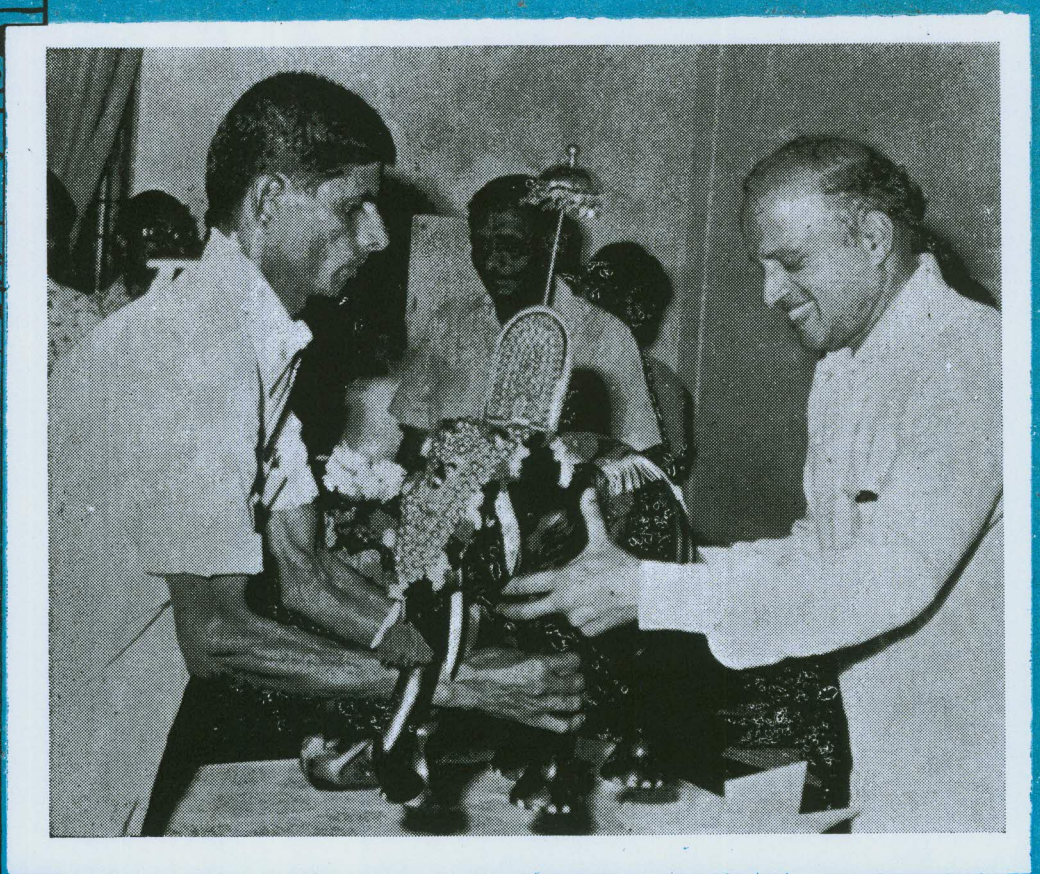
Fish technology newsletter

Vol. 1 No. 9 March 1979



Dr. M. S. Swaminathan, Director General, ICAR, being presented with a momento by the CIFT Recreation Club on the eve of his laying down office to assume charge his new assignment as Principal Secretary, Ministry of Agriculture and Irrigation.

CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY
MATSYAPURI P. O. COCHIN – 682 029

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Foreword

Abbreviation: Fishtech News

Fish Technology Newsletter issued every month is 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.

Fishtechnology 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 sincerely hope that the current events and informations contained in the columns "GLEANINGS FROM OTHER JOURNALS" and "LET'S TALK IT OVER" will be of interest to the Indian fishing and fish processing industries.

We also welcome suggestions from our readers for improvements 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.

CIFTONE - The Ideal Health Drink Using Fish Protein

The Central Institute of Fisheries Technology which has blazed several new trails in the horizon of fishery technological research, has now perfected a new formula for the preparation of an ideal nutritious beverage based on fish protein hydrolysates. 'CIFTONE' is the name given to this new formulation. Several such products are already on the market in granular or powder form, flavoured with coca and otherwise, based on vegetable protein hydrolysate or milk proteins and enriched with carbohydrates like malt and sugar, vegetable fat, vitamins and minerals, in some cases. The products are generally dissolved in hot milk with additional sugar to taste and served. They are very popular and are very useful in combating protein mal-nutrition in children and the under-nourished in general and in recuperation of the invalids in particular.

