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THE MARINE FISHERIES INFORMATION SERVICE: Technical and Extension Series envisages the rapid dissemination of information on marine and brackish water fishery resources and allied data available with the National Marine Living Resources Data Centre (NMLRDC) and the Research Divisions of the Institute, results of proven researches for transfer of technology to the fish farmers and industry and of other relevant information needed for Research and Development efforts in the marine fisheries sector.

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AN UNDESIRABLE METHOD OF FISHING USING POISONOUS AND TOXIC CHEMICALS*

Recently a novel method of fishing using poisonous and toxic chemicals by fishermen in some fish landing centres, north of Madras Harbour has come to notice. According to an eye witness account at Ondikuppam on 26-10-83, fishes were seen at a distance of less than a kilometer from the shore struggling in distress at the surface layers and fishermen were seen hand picking them from the area using catamarans. The fishes caught in this way belonged to the following genera 1) *Pristiphoma*, 2) *Therapon*, 3) *Lethrinus*, 4) *Otolithus*, 5) *Lutianus*, 6) *Polynemus*, 7) *Serranus* (8) *Diagramma*, 9) *Arius*, 10) *Mugil*, 11) *Gerres* and 12) *Portunus* (crab).

A survey made at the landing centres north of Madras Fisheries Harbour upto Ennore revealed that the local fishermen use some chemical for fishing in areas with rocky bottoms and boulders mostly during rough seas. It was observed that a waste product from some industry at Ambattur is being used for this type of fishing. This product which is a chemical complex mixture is put in a gunny bag and dipped to the bottom

and taken up two or three times when the demersal fishes from the rocky areas would come up to the surface waters in distress and these are hand picked by the fishermen. This chemical mixture is obtained by some parties in drums and sold to fishermen at the rate of Rs. 10/- for a block of 500 gms.

On cursory examination of the chemical it was found that it was a white hard block with blackish dots interspersed over the surface. It was hygroscopic in nature and had a peculiar odour of cyanide. It was water soluble giving a soapy feeling indicating its alkaline nature.

The qualitative analysis done at A. C. College of Technology, Madras revealed the presence of cyanide and sodium ion, the latter being detected by the flame test. The quantitative analysis carried out at the Chemicals Testing and Analytical Laboratory, Government of Tamil Nadu, Guindy, Madras revealed that the chemical sample was a composite chemical mixture and contained 3.82% of cyanide, 0.83% of lead and 0.53% of chloride. Further comprehensive quantitative estimations are being conducted by this laboratory to understand its full composition. Since the chemical

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contains cyanide and lead there is no doubt that the chemical complex material is a health hazard not only to the local fishermen but also to those consumers who use the fish for food.

The pathogenetic effects found in suicide cases using potassium cyanide are well known. It includes apoplectic and epileptic symptoms and the very pronounced symptom is slow breathing. Loss of consciousness and vision are reported to have occurred by cyanide poisoning. In most cases agonising attacks of neuralgic pains between temporal regions and ciliary arch and maxilla, with screaming and apparent loss of sensitivity as if struck with apoplexy, with face flushed have been reported.

Among the best known symptoms of poisoning by lead in humans are the colic and drop-wrist. In addition, there are conditions of kidney irritation with albuminuria, ending in granular degeneration with attendant heart hypertrophy, optic neuritis and blindness. There is an excess of uric acid in the blood of persons under the influence of lead and actual gouty deposits and gouty attacks are observed. Chronic enlargement of the knees and contraction of the lower limbs with complete crippling are also observed in some cases. Lead also causes small aneurisms almost all over the body. In those who have drunk the lead contaminated water, effects vary in intensity according to the amount of contamination and duration of exposure.

When the poisoning has been going on insidiously for years, a state of anaemia is set up with dry, inactive scaly skin and inveterate composition.

These investigations reveal that more and more fishermen resort to toxic and poisonous agents to narcotise the fish in their environments and catch them since it is an easy way without involving expenditure or much fishing effort. It seems that this method of fishing is mostly resorted to get big demersal fishes which will fetch higher price. The fishes caught by this way are coming to the markets in the nearby areas. The consumer who buys this fish is not aware because he cannot distinguish the differences between the fish caught by conventional and the present method.

Further work on the action on the toxic effect of the complex chemical mixture on the common food fishes are in progress. Bio-assays to find out the toxic effects as well as LC 50 and LT 50 and also the effect on the environment are being carried out.

This method of fishing using cyanide and lead containing products will pose a health problem even to those fishermen in the long run by their constant handling of these chemicals. They are exposed to the danger of getting into their system minute quantities of cyanide and lead which may run their health. As such this type of fishing should be totally banned forthwith by a suitable legislation by the authorities concerned.

