clarified. They also attended the 3rd meeting of the State level Committee set up by the Govt. of Andhra Pradesh on 22 January 2005 headed by the Principal Secretary, Govt. of Andhra Pradesh and comprising the Commissioner of Fisheries as Member Secretary and Commissioner of Relief & Disaster Management; Chief Executive Officer, Velugu; Commissioner of Industries; Representative of Secretary, Institutional Finance and Representative of Commissioner, Rural Development, as members.

Forthcoming Events

Winter School on Modern techniques for the analysis of fish and fish products

The Biochemistry and Nutrition Division of CIFT, Cochin is organizing a Winter School on "Modern techniques for the analysis of fish and fish products" during 19 October to 8 November, 2005. The Winter School is planned to give the participants both theoretical as well as practical exposure to important techniques practiced in Biochemistry and will cover the following topics :

- Basic biochemical aspects of fish
- Biochemical changes in fish during storage
- General techniques in biochemical research
- Chemical contaminants in aquatic products
- Principles of Spectrophotometric analysis
- Chromatographic techniques – General principles
- Applications of electrophoretic techniques

The course also includes practicals on these aspects to make the participants familiar with the analytical techniques. Application form for participation can be downloaded from CIFT web site www.cift.res.in. The duly filled in application should reach Dr. P.G. Viswanathan Nair, Head, B&N Division and Director, Winter School not later than 31st August, 2005.

Winter School on Current trends in packaging of fish and fishery products

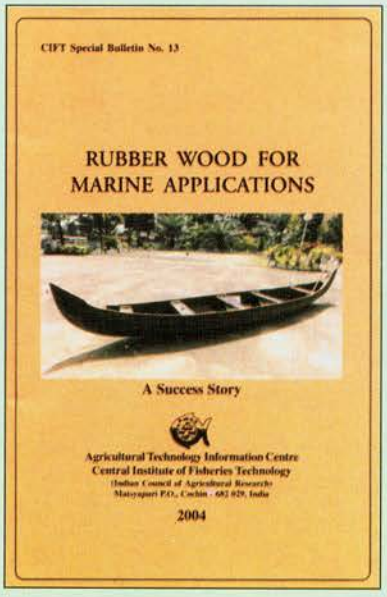
The Fish Processing Division of CIFT, Cochin is organizing a Winter School on "Current trends in packaging of fish and fishery products" during 17 November to 7 December, 2005. The Winter School will be built around theory and practical classes on the following topics:

- Handling and transportation of fish
- Packaging of value added fish and fishery products
- Flexible and rigid packaging materials
- Kraft paper, duplex board & corrugated fibre board
- Thermal processing, MAP, Vacuum and Shrink packaging
- Eco friendly packaging materials
- Active and intelligent food packaging
- Nutritional labeling
- Safety of packaging materials
- Quality assurance in packaging
- Testing of packaging materials
- Containerisation and palletisation

Application form for participation can be downloaded from CIFT web site www.cift.res.in. The duly filled in application should reach Dr. T.K. Srinivasa Gopal, Principal Scientist and Director, Winter School not later than 30th September, 2005.

Rubber wood for marine applications – A new publication from CIFT

India with a coastline of nearly 6000km, uses large amount of timber for shipping and fishing activities. The requirement of timber for marine fishery industry is roughly estimated to be around 20,000m^3 for annual replacement alone. When timber was freely available at lower cost, the accent was on the use of very durable traditional timbers like teak. But as this timber is in short supply and the fact that timber is still the most favored material for boat building among the rural fishing communities, there is a need for the use of preserved wood over untreated non-durable species of wood or even durable wood. At the time when India finds itself critically short of industrial timber, the abundant availability of rubber wood, an agricultural by product is a boon to the traditional fisheries sector. Studies conducted at CIFT have shown that this highly perishable wood can be suitably upgraded with preservative treatment.



