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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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EXPORT ORIENTED PROCESSING OF INDIAN JELLY FISH (*MUTTAI CHORI*, TAMIL) BY INDONESIAN METHOD AT PONDICHERRY REGION*

Introduction

The jelly fishes which are being considered as a menace by the fishermen are gaining importance as a valuable food item of high protein content in the south-east Asian countries especially in Japan, Hong Kong, Korea and Indonesia.

The Indian jelly fish, popularly known in Tamil as *Muttai Chori* belongs to the phylum Coelenterata, sub-phylum Medusozoa, class Scyphozoa, order Rhizostomeae, family Rhizostomatidae and genus *Rhizostoma*. These are exclusively marine organisms in which the medusa is the dominant form. The body is umbrella shaped and almost transparent with slight green tint. These medusae which can attain a diameter of 80 cm have a firm bell or umbrella with a layer of dense mesogloea. Tentacles are absent but the mouth stalk has four lobes which divide to form eight thick gelatinous arms. As the medusa grows the arms fuse together and eventually close off the original mouth opening. This fulfil the role of tentacles as they carry nematocysts which are used for capturing food. The food is sucked in through many small openings, the suctorial mouths, which occur on the arms and is passed through a complicated canal system to the stomach cavity.

Availability of raw material in Pondicherry

The jelly fishes are commonly found in the inshore waters of Pondicherry and Tamil Nadu coasts. They are especially abundant during the months of January to June. The jelly fishes are brought towards the coast by the prevailing water currents. Fishing is done either by hand picking or by using scoop nets.

Processing techniques

Jelly fishes having a diameter of more than 25 cm are preferred for processing. Indonesian method of processing involves the displacement of body fluids of the animal by salt solution in a slow and long process.

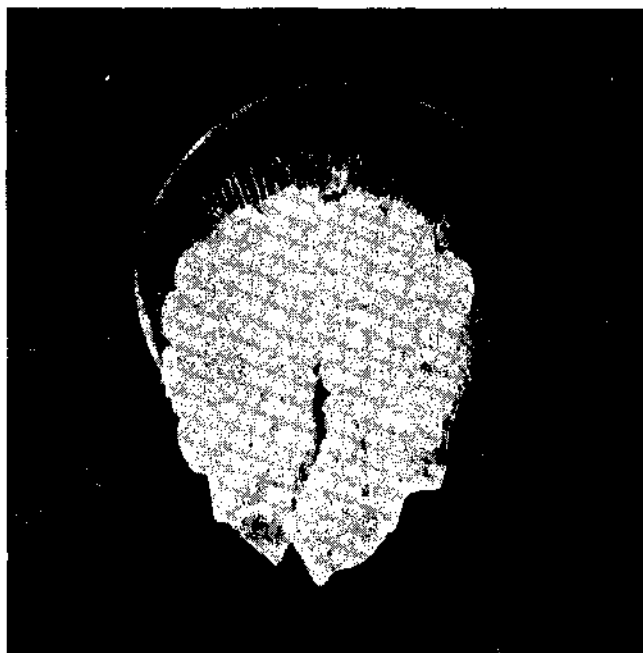
The processing is carried out in seven stages for the umbrella and in six stages for the arm. In the case of umbrella the first five are the salting stages, the sixth

is the salt drying stage and the seventh the packing and storing stage. For processing, the jelly fishes are to be treated within three hours of fishing, failing which the protein content of the gelatinous arms would be destroyed first followed by that of the body, resulting in very bad odour.

In the initial stage fresh jelly fishes are washed well in fresh water and then dissected into two halves; the upper (umbrella) and the lower (arm with stomach cavity). Later the unwanted stomach cavity is removed from the arms stalk. The separated portions of umbrella and arms are washed and put in separate tubs or tanks normally of the dimension of 2 m x 1.5 m x 1m. The tubs are made of casuarina poles and gunny bags lined with thick polythene sheets.