Fishes like mackerel, jew fish, sole, silver bellies, prawn, ribbon fish, *Saurida* sp. etc have been successfully employed by the institute for preparing this product. The method worked out is as follows:

1. Wash the fresh fish thoroughly in potable water.
2. Mince the whole fish in a neat mincer.
3. Add approximately an equal quantity of water to the minced flesh and boil for half an hour.
4. Cool to 45-50° C and adjust the pH of the slurry to 5-7 using hydrochloric acid.
5. Take papain, the enzyme which brings about the hydrolysis or breaking down of the proteins, at the rate of 200 g per 100 kg of the fish slurry and suspend it in a small quantity of water.
6. Add the enzyme suspension to the fish slurry, mix thoroughly and maintain at 45 - 50°C for 4 hours.
7. Boil the reaction mixture for a few minutes to inactivate any excess enzyme.
8. Cool and filter. Neutralise the filtrate with dilute sodium hydroxide first and with baking soda towards the last stage.
9. To the neutralised hydrolysate, add the following ingredients for every 10 kg of fresh fish utilised for hydrolysis. (Yield of hydrolysate: 10% approx.)

Sugar	—	1 kg
Malt extract	—	250 g
Vegetable fat	—	125 g
Cocoa powder	—	125 g

(Total weight of the product obtained in a case will be 2.5

10. Mix thoroughly evaporate in a jacketed kettle under positive steam pressure a pasty consistenc
11. Dry the paste in a v dryer. Alternatively spray dryer is av the step of evap can be avoided a mixture from stage can be straightaway dried).
12. Powder the dried and pack in a bottles or in lar polythene bags. product is hygrosco absorbs moisture exposed to air.

The final produ of uniform appearan quality irrespective type of fish used prepared by dis this product in h at the rate of on spoon per cup added sugar to ta very wholesome appealing to consumers.

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PRESERVATION OF FISH IN REFRIGERATED SEA WATER

The oldest, simplest, most versatile and universally employed preservative for fresh fish is crushed ice. The scientific principle underlying this is that the heat required for melting of ice (latent heat) is absorbed from the fish which it surrounds and hence their temperature is slowly lowered until it equilibrates with that of the coolant, viz; zero degree centigrade. Part of the bacterial flora that is originally present on the fish gets destroyed by the low temperature due to their sensitivity to cold, while the rest of the bacteria as well as the degradative enzymes are inactivated, with the surface flora even getting washed away by the melting ice. Deteriorative biochemical changes like oxidation are also retarded under these conditions.

PRINCIPLE

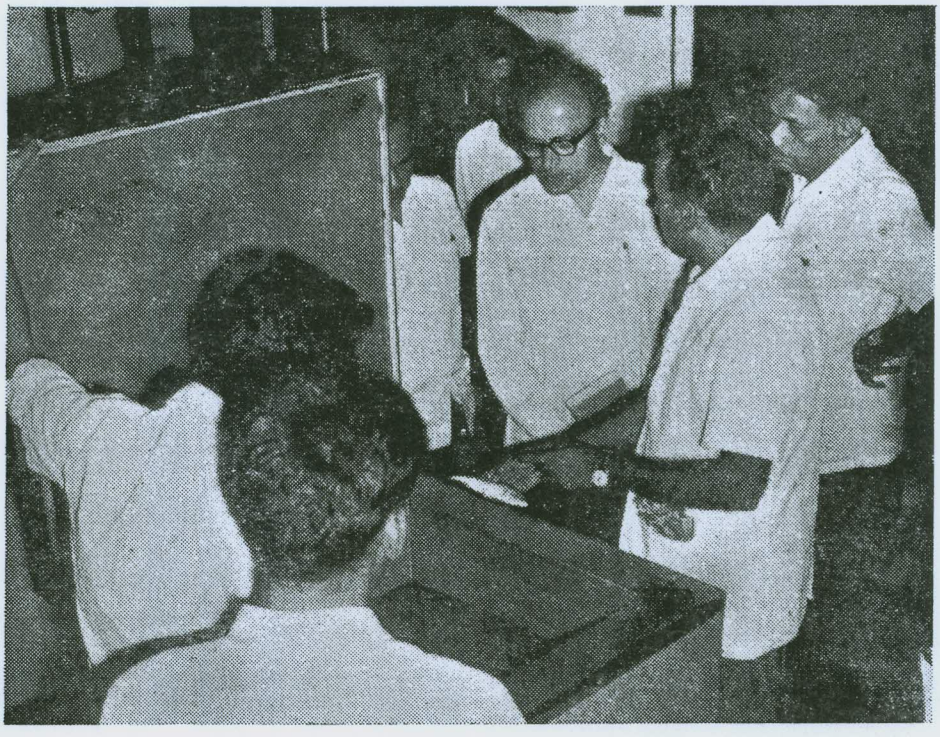
Substitution of crushed ice with refrigerated sea water for fresh fish preservation is an innovation of very recent origin. According to a French patent of 1920, sea water cooled with ice blocks was used for preservation of fish. Since in this method the sea water gets diluted with the ice melt water, mechanical refrigeration was subsequently employed for cooling. Fish to be preserved are dumped into natural or artificial sea water in an insulated tank. A second smaller adjacent insulated tank chills the sea water by means of a refrigeration system employing Freon 12 as refrigerant. One pump draws the sea water from above the fish in the storage tank into the chilling tank, while another one injects the chilled sea water from the chilling tank from the bottom of the storage tank. Thus a continuous circulation of chilled sea water through the fish is maintained. The temperature of the system is thermostatically controlled at 0 to -1°C.

