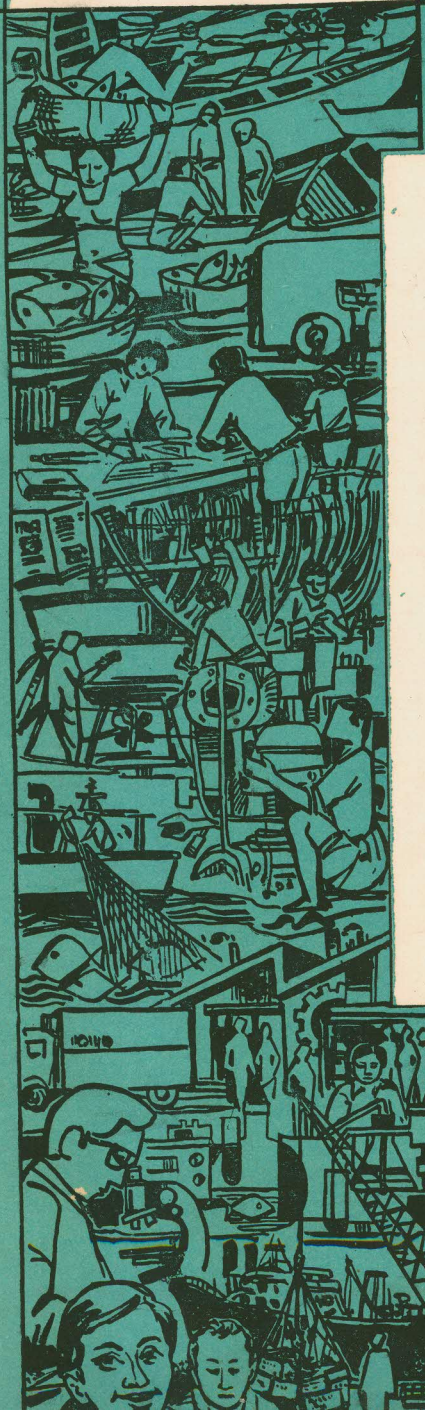




# Fish Technology newsletter

Vol. III No. 12

APRIL-JUNE 1984



The ICAR Pavilion at the Cochin '84 Exhibition

**CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY**

MATSYAPURI P. O.

COCHIM • 682 029

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# FOREWORD

## EDITORIAL COMMITTEE

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*Abbreviation: Fishtech News*

Fish Technology Newsletter is a quarterly intended to bring the fishery industry in India in touch with some of the important developments in fisheries technology resulting from investigations carried out at this Institute and elsewhere. It is not a research publication. Every effort has been earnestly made to express the ideas in non-scientific language. Its ultimate aim is the application of the results of contemporary research for the advancement of our fishery industry.

Fish Technology Newsletter does not owe allegiance to any manufacturer, patent, product or development agency unless otherwise specified. Its purpose is to open up a communication channel through which useful ideas can be exchanged, problems discussed and success shared. The process of exchanging views and opinions makes it easier to identify the real issues and that is where problem-solving begins.

We welcome contributions from any source which will help to achieve our above-mentioned aim. The sources of all such contributions will be acknowledged.

We also welcome suggestions from our readers for improvement in the contents and get-up of the Newsletter. Any part of this publication may be reprinted in any language if the translation is true and the source is acknowledged.

Editorial Committee.

# Summer Institute on Applications of Indigenous Electronic Instruments for Fishing and Fisheries Research

Development of instruments for acquisition of data direct from the field is rather new. This technology is fast developing all over the world. We are mostly depending on imported instruments or improvised methods for our programmes. Acquisition of data direct from the field is essential for fast and scientific implementation of the numerous programmes connected with fisheries and many of the investigations based on both marine and land-based environments. The Central Institute of Fisheries Technology, Cochin, has developed more than three dozen instruments for acquisition of data direct from the field, useful for our fast growing marine and other environmental investigations and related resource exploitations. A better understanding is necessary to the end-users on the scope and limitations of these innovations for their adoption and design of field projects.

In order to train the teachers/scientists/engineers/subject matter extension specialists/researchers on the scope, utility and limitations of the indigenously developed field operated instruments, a Summer Institute on Applications of Indigenous Electronic Instruments for Fishing and Fish-