Processing for umbrellas

Stage 1: The umbrellas are kept for three to five hours or until the appearance of a thick white layer in the sub-umbrella part in a solution of the proportion of 100 l of fresh water, 500g of sodium alum and 200g



Rhizostoma sp. The Indian Jelly fish of export value.

of bleaching powder. Afterwards the umbrellas are taken out and the white curdy substance is removed by

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steel knives or thin bamboo blades without making any cut or scar on the umbrella. The thin membrane on the ex-umbrella side should also be removed carefully. The remaining solution is to be discarded.

Stage 2: The umbrellas thus cleaned are piled up one above the other in another tub with the sub-umbrella side facing up and kept for three to four days. For each layer chemicals in the proportion of sodium alum 1,200 g and sodium chloride 6,000 g are to be used. The solution remaining in the tub after processing can be reused.

Stage 3: The body fluids get reduced by this process and after a reduction of 50% of the body fluids in the umbrellas they are transferred to a third tub and stored for three days with 600 g of sodium alum and 8,000 g of common salt.



A young fisherman boy brings the fresh Jelly fish for processing.

Stage 4: On reducing 70% of the body fluids in the umbrellas they are transferred into another tank and piled up adding half the quantity of sodium alum and full quantity of sodium chloride as was used in the previous stage. After four days of this treatment the umbrellas would have shrunk considerably with the edges folded. They are to be cleaned well with saturated solution of common salt of pH 4. The folded edges are to be straightened and the umbrellas are made flat again without any damage. Another tissue membrane now appeared on the concave part of the umbrella is also to be removed. The flattened umbrellas are again washed slightly in saturated salt solution of pH 4.

Stage 5: The washed umbrellas are layered in another tank and kept with 3,000 g of common salt. After three days, the treatment dealt under stage 4 is to be repeated.

Stage 6: In the sixth stage the cleaned and flattened umbrellas are layered in another tub upto the edge with 2,000 g of salt sprinkled over each layer. Saturated



Beheaded Jelly fish: umbrella and arms.

salt solution of pH 4 is to be added to about 4/5 capacity of the tub. Then the top of the tub is to be covered with polythene sheet over which sufficient weight is to be placed for compressing purpose. In this way the remaining body fluid would also come out of the umbrellas.

Stage 7: The flattened umbrellas are piled up in a clean tub. Now the product is ready for packing, storing and exporting/marketing. The product can be packed after two days. The circular flattened umbrellas are piled up one above the other in polythene bags which are packed in wooden cases.

Processing for arms

In stage-1, 700 g of sodium alum and 4,000 g of common salt are dissolved in 400 l of water in a tank in which 15,000 arms could be placed. By giving extra pressure over the piled up arms the fatty substance and other impurities would come out. Afterwards the arms are washed in fresh water.



Final product: 'Chappathi' like umbrella.

In the second stage the arms are arranged in layers of 10 or 12 cm thickness and over each layer 2,500 g of sodium chloride and a little sodium alum should be spread. The arms are left for 24 hours in this condition after which they are thoroughly mixed in the same tank and left for three more days.

The third and fourth stages involve the same process and period as in the 2nd stage but in fresh tubs.

In stage-5 the arms are arranged in layers of 10 cm thickness with 1,600 g of common salt in between each layer. After piling up the arms in this way, saturated salt solution of pH 4 is to be added to the tub to make it 45 full and left for six days.

In the last stage the arms are transferred to another clean tank where they are kept for one day, after which packing could be done. The finished product of good quality should have elasticity and should weigh 70 to 78 g on the average.

Export: At present processed jelly fish are exported from pondicherry and South Arcot in Tamil Nadu only. In 1984, 21 tonnes of jelly fish products processed by adopting the Indonesian method have been exported from these areas by a private entrepreneur. The exports were made mainly to Japan, Thailand and Hongkong, the first-named being the major importer.

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