ADVANTAGES

The intimate contact of the cooling medium with the fish ensures efficient and rapid cooling. Fish do not get pressed or bruised, whatever be the depths to which they are filled in the tank, because of their buoyancy in the cooling medium. Better and uniform temperature can be maintained with the mechanical contrivance employed. With RSW system installed in a fishing vessel, she can continue operation in the open sea for indefinite periods without being limited by the quantity of ice which she has to carry otherwise for preservation of the catch, besides saving considerable labour and ice storage space on board.

EXPERIMENTS AT CIFT

The Central Institute of Fisheries Technology has



Dr. M. S. Swaminathan, Director General, ICAR, keenly observes mackerel preserved in the RSW unit installed at the CIFT Laboratory

installed an RSW unit in its laboratory and has been carrying out experimental preservation of fish for quite some time.

Oil sardine, mackerel and seer are some of the more important varieties of fish studied in this connection. The first one did not show any appreciable difference in quality during the first two days of storage between ice and RSW. However, beyond this period RSW- stored sardines were somewhat inferior to ice-stored ones, because the salt in the sea water accelerates development of rancidity in the highly fatty fish. The flesh surrounding the vertebral column also showed a brownish discolouration after two days of storage in RSW. Bursting of the bellies was however lower than when held in ice. The maximum storage life of this fish in both RSW and ice may be reckoned as 2 to 4 days.

Mackerel, having a lower fat content than sardines, kept slightly better in RSW during the initial stages (2 days) than in ice. Beyond this period, the fish held in both the preservatives behaved more or less in a comparable manner. In this case also, a slight discolouration of the flesh surrounding the backbone was observed after two storage in RSW. Sto of this fish in both tl was 4 to 6 days.

As far as larger like seer are concerne was definitely a preservative than crus The former could pre in acceptable conditio to 14 days, compared 6 to 9 days by the Hence, it may safe concluded that whil RSW and ice are comparably effectiv preserving small and size fishes, the former c scores much higher case of larger size fis

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GILL NETS FOR FISHING

Gill netting is a very popular method of fishing practised all over the world including our country. The fishing operation is very simple, can be easily taken up by ordinary fishermen and is ideally suited for entrepreneurs with meagre and medium means, because unlike trawling and purse-seining, investments on craft and gear are not capital intensive. The return on investments also is favourable on commercial basis.

Taking these aspects into consideration, CIFT has developed designs of gill nets suitable for exploitat fisheries which are vu to this method of The design details with information on the of supply of the r required for their fal are furnished in this r the benefit of pro entrepreneurs in the fi

TECHNICAL DETAILS OF THE MAIN WEBBING

(Material recommended: Nylon)

Fishery to be exploited	Specification of twine	Mesh size: mm	Approximate number of meshes/kg	Dimensions of one unit in meshes	Quantity of material for 1 unit: kg
Sardines	210/1/2	35	2,00,000	1000x150	0.75
Mackerel	210/1/2	55	1,25,000	1000x250	2.00
Prawns	210/1/2	55	1,25,000	1850x130	1.75
Spotted seer	210/9/3	105	5,240	500x110	10.50
Seer	210/9/3	150	3,590	334x 78	7.25
Hilsa	210/2/3	100	25,400	720x 72	2.00
Pomfret	210/3/3	140	13,000	650x 40	2.05
-do-	210/2/3	125	15,300	5 5x55	1.50
Lobster	210/6/3	150	5,000	250x15	0.72
Inland fishes	210/2/3	150	15,000	670x45	2.00

ACCESSORIES:

(1) Head and foot ropes: Polyethylene monofilament twisted/ braided rope, 4 mm diameter.