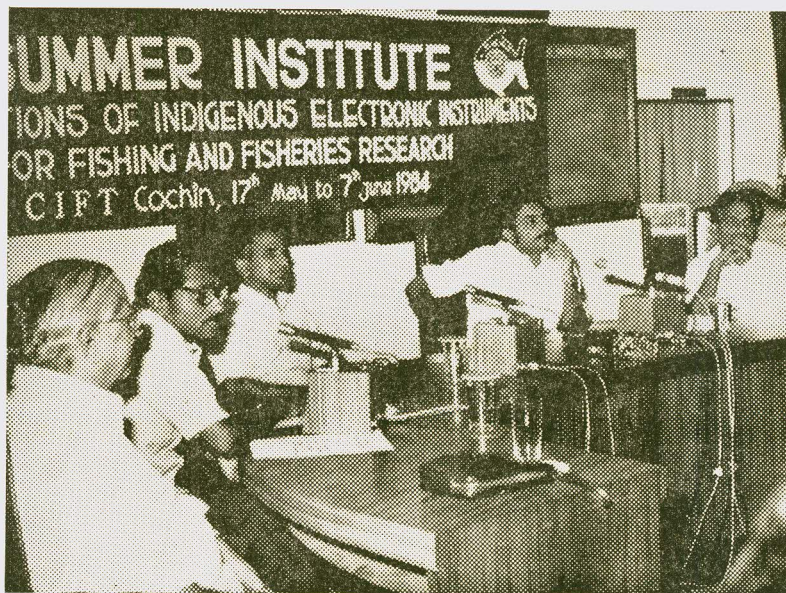
eries Research was organised by the ICAR at the CIFT from 17 May to 7 June 1984. This is the fourth Summer Institute held at the Institute. The 'Institute' is expected to help the participants to follow an instrumental approach for faster and precise solutions of their field oriented problems utilising the developments already made in the country as also to enable them to plan and execute their work smoothly and systematically with confidence in indigenous instrumentation capability wherever possible.

Shri. T. K. Sivadas, Scientist-S2 and Scientist-in-Charge,

Electronics and Instrumentation Division, CIFT was nominated the Director of the Summer Institute.

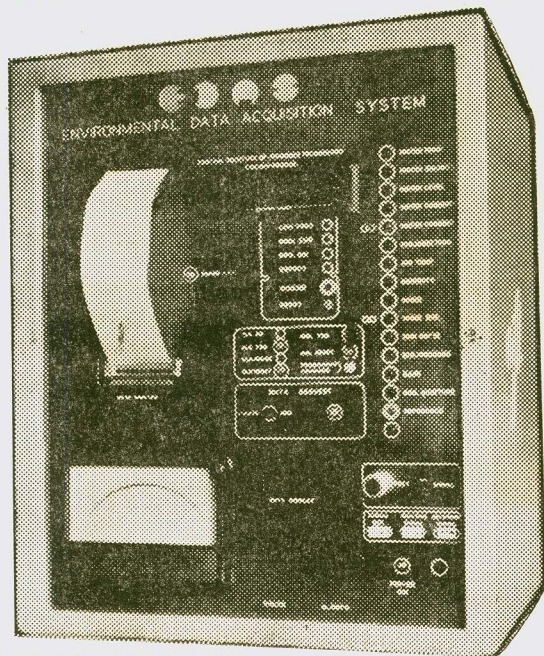
Twenty three participants from 9 States and 2 Union Territories attended this course which included both theory and practical sessions.

The theory classes included basic principles of physics, hydrodynamics, electronics and instrumentation relevant to measurement and acquisition of data straight from the field in connection with fishing, fisheries research, marine and land based environmental investigations.



Inauguration of the Summer Institute. On the dais, left to right Shri Om P. Dhamija, Shri T. K. Sivadas, Dr. K. Gopalan, Dr. D. Babu Paul and Dr. C. C. Panduranga Rao.

## ENVIRONMENTAL DATA ACQUISITION SYSTEM



FOR APPLICATIONS IN  
FISHERY HYDROGRAPHY, AQUACULTURE, COASTAL ENGINEERING,  
METEOROLOGY, AGRICULTURAL METEOROLOGY, WATER RESOURCES  
MANAGEMENT, OFF-SHORE PLATFORMS, SOLAR PONDS,  
ENVIRONMENTAL STUDIES.



developed by  
CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY  
MATSYAPURI P.O. COCHIN - 29.

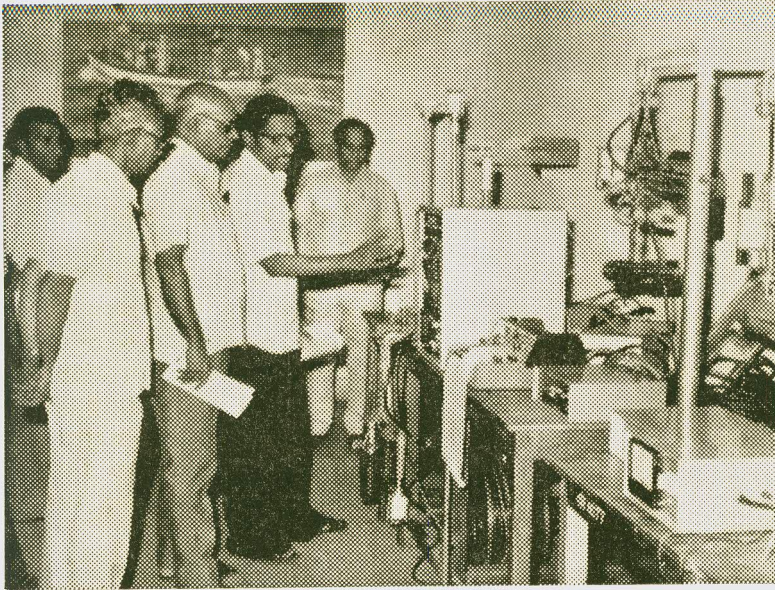
The practical sessions included performance evaluation of equipment and collection of data needed for studies relating to marine/estuarine environments, underwater fishing gear, standardisation of fishing craft and gear, behaviour studies of marine animals and fish processing.