The present publication (CIFT Special Bulletin No. 13 – Rubber wood for marine applications – a success story) describes in detail, how rubber wood can be used as an alterative timber. The first chapter describes the history of rubber, utilization pattern, properties of the wood etc. Bio-deterioration of rubber wood and its preservation are dealt with in the next chapter. Performance of preservative treated rubber wood under field conditions are highlighted in the chapter that follows. The construction procedures of fishing canoes from rubber wood, the economics of construction of the canoes and performance evaluation are also described. As a logical sequel to the construction of canoes made of treated rubber wood, canoes were made out of rubber wood and sheathed with Fibreglass Reinforced Plastic, by the Institute. The detailed procedure described for fabrication of FRP sheathed canoes may enable the fishermen to make efficient use of the under utilized rubber wood for small canoe construction. A concise bibliography on the subject is also appended in this publication prepared by Dr. Leela Edwin, Senior Scientist of Fishing Technology Division. The publication priced at Rs. 40/- can be had from ATIC Manager, CIFT, Matsyapuri P.O., Cochin-682 029.

Coastal Awareness Camps Held

Under the project 'Action research on community based coastal zone management with specific involvement of women' four coastal awareness camps were held for school childrenduring April – May 2005 in which a total of 60 school children participated. At the inaugural function held on 1 April, 2005 chaired by Dr. K. Devadasan, Director, CIFT, Shri G. Mohan Kumar, IAS, Chairman, MPEDA, Cochin was the Chief Guest. Smt Kusumam John, President, Chellanam Grama Panchayat inaugurated the public meeting that followed. Dr. Mohan Joseph Modayil, Director, CMFRI, Cochin, Smt. Elsie Alex, Panchayat member and Smt. A.T. Philomina, Headmistress, St. Mary's HS, Chellanam offered felicitations. The function was followed by an "Ottamthullal" (a folk dance of Kerala) on responsible fisheries composed by Dr. Krishna Srinath, and presented by a Kalamandalam team.

The topics covered under the camps included responsible fishing methods, net making, importance of mangroves, rain water harvesting, mushroom cultivation, preparation of vermicompost, preparation of fish ensilage and fish cutlet, and paper bag making.

The valedictory function was held on 30 May at Chellanam in which Dr. K. Devadasan, Director, CIFT presided. Dr. Krishna Srinath, Principal Investigator, while welcoming the gathering explained the aims and objectives of the camp and the project. Prizes for best camp students and certificates for participation were distributed during the function. Shri P. George Mathai, Co-Principal Investigator proposed the vote of thanks.

'Ottamthullal' being performed

Shri G. Mohan Kumar, Chairman, MPEDA giving the chief guest's address. On the dais (L to R) : Smt. Elsie Alex, Smt. Kusumam John, Dr. K. Devadasan, Dr. Mohan Joseph Modayil, Smt. A.T. Philomina & Dr. Krishna Srinath

Technology Transferred

Technology of retort pouch processing of fish products was transferred to M/S Anns House of Sweets, Palai at a consultancy charge of Rs. 2.5 lakhs.

Radio Talk

Dr. G. Rajeswari, Scientist, Sr. Scale gave a talk on "Hook and line fishing methods of Visakhapatnam coast" through AIR, Visakhapatnam on 18 June, 2005

Lobster Traps Distributed

Five nos. of lobster traps were handed over to fishermen of Nagapattinam for field trials on 14 June and monitored fish traps distributed at Kannur, Kasaragod and Calicut.

Handing over technology document to M/s Anns House of Sweets

Kisan Call Centre / किसान कॉल सेन्टर

The Kisan Call Centre facility is in operation since January 2005 covering all States and Union Territories. **For expert's advise on all farm related problems, dial toll free No. 1551 from 6 AM to 10 PM on all seven days**

किसान कॉल सेन्टर की सुविधा सभी राज्यों व संघ शासित क्षेत्रों केलिए जनवरी 2005 से चालू है। **खेती से संबंधित सभी सुविज्ञ सलाह केलिए सप्ताह के सभी दिनों पर प्रात : 6.00 बजे से 10.00 बजे रात तक टॉल फ्री संख्या 1551 में डायल कीजिए।**

Participation in Exhibition

The Institute participated in the Fisheries Expo – 2005 held in connection with the National Seminar on Management challenges in rivers and associated ecosystem – Issues and strategies held at CICFRI, Barrackpore during 16-17 April, 2005.

Dr. Mangala Rai, DG, ICAR and Dr. S. Ayyappan, DDG (Fy.), ICAR in the exhibition stall

Technical Bulletin Published

A technical Bulletin in Gujarati on "Jelly fish processing and export potential" is published.