(2) Floats: Airoplast floats, cylindrical shape, size 50x20 and 60x30

(3) Sinkers; Lead spindle shape, bore 16 mm, weight 50 g OR 3 mm M S. rod ring type, weight 200 g

Note. 1) Number of floats and sinkers to be adjusted to suit local fishing conditions.

2) Number of units of nets to be operated from each boat depends on the size of the boat.

Source of availability:

MAIN WEBBING: As twines:

1 M/s Garware Nylons, Express Towers; 5th Floor (East Wing), Nariman Point, Bombay-400021

2. M/s. J. K. Synthetics, Kamla Tower, Kanpur.

3. M/s. Nirlon Synthetic Fibres & Chemicals, 115/ 1 B, Maubray's Road, Madras - 600018.

4. M/s National Rayon Corporation, Post Mohone, Thana Dist. Pin: 421002, Maharashtra.

5. M/s Sriram, Fibres, 17/3B Nungambakkam High Road, Madras - 600034

AS WEBBINGS:

1. Kerala Fisheries Corporation, Ernakulam, Cochin-682011.

2. Fish Net Making Plant, Thungabhadra Board, *Via* Hospet, Karnataka.

3. Tamilnadu Agro Industries Corporation Ltd., Agro House, Industrial Estate, Guindy, Madras- 600002.

4. Gujarat Fishermen Central Co-operative Association, Ahmedabad - 380008

ACCESSORIES: Ropes

1. M/s Garware Wall Rope, Chowapthy Chambers, Bombay - 400007.
2. M/s Ganges Ropes., Ltd., Sibpur, Howrah-700002,
3. M/s King Fisher Twines & Ropes, 2 Ajanta Apartments Shaheed Bhagat Singh Road, Colaba Bus Station, Bombay- 400005.
4. M/s Venus Industries, Gala No. 102, 3rd Floor, Municipal Industrial Estate, Dr, E. Moses Road, Bombay- 400018.
5. M/s Dhanvyavastha (P) Ltd, Todi Estate, Lower Parel, Bombay- 400013.
6. M/s. Avon Plastic Corporation, Modinagar, HAPUR, U. P.
7. M/s Sonaco Thread Mills; 55, Bazaar Road Building, Khabhag, Belgaum, Karnataka.

FLOATS

M/s Airoplat (P) Ltd., Sheel Chambers, 5th Floor Cawasji Patel Street, Fort Bombay- 400001

SINKERS

Available with dealers in fishing requisites and hardware merchants.

PROPERTIES

Size		Breaking Strength : Kg.	Runnage [m/kg
Nylon twine	210/1/2	2.5	17,200
	210/2/3	7.5	6,050
	210/3/3	11.5	4,250
	210/6/3	22.5	1,900
	210/9/3	35 0	1,250
	210/12/3	45.0	1,000
Polyehtylene rope	4 mm	200·0	110.

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CATHODIC PROTECTION OF FISHING BOA

Corrosion of metallic parts such as steel hulls, sheathing on wooden boats, propellor, propellor shaft etc in fishing vessels is a serious problem which results in expensive repairs in the absence of proper preventive measures, Corrosion can be prevented by using protective anticorrosive paint and by installing suitable anodes especially below water line. However, painting alone cannot prevent corrosion owing to discontuities in the layer resulting in pitting corrosion here and there. It is thus essential to supplement painting by fixing anodes of either zinc or ternary aluminium alloy at selected locations on the hull.

Highly pure zinc or ternary aluminium alloy has to be used for anodes to obtain the desired degree of corrosion control. These anodes are less noble compared to aluminium, copper, bronze etc (cathodes) and get corroded in preference to the cathode which is thereby protected. The following precautions have to be strictly observed while fixing anodes to the hull: (1) Fix the anodes to the sheet directly with galvanised iron or stainless steel screws Remove the paint from the area where anodes are to be fixed so as to ensure direct electrical contact. (2) Use more anodes at the stern area and on the rudder. (3) Fix the anodes 40 cm below the water line. (4) Do not paint the anode. (5) Cleam the anodes periodically and replace the worn out ones. (6) Take care to prevent over-protection as this has the opposite effect.