The participants were exposed to the environmental and instrumentation problems of the various equipments, comparative features of different data monitoring/acquisit-

ion techniques, their limitations, scope and approach to practical solutions. Several field trips including six fishing trips were undertaken during which the various electronic instruments developed at CIFT were operated in the fishing grounds and the Cochin backwaters and data collected. Their specific advantages, limitations, operational specialities and probable errors in measurement were exposed in order to decide to what extent the instruments are suitable for various field pro-

blems. Study tours were undertaken to the Central Marine Fisheries Research Institute (CMFRI) and National Physical and Oceanographic Laboratory (NPOL), Cochin, which helped to compare the features of some of the equivalent imported equipments. The testing and calibration procedures of pressure dependent instruments were demonstrated in the test site of the NPOL at Idukki Reservoir. The participants were given project assignments for collection of data using the field instruments.

Dr. C. C. Panduranga Rao, Officiating Director, CIFT, welcomed the participants and briefed them on the goals of the Summer Institute. Dr. K. Gopalan, Vice Chancellor, Cochin University, inaugurated the Summer Institute. In his inaugural address the Vice Chancellor appreciated the pioneering work done by CIFT in the field of indigenous instrumentation. He stressed the need for popularising the methods and technology developed as an effort to update the quality and competence of Scientists, Technologists and other Professionals. The process of data collection in fisheries is complex in nature due to its multidisciplinary character and in this context he wished that the Summer Institute would open up many possibilities of developing a refined system of data collection and utilisation for the benefit of the country.



Some of the instruments used being explained by Shri T. K. Sivas, Director of the Summer Institute, to Dr. S. Vasudev, Chairman, State Committee on Science and Technology (Kerala). Shri M. R. Nair, Jt. Director, CIFT, is seen near him.

Dr. Babu Paul, Chairman, Cochin Port Trust, presided over the function.

At the Valedictory function, Shri. M. R. Nair, Joint Director, CIFT, welcomed the gathering. The valedictory address was given by Dr. S. Vasudev, Chairman, State Committee on Science and Technology (Kerala State). Dr. C. T. Samuel, Dean, Department of Industrial Fisheries, University of Cochin, presided.

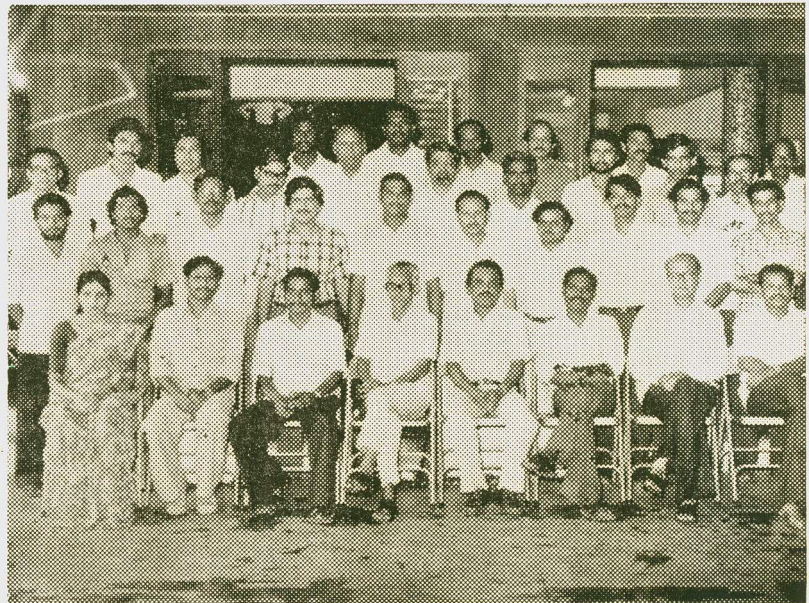
Following electronic instruments developed by CIFT were used for field demonstration and data collection.

1. Universal Marine Telemeter for measurement of various parameters of the trawl gear such as underwater tension, angle of attack and tilt of otter boards, trawl depth, mesh

distortion, catch, warp load, net-flow etc.

2. Speed and distance log.
3. Ship installed warp load meter.

4. Bathy thermometer.
5. Temperature-salinity-depth meter.
6. Direct reading digital current meter.
7. Ocean tele-lab for measurement of temperature, salinity, depth of operation, water current and current direction.
8. Freezer temperature monitor and alarm for remote measurement of temperature inside freezers and cold storages.
9. Autobrinometer for measurement of brine concentration in blanching tanks.
10. Moisture meter for measurement of moisture in dried fish, food grains and wood.
11. Fish activity recorder to study the activities of fish under simulated conditions in experimental tanks.



Participants with members of Academic staff.