Talk Held

Dr. Jayesh Bellare, Professor, Dept. of Chemical Engineering & School of Biosciences and Bioengineering, IIT, Mumbai delivered a talk on " Nano Biotechnology for therapeutics and novel applications' at CIFT, Cochin on 17 June, 2005

Dr. Jayesh Bellare along with Director, CIFT

Visitors

Dr. P.V. Dehadrai, former DDG (Fy.), ICAR visited the Veraval Research Centre to study the prospects of fishery development along Saurashtra corridor. In this connection a meeting of the representatives from seafood exporters, MPEDA, EIA, State Fisheries Department, Veraval Industries Association etc. was held at the Centre on 16 June, 2005. The Scientist of the centre acompanied him to visit fisheries offices and landing centres of Mangrol and Diu.

Dr. Dehadrai having discussion with officials

Consultancy Project Taken up

A consultancy project is taken up from the administrations of the U.T. of Lakshadweep for the design and supervision of construction of 50 passenger boats for Inter Island Transport at Lakshadweep.

Personnel News

Participation in Seminars/Symposia/Workshops etc.

- **Dr. K. Devadasan**, Director, **Dr. B. Meenakumari**, HOD, FT, **Dr. P. Pravin**, Senior Scientist and **Shri M.V. Baiju**, TO (T6) – Workshop on Road map for developing fisheries in Andamans, CMFRI, Cochin (20-21 April)
- **Dr. K.G. Ramachandran Nair**, HOD, FP–Brain Storming session on Development of processing of value addition in fresh water fishes, College of Fisheries, G.B. Pant University of Agril. & Technol., Pantnagar (25 April). He also presented a paper entitled, "Importance of the development of processing and value addition for freshwater fishes".
- **Dr. K.G. Ramachandran Nair**, HOD, FP–National seminar on Food quality and safety standards of agricultural raw and processed produce, organized by CIPHET, Ludhinana at New Delhi (26-27 April)
- **Dr. K.G. Ramachandran Nair**, HOD, FP – Core Committee meeting for the approval of syllabus of M. Sc.

Food Science, MG University, Kottayam (5 May)

❖ **Dr. B. Meenakumari**, HOD, FT – Technical workshop organized by West Hill Polytechnic, District Industrial Centre and Theeradesha Raksha Social Welfare Society, Calicut (11 June) (As resource person). Dr. Meenakumari delivered a talk on 'Remote sensing and potential fishing zone'.

❖ **Dr. B. Meenakumari**, HOD, FT and **Dr. Leela Edwin**, Senior Scientist – 36th Annual conference of the International Research Group on wood protection, Indian Institute of Wood Science, Bangalore (24-28 April). Dr. Leela Edwin presented a paper on 'Treated rubber wood for fishing canoes' by Leela Edwin, Saly N. Thomas and B. Meenakumari.

❖ **Dr. B. Meenakumari**, HOD, FT , **Dr. M.R. Boopendranath,** Pricipal Scientist, **Dr. Leela Edwin, Dr. Saly N. Thomas, Dr. P. Pravin,** Sr. Scientists, **Shri M.P. Remasan, Dr. R. Reghu Prakash, Dr. G. Rajeshwari, Shri U. Sreedhar,** Scientists, Sr. Scale and **Dr. V.R. Madhu,** Scientist - Core meeting of CIFT-CMFRI collaborating project on Appraisal of Marine fisheries of coastal states of India, CMFRI, Cochin (22-24 June)

❖ **Dr. P.N. Joshi**, Acting HOD, Engg. –International workshop on Entrepreneurship development in the renewable energy subsector in Asia, Institute of Small Enterprises and Development, Cochin (19-20 April)

❖ **Dr. Krishna Srinath**, Acting HOD, EIS and **Shri V. Radhakrishnan Nair**, Scientist – Meeting on Development of fishermen/farmer friendly information base under the Network programme, CIBA, Chennai (7-8 April)

❖ **Dr. P.K. Surendran**, Acting HOD, MFB – Meeting of the core group for formulating guidelines for aquaculture practice, Aquaculture Authority of India, Chennai (5-6 April)

❖ **Dr. M.R. Boopendranath,** Principal Scientist – Meeting of the Commission of experts constitute by Govt, of Kerala to study ecological/ environmental impact of dredging at Vaduthala Kayal by Travancore Cements Ltd. (16 June)

❖ **Dr. M.R. Boopendranath,** Principal Scientist – Felicitation Meeting of the Academy of Tropical Aquatic Sciences (ATAS), College of Fisheries, Panangad (20 June). He also delivered a talk on 'Bycatch reduction devices in selective trawling' in the meeting.