An anode of 10(area and weighing 5(the case of alumini 1.3 kg in the case can protect 10 sq m the hull. Ternary al alloy anodes are with: (1) M/s Hind Overseas Cathodic P Services, Amarikat Kavalam, Alleppey, Ke M/s Sputnik Metal Bethel, Karaikudi- 2 Nadu. (3) M/s Enterprises, Industria Karaikudi - 5, Tamil N

Pure zinc is manufactured in India following factories: Cominco Binani Zir Binanipuram, Edayar, Kerala State. (2) M/ stan Zine Ltd., Zinc Visakhapatnam, Andhra

LAB - TO - LAND PROGRAMME OF CIFT - 1

One of the highlights of the Golden Jubilee Celebrations of the Indian Council of Agricultural Research being observed this year is a massive LAB-TO-LAND Programme, to which the Central Institute of Fisheries Technology is contributing its mite. From this issue of Fishtechnology Newsletter onwards, we are publishing brief accounts of the activities of CIFT aimed at the above objective.

Training in Fish Plant Sanitation

Export of seafoods is playing a vital role in the economy of India, its contribution to the foreign exchange earnings of the country marking an all time high of Rs. 212 crores in 1978 Needless to say, the lion's share of this earning goes to the lower strata of our population viz: the innumerable fishermen who are the primary producers of the raw material and the massive labour force directly concerned with this industry. Maintenance of high standard of hygiene and quality in the industry is highly essential since we are catering to the most sophisticated and quality conscious markets of the world.

With this point in view, the CIFT is organising a number of training courses at different centres in the country The first such course in this series on Fish Plant Sanitation, Quality Control and Inplant Inspection was conducted at Mangalore from 5th to 9th March 1979 in collaboration with the Marine products Export Development Authority, Cochin. The course which gave a detailed coverage to the topics mentioned was organised at the premises of The Fish Marketing Federation, Mangalore. Processing Technologists and Supervisors representing all the seafood exporters of the region who are directly concerned with maintenance of quality in the export commodities participated actively in the training programme.

Increased Fish production from Hirakud Reservoir

Systematic survey of fish landings from Hirakud reservoir applying the method of stratified random sampling revealed that the total landings for the year 1978 was 759 metric tonnes or 15.82 kg/ hectare. This method is applied for the first time in India to estimate fish landings from reservoirs. The present information annuls the earlier concept that the fish production from Hirakud reservoir is too low [0.21 kg/ ha]. This rise in fish production, as observed is a challenge to fishery technologists concerned with both harvest and post harvest investigations. Burla Research Centre of the Central Institute of Fisheries Technology is conducting investigations to evolve suitable techniques for enhancing fish production further.

ISI Standards on Fish, Fishery products and Allied Matters

A list of standard specifications so far brought out by the Indian Standards In regarding fish, fishery products and related materials is given below.

S.No.	Name of specification	Number and of publica
	A. FRESH FISH.	
1.	Fresh Silver and Brown pomfret.	IS 4780 - 196
2.	Fresh threadfin.	IS 4781 - 196
3.	Mackerel – fresh	IS 6032 - 197
4.	Seer fish (*Scomberomorus spp.*) - fresh.	IS 6123 - 197
	B. FROZEN FISH SHELL FISH	
5.	Frozen prawns (shrimp) first revision.	IS 2237 - 197
6.	Frozen froglegs (first revision).	IS 2885 - 197
7.	Frozen lobster tails (first revision)-	IS 3892 - 197
8.	Frozen threadfin.	IS 4769 - 196
9.	Frozen silver pomfrets and brown pomfrets.	IS 4793 - 196
10.	Mackerel - frozen.	IS 6033 - 197
11.	Seer fish (*Scomberomorus spp.*) - frozen.	IS 6122 - 197
12.	Frozen cuttlefish and squid.	IS 8076 - 197
	C CANNED FISH AND SHELL FISH	
13.	Pomfret canned in oil (first revision).	IS 2168 - 197
14.	Prawns (shrimp) canned in brine — first revision.	IS 2236 - 196
15.	Mackerel (*Rastrelliger spp.*) canned in oil — first revision.	IS 2420 - 197
16.	Mackerel (*Rastrelliger spp.*) canned in brine — first revision.	IS 3849 - 197
17.	Sardines (*Sardinella* spp) canned in oil — first revision.	IS 2421 - 197
18.	Sardines (*Sardinella* spp.) canned in brine and in their juice.	IS 6677 - 197
19.	*Lactarius* spp. canned in oil.	IS 6121 - 197
20.	Tuna canned in oil.	IS 4304 - 197
21.	Crab meat canned in brine,	IS 7143 - 197
22.	Crab meat - solid pack.	IS 7582 - 197