12. Burnacle cirri beatings automatic counter
13. Oyster shell movement counter and recorder
14. Freezer temperature teleprinter
15. Bollard pull monitor to measure the load developed by engines of fishing vessels.
16. Environmental Data Acquisition System for remote measurement of sixteen parameters at programmed intervals with provision for manual and automatic operation, useful for studies connected with fishery hydrography, aquaculture, coastal engineering, meteorology, agricultural meteorology, water resources management, off-shore platforms, solar ponds, environmental studies etc.

The following staff of CIFT were involved in the various programmes of the 'Institute'.

Shri. T. K. Sivadas  
 Dr. K. Ravindran  
 Shri. P. Appukkutta Panicker  
 Shri. M. K. Kandoran  
 Shri. C. V. N. Rao  
 Shri. K. V. Mohan Rajan  
 Dr. M. K. Mukundan  
 Shri. K. N. Kartha  
 Shri. A. V. Shenoy  
 Shri. K. Ramakrishnan  
 Smt. K. Vijayabharathi  
 Kum. B. Meenakumari  
 Shri. K. K. Poulouse  
 Shri. P. S. Alias  
 Shri. R. G. Nair  
 Shri. P. Sadanandan

The following persons from other Institutions delivered guest lectures.

Shri. M. Swaminath, Director, CIFNET.

Dr. P. V. Ramachandran Nair, CMFRI.

Shri. S. Natarajan, CMFRI,

Shri. S. Kandasamy, NPOL

Dr. B. Madhusoodhana Kurup, Fisheries College, Cochin-6.

#### LIST OF PARTICIPANTS

1. Shri. G. Sai Prasad, A. P. Agricultural University, Hyderabad-36.
2. Shri. I. V. Gopalakrishna Shreshty, MPEDA Regional Office, Machilipatnam, (A. P.)
3. Shri. Vijayakumar Seghal, Indian Standards Institution, New Delhi.
4. Dr. G. Ragothaman, South Gujarat University, Surat.
5. Shri. N. Subramonia Pillai, CIFT Research Centre, Veraval.
6. Shri. M. Syed Abbas, CIFT Research Centre, Goa.
7. Shri. D. K. Kaushal, CIFRI, Kilaspur (H. P.)
8. Dr. R. Sudharshan, Dept. of Marine Biology, Karwar.
9. Dr. C. Hridayanathan, Dept. of Industrial Fisheries, Cochin.
10. Shri. C. R. Sivadasan, University of Cochin, Cochin.

11. Shri. A. K. Vijayan, University of Cochin, Cochin

12. Shri. A. N. Balchand, University of Cochin, Cochin.

13. Shri. P. S. Mrithunjayan, Fisheries College, Panangad.

14. Shri. R. D. Tandel, CIFE, Bombay.

15. Dr. Mihir Das, Ravenshaw College, Cuttack.

16. Dr. A. Abdul Rahman, AVVM Shri. Pushpam College, Poondi.

17. Shri. N. S. Abdul Hameed, Govt. Arts College, Salem.

18. Dr. Godwin Wesley, Scott Christian College, Nagercoil.

19. Shri. R. Kulasekharan, Govt. Arts College, Salem.

20. Shri. Kaleemur Rahman, Tamil Nadu Agricultural University, Tuticorin.

21. Shri. K. Padmakumar, CAS in Marine Biology, Porto Novo.

22. Shri. K. J. Shanawas Khan, AVVM Shri Pushpam College, Poondi.

23. Dr. Harimohan Saran, I. P. College, Bhubaneswar.



# 1982 Symposium Proceedings

## Harvest & Post Harvest Technology of Fish

A unique and comprehensive source of information on fisheries technology.....

Most useful reference book on fisheries technology for Research Institutes, Universities, fishery and ancillary industries and the like .....

..... Essentially scientific, the book is of immense practical importance to all connected with fisheries—students, teachers, scientists, technologists, planners of fishery policy, administrators .....

... Containing the proceedings of the Symposium 'Harvest & Post-Harvest Technology of Fish' held at Central Institute of Fisheries Technology during 24-27 November, 1982, the book is a collection of 162 papers carefully chosen to meet the need of all those interested in the correct understanding of technology of fishing and fish processing techniques.

Preceded by a keynote address each by specialists of international repute, the papers are presented under ten technical sessions:

- i. Resources
- ii. Fishing Crafts
- iii. Fishing Gear and Methods
- iv. Machinery, Equipment & Instrumentation
- v. Handling & Transportation of Fish.
- vi. Biochemistry and Bacteriology of Fish Handling and Storage
- vii. Fish Processing
- viii. Fishery Products & By-products
- ix. Fish Inspection and Quality Control
- x. Extension & Education in Fisheries.

Containing approximately 800 pages, the book is provided with full calico binding. Price per copy - Rs. 600.00 (inland including postage)/U S. \$ 150.00 (overseas) plus U. S. \$ 15.00 extra towards postage by Air Mail.

### IMPORTANT

For orders received with full payment before 31st March, 1985 the book will be available at the Pre-publication price as follows.

Inland, Rs. 500 (including postage)

Overseas U. S. \$ 125.00 plus U. S. \$ 15.00 for postage by Air Mail.