❖ **Dr. P.T. Mathew, Dr. S. Sanjeev**, Principal Scientists, **Dr. T.V. Sankar, Dr. C.N. Ravishankar** and **Dr. Leela Edwin**, Senior Scientists – Capacity building workshop on Globalized economy, NAARM, Hyderabad (29-30 April)

❖ **Shri P.K. Vijayan**, Principal Scientist – 'Area investors meet' organized by the District Industries Department and Institute of Entrepreneural Development, Malappuram (16 April)

❖ **Dr. M.M. Prasad**, Scientist Incharge, Burla Research Centre and **Shri M.P. Remesan**, Scientist (Sr. Scale) – National seminar on Management challenges in rivers and associated ecosystem–Issues and strategies, CIFRI, Barrackpore (16-17 April). Shri Remesan also presented a paper, entitled, "Reverine fisheries of north Kerala" by M.P. Remesan, P. Pravin, B. Meenakumari and A. Ramachandran.

❖ **Dr. T.V. Sankar**, Senior Scientist – Assessor training course, NABL, New Delhi (2-5 May)

❖ **Dr. Saly N. Thomas**, Sr. Scientist and **Shri P. Muhamed Ashraf**, Scientist (Sr. Scale)-Training programme on 'Chemometric software' held at AMCO Software Prvt. Ltd., Bangalore (27 April)

❖ **Dr. G. Rajeswari** and **Dr. R. Raghu Prakash,** Scientists (Sr. scale)– Awareness programme on FAD's, Pudimadaka (3 April) (As Guest Faculty)

❖ **Shri P. Muhamed Ashraf**, Scientist (Sr. Scale) and **Smt. Usha Bhagirathan**, SRF–Kerala Environment Congress, Cochin (6-7 May)

❖ **Smt. J. Bindu**, Scientist (Sr. Scale) and **Shri K. A Martin Xavier**, SRF – Training programme on 'Sensory analysis of processed foods by sensory and instrumental methods', CFTRI, Mysore (18-20 April)

❖ **Shri J. Charles Jeeva**, Scientist – Refresher course on Information Technology in Agriculture, NAARM, Hyderabad (1-21 May)

❖ **Shri Rakesh Kumar** and **Shri J. Charles Jeeva**, Scientists – Seminar on Disaster management, Indian Red Cross Society, Cochin (7 May)

❖ **Dr. A.R.S. Menon**, Technical Officer (T8)-Inter Media Publicity Coordination Committee Meeting, Doordarshan Kendra, Thiruvananthapuram (29 June)

❖ **Dr. K. Sobha**, Technical Officer (T5) – Hindi workshop, Customs & Central Excise, Cochin (16 May), EIA, Cochin (23-24 June), Cochin Shipyard, Cochin (28 June) (As Guest faculty)

❖ **Dr. K. Sobha**, Technical Officer (T5) and **Shri P. Shankar**, Hindi Translator (T4)–Interlingual conference, Sri Sankaracharya University of Sanskrit, Kalady (19-21 June)

❖ **Shri Santhosh Alex**, Hindi Translator (T4) – Meeting called by the Income Tax Commissioner, Visakhapatnam and Chairman, TOLIC for Hindi Translators and Hindi Officers (8 June)

❖ **Shri Santhosh Alex**, Hindi Translator (T4) – Kabir Jayanti organised by East Coast Railways, Visakhapatnam (22 June). He also presented a paper on "Kabir ki Prasangiktha".

Personalia

Transfers

1. Shri Ravikumar, Senior Adminstrative Officer, CIFT, Cochin to IARI, New Delhi
2. Shri K.P.S. Gautham, Senior Adminitrative Officer, IARI, New Delhi to CIFT, Cochin

Promotion

Shri E. Damodaran, SSG II, Cochin as SSG III

Resignations

Ms E.K. Manju, (T3) (Maintenance Engineer), Cochin

Retirements

1. Shri K. Vasudevan Nair, Technical Officer (T7), Calicut
2. Shri M.K. Sasidharan, Technical Officer (T5), Cochin
3. Shri Philip Durom, Sr. Carpenter (T3), Cochin

Obituary

We deeply mourn the untimely and sad demise of Shri Harbhajan, Supporting Staff Grade III, Veraval Research Centre on 7th May, 2005. May the departed soul rest in peace.

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