S. No.	Name of Specification	Number and year of publication
	D. DRIED FISH AND SHELL FISH	
23.	Dried prawns – first revision.	IS 2345 - 1972
24.	Dried white baits (*Anchoviella* spp).	IS 2883 - 1976
25.	Dried and laminated Bombay buck.	IS 2884 - 1964
26.	Dry salted mackerel.	IS 4302 - 1967
27.	Dry salted seer fish.	IS 5198 - 1969
28.	Dry salted shark.	IS 5199 - 1969
29.	Dry salted surai [tuna].	IS 5736 - 1970
30.	Dry salted threadfin [Dara] and dry salted jew fish [Ghol]	IS 3850 - 1973
31.	Dry salted cat fish.	IS 3851 - 1966
32	Dry salted leather jacket [*Chorinemus* spp.].	Is 3852 - 1966
33	Dry salted horse mackerel [*Caranx* spp].	IS 3853 - 1966
34.	Dried shark fin.	IS 5471 - 1969
35.	Fish maws.	IS 5472 - 1969
	E. MISCELLANEOUS	
36.	Code of hygienic conditions for fish industry; Part I Pre processing stage – first revision.	IS 4303 - 1975 (Part I)
37.	-do- :Part II. Canning stage - first revision.	IS 4303 - 1975 (Part II)
38.	Recommendations for maintenance of cleanliness in fish industry.	IS 5735 - 1970
39.	Fish meal as live stock feed.	IS 4307 - 1973
40.	Shark liver oil for veterinary use.	IS 3336 – 1965
41.	Sardine oil.	IS 5734 - 1970
42.	Glossary of important fish species of India.	IS 7313 – 1974
43.	Basic requirements for fresh fish stalls.	IS 7581 - 1975
44.	Basic requirements for a fish market	IS 8082 - 1976
45.	Procedure for checking temperature of quick frozen foods.	IS 8077 - 1976
46.	Master cartons for export of frozen seafoods and frog legs.	IS 6715 - 1972
47.	Common salt for fish curing - revised.	IS 594 - 1962
48	Fish oil for leather industry.	IS 4056 - 1966
49.	Quality tolerances for water for food industry.	IS 4251 - 1967
50.	Quality tolerances for water for ice manufacture.	IS 3957 - 1966

GLEANINGS FROM OTHER JOURNALS

Need to Develop Inland Fisheries Stresse

Chief Minister P. K. Vasudevan Nair stressed the need to develop inland fisheries in the State like in west Bengal.

Releasing a souvenir brought out to mark the conclusion of the academic programme of the first batch of the post-graduate students in industrial fisheries of the Cochin University at Cochin on Feb. 11, Mr Nair, said the scope for development of the inland fisheries in Kerala too was bright.

The Chief Minister lamented that much of the centrally sponsored schemes which had to be implemented by the State Government turned out to be failures during the fourth and fifth plans. This was because they were drawn up without giving due considerations to local peculiarities and differences.

— INDIAN EXPRESS

Records Exports of Sea Food

Seafood exports from India have touched an all - time high of over 78,0 0 tonnes netting foregin exchange to the tune of Rs 210 crores, thanks mainly to the efforts of small-scale industrialists.

"The nation must express its deep sense of gratitude to these industrialists for developing the marine products industry within a short span of two decades. facing tremendous hazards of uncertain

prices and shortage materials", Mr. Arif Beg Minister of State for Cor said at Bombay on Febr

In his presidential at the third Indian Trade Fair there, Mr. B the Government, enc by this success, had to implement a pro that would help in inc the quality of marine p at every stage from to loading for sh satisfying the fastidious buyers.

Mr. Beg Could present at the functi his speech was read his absence by the C of the Marine Products D ment Authority (C Mr. S. Gopalan.

— THE

(Continued on Page 11)

Note: Copies of these standards can be had from The Indian Standards Institution, Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110001, its Regional Offices: (1) Third Floor, Novelty Chambers, Grant Road, Bombay - 400007, (2) 5, Chowringhee Approach, P. O. Princep Street, Calcutta- 700072, (3) C. I. T. Campus, Adayar Madras- 600020. and Branch Offices:(1) Pushpak, 3rd Floor, Nurmohamed Shaik Marg, Khanpur, Ahmedabad- 380001' (2) 'F' Block, Unity Building, Narasimharaju Square, Bangalore - 560002, (3) R-26, Guru Teg Bahadur Complex, Bhopal- 462003, (4) 22E, Kalpana Areat, Bhubaneshwar - 751014, (5) Ahimsa Building (First Floor), SCO 82-83, Sector 17C, Chandigarh- 160071, (6) 5 8-56/57, L. N Marg [Nampally Road,] Hyderabad- [7] D - 277, Todarm Bani Park, Jaipur- [8] 117/418B, Sa Nagar, Kanpur-208 B. C. I, Building [3r Gandhi Maidan East 800004 and [10] Building [2nd Floo way Station Road, drum- 695001.