Contact:

SOCIETY OF FISHERIES  
TECHNOLOGISTS  
(INDIA)  
MATSYAPURI P. O.  
COCHIN-682029-INDIA



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## CIFT - STAFF RESEARCH COUNCIL

The SRC of the Institute met on 3-5-1984 at Cochin. Dr. C. C. Panduranga Rao, Director of CIFT, presided over the meeting.

Project profiles for the year 1984-85 were discussed. There were 37 on-going pro-

jects during 1983-84 out of which nine were completed. Nine new projects were introduced during 1984-85 bringing the total number of projects to 37.

Major thrust areas for the seventh plan period and pro-

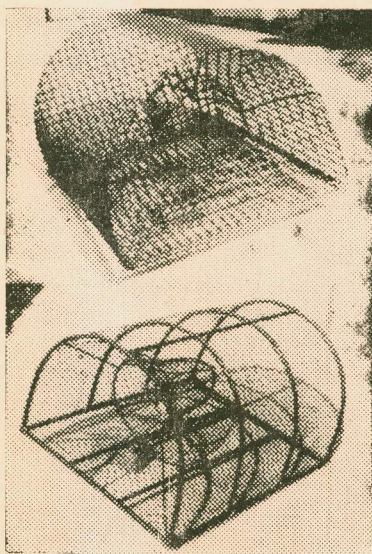
posals from each division/centre were discussed,

Apart from Scientists and Technical Officers from Headquarters, representatives from other regional research centres of the Institute at Kakinada, Burla, Veraval, Bombay, Goa and Calicut participated.

# LOBSTER FISHING WITH MODERN TRAPS

## - A VIABILITY REPORT

Spiny lobsters constitute an important item of marine products exported from India fetching sizeable foreign exchange. South West coast of India, especially Trivandrum district of Kerala and Kanyakumari district of TamilNadu, are traditionally important lobster fishing areas providing employment to hundreds of traditional fishermen. Lobster trap fishermen are one of the most neglected and backward sections among traditional fishermen. Potential lobster resource of this stretch is estimated to be around 500 tonnes per annum. But the present landing is only a small percentage of this. There are about 15 fishing villages in the stretch of coast line between Vizhinjam and Kanyakumari where, on an average, 30 fishermen families are exclusively dependent on trap fishing for



The CIFT standardised lobster trap



A good catch

lobsters as a means of livelihood.

Trap is the conventional fishing gear employed for exploiting lobsters. The traditional trap used for lobster fishing in this area is very crude and inefficient, made up of palmyra leaf stalk fibres or date palm leaf stalks. These are subjected to quick decay and last only for 2 to 4 weeks. They are very fragile and need heavy ballast to sink and cannot stand rough handling and sea conditions. Often trap as well as catch are lost in the sea. Due to these reasons, the present earnings from lobster trap fishing are meagre.

A modern lobster trap has been developed by Central Ins-

titute of Fisheries Technology, Cochin, overcoming the drawbacks associated with traditional traps. This was extensively tried and experimented, keeping a traditional trap as control from different fishing centres with great success. Convinced by these results, MPEDA, in collaboration with Departments of Fisheries Tamil Nadu and Kerala, fabricated 200 modern lobster traps under CIFT's technical supervision. Traps were distributed to genuine lobster fishermen on subsidy-cum-loan basis. Sixty such traps were distributed to 20 fishermen at the rate of 3 traps per head at Vizhinjam and Chovara in Trivandrum district and the rest at Enayam and Kadiapatnam in Kanyakumari district. These

traps were in operation from 1981 to '83. As a follow-up action, an impact study was carried out in these centres to

evaluate the acceptance of modern trap technology by fishermen. It was found to be well received. An abstract of the

catch data monitored on the performances of 60 traps that were in operation at Vizhinjam and Chovara is given below.

### Particulars of Lobster landings by modern lobster Traps at Vizhinjam and Chovara

|   | Total number of lobsters landed by 60 traps. | Approximate weight of the catch @ 125 gm per specimen. | Average catch by one fisherman from 3 traps. |
|---|--|--|--|
| Sep. '83  | 388 Nos.                                     | 48.50 Kg.  | 2.40Kg.                                      |
| Oct. '83  | 869 ,,                                       | 108.62 ,,  | 5.40 ,,                                      |
| Nov. '83  | 793 ,,                                       | 99.10 ,,   | 4.95 ,,                                      |
| Dec. '83  | 2558 ,,                                      | 319.75 ,,  | 15.98 ,,                                     |
| Jan. '84  | 2849 ,,                                      | 356.12 ,,  | 17.80 ,,                                     |
| Feb. '84  | 3712 ,,                                      | 464.00 ,,  | 23.20 ,,                                     |
| Mar. '84  | 2909 ,,                                      | 362.62 ,,  | 18.20 ,,                                     |
| April '84                                       | 951 ,,                                       | 118.87 ,,  | 5.90 ,,                                      |
| <b>Total</b>                                    | <b>15029 Nos.</b>                            | <b>1877.58 Kg.</b>                                     |  |
| Average catch per trap for a season of 8 months |  | 250 Nos.   | 31:30 Kg.                                    |

The above table clearly shows the profitability of operating modern lobster traps. The survey revealed that all the fishermen were convinced of the efficiency and advantages of the modern traps, over the traditional one. The present trend is to completely re-

place the traditional traps with the modern trap developed by CIFT. A four logged catamaran operated by 2 to 3 fishermen constitute one unit and on an average they operate 20 traps at a time. If half of the existing gear is to be replaced by the modern one, to

start with, a unit may require at least 10 traps. At the rate of Rs. 300/- per trap this calls for an investment of Rs. 3000/- per unit. Based on a detailed case study, the following cost benefit aspects are brought out:

#### INVESTMENT

1. Cost of 10 CIFT standard lobster traps @ Rs. 300/- each (If the average life of a trap is taken as three years, yearly investment on 10 traps works out to only Rs. 1000/-) } Rs. 3000/-

#### 2. OPERATIONAL EXPENDITURE

- a Cost of bait, repairs and maintenance for one season Rs. 1000/-
- b Expenditure towards repayment of 1/3 cost of the traps and interest on loan Rs. 1300/-

Total Rs. 2300/-

# Retortable Flexible Package for Heat Processed Prawns in Brine from Indigenous Synthetic Films

Exports of canned products from India reached a peak in the year 1973 being 2199 tonnes worth Rs. 5.24 crores. Thereafter, there was a drastic decline. The main reason for this has been the soaring prices of the imported tin sheets used for the production of cans. There was therefore,

an urgent need for developing a less costly retortable package for the heat processed prawns canned in brine, which has got the highest potential for export.

The Central Institute of Fisheries Technology has succeeded in packing prawn in

pouches of 250 gauge polypropylene film and heat processing, after experimenting with many other flexible packages available indigenously. After processing, the pouches are packed again in pouches of metallised polyester film. A modified method involving compressed air and steam has

### 3. RECEIPTS

|  |                 |
|--|-----------------|
| i) Projected average catch per trap per season (derived from the table)                      | 31.30 Kg.       |
| ii) Expected landings from total number of 10 traps per year                                 | 313.00 Kg.      |
| iii) Value realised by sale of 313.00 Kg. of lobsters at an average rate of Rs. 50/- per Kg. | Rs. 15650.00    |
| iv) Net earnings   | Rs. 15650.00    |
|  | 2300 00 —       |
|  | <u>13350 00</u> |

From the above statement, it is evident that a fishing unit operating 10 CIFT lobster traps is assured of increased lobster landings and enhanced earnings after meeting all the connected expenditures. The operators can have the confidence of repaying the loan and can become self supporting thereafter. To-day, because of close contacts-cum-discussions between Scientists, Extension workers and the traditional lobster fishermen, assisted by the subsidised in-

itial supply of CIFT traps through the Marine Products Export Development Authority, and the successful operation of the scheme, the situation has gradually brightened up.

Having crossed the difficult barrier of imparting the technical know-how and the successful transfer of the proven technology, it is now realised that a formidable problem is the innate poverty of the fishermen community.

They need adequate financial support especially towards the initial investments. Since the cost benefit aspects of the present scheme of popularising CIFT lobster traps has been well established with encouraging results, financing agencies should now come forward by extending liberal loans to the poor fishermen among whom this new idea has been well percolated. CIFT can always extend its technical guidance.



[K V. Mohan Rajan, B Meenakumari, M. K. Kandoran and R. Balasubramanyan]

# Some Latest I. C. A. R. Publications

## AGRICULTURAL ENTOMOLOGY AND PEST CONTROL

by S. Pradhan

vi+268 pp 16 cm x 24 cm Figs 32 Price Rs. 33.00 (Postage Rs. 4.00)

Deals with the principles of agricultural entomology and control of pests of agricultural importance. The pesticides of plant origin have also been described.

## GRASSES AND LEGUMES FOR FORAGE & SOIL CONSERVATION

by K. A. Shankarnarayan and Vinod Shankar

iv+156 pp 16 cm x 24 cm Figs 30 price Rs 20 50 (Postage Rs. 4 00)

Presents a connected picture of varied roles that grasses and legumes play in forage production and soil conservation under various ecological conditions.

## BANANA

by V. N. Madhava Rao

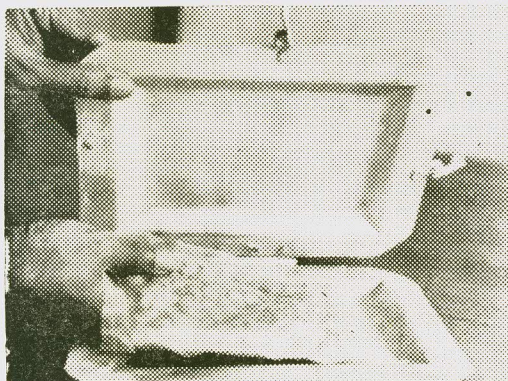
iv + 62 pp 12 cm x 24 cm. Figs 11 Price Rs. 5.25 (Postage Rs 3.50)

Provides information on morphology, nomenclature, clones, cultivation, diseases and pests, packing and preservation.