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Meet Our Scientists - 3

M. R. NAIR

MR. MADHAVAN PILLAI RAJENDRANATHAN NAIR is Scientist S-3 discharging the duties of Joint Director, Central Institute of Fisheries Technology, Cochin, besides heading its Biochemistry & Nutrition Division, since April 1979.

Born at Trivandrum, Kerala, on 11th June 1931, Mr. Nair had a very brilliant academic career, passing out his Intermediate (1948), B. Sc. (Chemistry) (1950) and M. Sc. (Chemistry) (1952) of the Kerala University (the then University of Travancore), all with high first classes A rank-holder and Gold Medallist in his degree examinations, he had a brief spell of teaching profession at S. N. College, Quilon and Maharaja's College Ernakulam, before joining the Central Marine Fisheries Research Institute, Mandapam, as Research Assistant in December 1954. Promoted as assistsnt Research Officer in June 1958, Mr. Nair formed part of the nucleus of a research cell on fish processing technology at the Institute, which was transplanted into the newly organised Central Institute of Fisheries Technology, Cochin, in December 1958, the donee readily and gracefully accepting the donated cell and rapidly noursishing it into a flourishing processing Wing / Division of its own.

Working on various aspects of handling, preservation and processing of fish, Mr. Nair was promoted as Research Officer/Junior Fishery Scientist in November 1962. He was deputed for training in Fish

Team to Promote Seafood Export

A four-member delegation under the leadership of chairman Mr. S. Gopalan of Marine Products Export Development, Authority will visit the United States for promotion of exporters of marine products.

The other members are Messrs. C. Cherian, president, Seafood Exporters, Association of India, Mr. Vayalar Ravi, M. P. , and Sakti Kumar Sarkar, M. P.

The delegation will have discussions with representatives of seafood trade and officials in the United States

— INDIAN EXPRESS

Protein from the Sea

One does not have many hopes for the fishing of large fish in the future because the catches are growing smaller. For this reason the Federal Ministry for Resea ch and Technology in Bonn is entertaining hopes from the small shrimp-like creatures called krill which at the present moment serve primarily as a source of food for the antarctic whales, but which could one day supply mankind with a profusion of proteins and vitamins. About 100 million tons of krill can be found in the Antarctic Polar waters. This roughly corresponds to twice the normal annual catches of fish in the whole world. Scientists are now trying hard to make a tasty source of food out of these small shrimps

— SCALA

LET'S TALK IT OVER

M/s. Tamil Nadu Fisheries Development Corporation Ltd., Madras.

We have installed engines developing upto 93 HP in 43½, boats constructed by us. which give speeds around 8 knots. Kindly inform us whether the speed could be increasd if engines developing higher HP of the order of 120 are fixed in the same design of boats. Also please indicate alteration, if any, in your design of 43½ boat required to be made to suit such higher powered engines.

CIFT: We feel that a speed of 8 knots attained with a 93 HP engine is a very good performance for a fishing vessel. Increasing the HP of the alone cannot i the speed unles concomitant mo tions such as pi dimensions, draf vessel etc are which may be expensive. Hence not recommenc dimensional cl An engine of hig say 165, can be i in a bigger vess as a 50 footer.

Processing under Colombo Plan Programme in 1971 at Torry Research Station, Aberdeen, U.K., where he acquainted himself with the latest techniques in Protein and Enzyme Chemistry. He also worked here on cod muscle proteins, with particular reference to physical and chemical properties of myosin and determination af molecular weights of subunits of myosin and 'modified, myosin. He could enlarge his knowledge by visiting other Research Institutions in U. K. like Meat Research Institute, Bristol, Fish Biochemical Research Institute [National Enviornmental Resarch Council] and Unilever Laboratories both at Aberdeen and Rowett Research Institute, Bucksburn.

On return to India, Mr. Nair was promoted as Fishery Scientrst (Processing) and given charge of the Processing Divison of the Institute. During this assignment, he carried out elaborate research work on the enzyme, protein and lipid chemistry of many Indian food fishes and shell fishes. He took charge as Project Coordinator (Scientist S-3) of the All India Coordinated Research Project on transportation of Fresh fish and Utilization of Trash Fish in October 1975, in which capacity he coordinated the work on the project going on at the headquartets and Veraval, Bombay and Kakinada Research Centres of the Institute, besides that at other centres viz; Jadavpur University, Calcutta, Fisheries College (University of Agricultural Sciences), Mangalore, Department of Fisheries, Tamil Nadu at Madras, Konkan Krishi Vidyapeeth, at Ratnagiri, Department of Fisheries, Gujarat at Port Okha and Department of Fisheries, Orissa at Kujang. Annual workshops were organised by him to review the progress of work and chalk out programmes for the ensueing year. He held this assignment till March 31, 1979, when the project was terminated, having achieved the objectives for w was initiated in the d the seventies.