## ORGANIC MANURES

by A. C. Gaur, S. Neelakantan and K. S. Dargan

vi+160 pp 16 cm x 24 cm Figs



Blanched prawns in brine sealed in polypropylene pouch being placed in pouch carrier for retorting



Retorted polypropylene pouch taken out from the carrier and packed in metallised Polyester pouch

been devised for processing to avoid bursting of the pouches. A new retort has been designed for controlled entry of steam, compressed air and cold water during cooling. Pouch carriers have also been specially designed for the purpose. The approximate cost of this

combination package works out to 60 paise, compared to Rs 1.25 for a SR lacquered 301 x 206 (8 oz) tin can. Even though the product was bacteriologically sound for quite long periods, organoleptically the heat processed prawns showed a restricted shelf-life of 90

days. Further improvement in this line is expected to be achieved by vacuum sealing and attempts are being made to reduce further the packaging cost. Pilot plant scale production is also to be taken up soon.



[K. P. Antony, T. K. Sreenivasa Gopal, P. A. Perigreen, M. Arul James & T. K. Govindan]

# ALL INDIA EXHIBITION - COCHIN '84

The Corporation of Cochin conducted an All India Industrial, Educational and Cultural Exhibition - Cochin '84 from 15 February to 30 April 1984 at the Marine Drive Grounds, Ernakulam. The Exhibition was conducted with a view to highlight the achievements of the country in various spheres such as science, technology, agriculture etc.

A combined stall was set up by the four ICAR Institutes, viz Central Marine Fisheries Research Institute, Central Institute of Fisheries Technology, Cochin, Central Tuber Crops Research Institute,

Trivandrum and Central Plantation Crops Research Institute, Kasaragod.

The Exhibition was formally inaugurated on 5th March 1984.



A front view of the pavilion.

3 Price Rs. 16.25 (Postage Rs. 3.50)

Describes the potential of various organic manures, their preparation, processing and preservation, and recycling of organic materials as fertilizers, biogas etc.

## INDUCED BREEDING OF CARPS

by Hiralal Chaudhuri and S. B. Singh

iv+82 pp 16 cm x 24 cm Figs

38 Price Rs. 16.00 (Postage Rs. 3.50)

Gives information on the technique of hypophysation, with special reference to major Indian and Chinese carps, its advantages and its role in the development of aquaculture.

## MICROBIAL DIGESTION IN RUMINANTS

by S. P. Arora

iii+78 pp 16 cm x 24 cm Figs

14 Price Rs. 11.50 (Postage Rs. 3.50)

Gives concise account of the present knowledge of the role of microbes in rumen digestion.

Copies available from:

The Business Manager  
Indian Council of  
Agricultural Research  
Krishi Bhavan,  
New Delhi - 110 001.

# NEW LIGHT ON THE MICROFLORA OF BRACKISH WATER FISHES

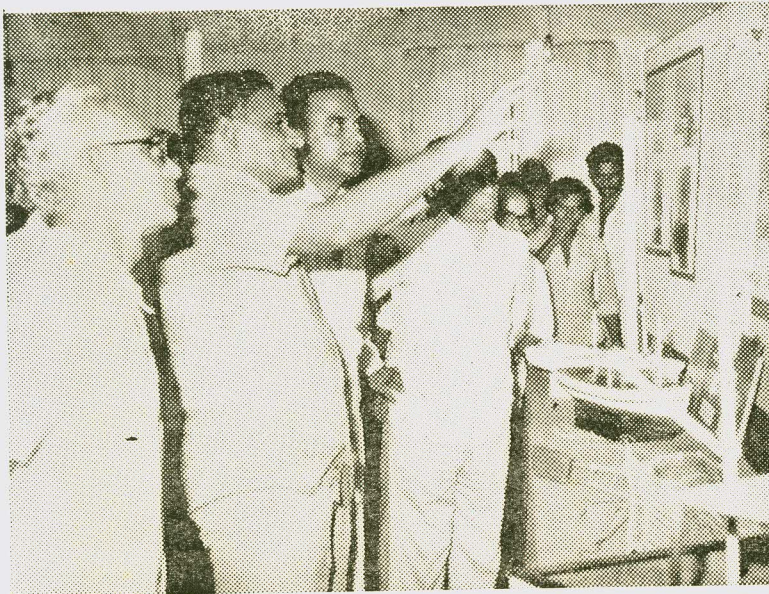
Under the hot and humid conditions of the tropics, deterioration of the quality of fish takes place at a rapid pace. The various stages of deterioration are the initial development of slight off-odour followed by fishy and ammoniacal odour and lastly by the putrid odour. Though certain biochemical changes are also initiated in the fish tissue post mortem, such changes are not 'felt' outside as much as the off or putrid odours caused by microbial action. Hence, one can appreciate the key role of bacteria in the initial stages of spoilage of dead fishes.

Earlier work in CIFT had

shown the occurrence of a very high proportion of gram-negative bacteria in fresh fish caught from the sea. They comprise such genera as *Vibrio*, *Pseudomonas*, *Moraxella*, *Acinetobacter*, *Cytophaga*, *Flavobacterium* etc. A total plate count (T. P. C.) showed that counts determined at room temp. incubation were invariably higher than those at 37°C for the same sample of fish. This points to the occurrence of a greater proportion of psychrotrophs (i. e. bacteria which prefer a lower temp. (0-30°C) for proper growth) and less of mesophiles (20-37°C) in the microflora of fish caught from marine environs. Further, our

Scientists have seldom noticed the presence of pathogens like *Salmonella*, *Staphylococci*, *Coliforms* etc. in the ocean fresh fish unless introduced subsequently during handling of the fishes under unhygienic conditions.

The above being the general picture of the microflora of ocean fresh fish, let us have a look at fishes of brackish water origin. A few such specimens caught in the backwaters at Poothotta, Vaikom and Narakkal were examined. In all these cases, the TPC determined at 37°C were found to be



Dr. C. C. Pauduranga Rao, Director, explains some of the achievements.

## P. A. PERIGREEN



Shri Payyappilly Alexander Perigreen is S-2 working in the Processing and Packaging Division of the Central Institute of Fisheries Technology, Cochin.

Sh. Perigreen was born on 30th November 1937 at Vaduthala, Cochin. After passing M.Sc (Applied Chemistry) in first class in 1963 from Kerala

University, he worked for a short period as a lecturer at St Albert's College, Ernakulam. He joined the CIFT in 1963 as Research Assistant and in 1966 was promoted as Assistant Research Officer. In 1975 he was inducted into the ARS as Scientist S-1 and in 1979 Sh. Perigreen was promoted as Scientist S-2.

Sh. Perigreen has made substantial contribution in the field of fish processing technology. He has done pioneering work in packaging and transportation of fish and made elaborate studies on the ice storage and freezing characteristics of many of the commercially important fishes. The method of preservation of fish in Refrigerated Sea Water was standardised by him. He also worked out, for the first time, the use of solid carbon dioxide

in preservation of fish. The other fields in which Sh. Perigreen has made significant contribution are filleting and freezing of fish, production of minced meat and products from minced meat and speciality products from fish.

Sh. Perigreen is a guest lecturer for the M. Sc. Industrial Fisheries of the Cochin University. He is a founder member of the Society of Fisheries Technologists (India) and Asst. Editor of the Society's Journal, Fishery Technology. He is also serving as a member of the Editorial Committee for bringing out the proceedings of the Symposium on Harvest and Post-Harvest Technology of Fish held at Cochin in 1982.

Sh. Perigreen has got more than 25 scientific / technical papers to his credit. □

higher than those taken at room temperature ( $28 \pm 2^\circ\text{C}$ ). This indicates a preponderance of mesophilic bacteria in contrast to the higher proportion of psychrotrophs occurring in the marine fishes. Further, we have observed the regular presence of coliforms and streptococci which being mesophilic also contribute to a higher TPC at  $37^\circ\text{C}$ . In short, the

major characteristics distinguishing the microflora of brackish water fishes from those of marine fishes seem to be (1) a preponderance of mesophiles and (2) the occurrence of coliforms (and hence possible presence of pathogens.)

These observations call for two points to be considered. (i) In prescribing the quality

standards for brackish water fishes, a knowledge of the ratio of TPC at  $37^\circ\text{C}$  to that at room temperature will provide an idea of the preponderance of mesophiles in the fish specimens. (ii) The frequent occurrence of coliforms in such fishes calls for more stringent sanitary practices while handling and processing of such fishes. □

# CIFT Appointments, Postings etc.

## APPOINTMENTS / REVERSION

Shri S. Sadanandan rejoined the Institute as Superintendent on reversion from ICAR Research Complex for NEH Region, Shillong.

Smt. K. A. Devaky, Supdt., was reverted as Assistant.

Shri. S. Radhakrishnan Nair, joined as Jr. Clerk.

Shri. V. Annamalai joined as Scientist S-1 (Agricultural

Economics) on transfer from AICRP, Hyderabad.

Shri M. K. Sreedharan joined as Jr. Clerk.

Kum. G. N. Sarada joined as Jr. Clerk. (Hindi Typist).

## TRANSFER

Shri. K. V. Rajan, T-2 (Jr. Lab. Asst.) was transferred to CTCRI, Trivandrum.

## RESIGNATION/RELIEF

The following staff resign-

ed from service:-

Shri. A. P. Zacharia, Photo Assistant.

Shri. A. P. Jayaprakash, T-7 (Skipper).

## RETIREMENT

The following staff retired from service:-

Shri. A. Chakrapani, Caretaker

Shri. M. K. Prabhakaran, S. S. Grade IV.



## CIFT is at your Service

*It transfers Fishery Technology by way of:*

- ◆ Demonstrations of Fishing and Fish Processing techniques evolved by it
- ◆ Answering Technical queries
- ◆ Supplying project reports and design drawings
- ◆ Conducting Training courses in fishing and fish processing

*Please contact:*

Director,  
C. I. F. T.,  
Matsyapuri P. O.,  
Cochin - 682 029