A Founder Mem the Society of Fisherie nologists [India], M has also served as T and Member of the E Committee of the So several years. Besides [1] Alternate Member, 27, Fish and Fish F Sectional Committee a Sub-Committees, [2] AFDC-36:9, Metallic C nants Sub-committee, of the Indian standard tution, [3] Member Meat & their Produc committee of the Dir General of Health [4] Member, Society of cal Chemists [India], [5] Indian Society for Techniques in Agricult Biology, New Delhi Member, Forum of Professionals He scientific publications credit.

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WHAT THEY HAVE TO SAY ABOUT CIFT

Really good research work is being done in the Institute. The technology should go out to develop the economic condition of the country. The poor fishermen would be benefitted if the technology reaches them. I wish the Institute may play a dominant role in the developing economy of our motherland.

Mr. Narendra Singh,
Member of Parliment.

I must record my greatful thanks to the scientists of this Institute for the patient manner in which they explained the great work being done here I wish the Institute will braze new trails in its chosen field.

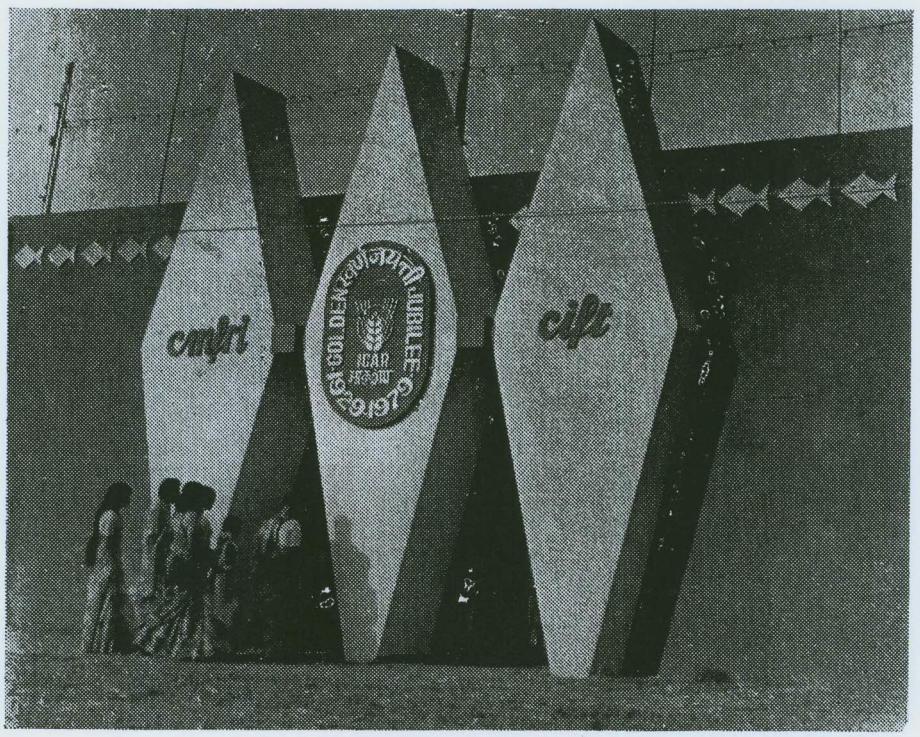
Mr N. Gopinathan Nair
Special Correspondent,
U. N. I., New Delhi.

A very impressive set up and useful work being done.

Mr. V. K. Sehgal,
Assistant Director,
I. S. I. New Delhi.

INTERNATIONAL CASHEW SYMPOSIUM

An International Symposium on Cashew was held on 12-15, March 1979 at the Conference Hall of the Central Institute of Fisheries Technology, Cochin. It was jointly organised by the Indian Council of Agricultural Research (Central Plantation Crops Reseearch Instifute, Kasargode, Kerala), International Society for Horticultural Sciences and Indian Society for Plantation Crops. In this connection, an exhibition called "CASHEW" 79 was conducted at the premises of the Integrated/Pelagic Fisheries Project, Foreshore Road, Ernakulam. The Central Marine Fisheries Research Institute and Central Institute of Fisheries Technology put up accmbined pavilion at the exhibition.



A general view of the pavilion

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