

## PROCESSING OF JELLYFISH *RHIZOSTOMA* SPP.\*

### ABSTRACT

Fresh jellyfish was processed to get dehydrated product by salt-alum treatment. The percentage yield of the final product ranged from 5.2 to 6.2%. The moisture content of the product ranged from 59.2 to 68.0%, total ash from 24.0 to 29.1%, Sodium chloride from 22.0 to 27.9% and crude protein content from 6.1 to 10.5%. The processed jellyfish samples were packed in polythene covers and stored at 2-4°C and shelf-life of the products were studied.

DEHYDRATED jellyfish *Rhizostoma* spp. is a diversified item of marine product which has good demand in Japan. Jellyfish is abundant along Indian Coast. There is good scope for processing jellyfish. Chidambaram (1984) has reported that 21 tonnes of processed jellyfish were exported from Tamil Nadu in 1984. Govindan (1984) and Santhanakrishnan (1984) described the preservation of jellyfish by immersion in salt solution. Prabhu *et al.* (1987) worked out a suitable method for processing of jellyfish. This account deals with the preparation of dehydrated jellyfish, their proximate composition and storage life.

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#### *Materials and methods*

Jellyfish *Rhizostoma* spp. was collected from Tuticorin, Porto Novo and Kanyakumari. After removing the tentacles, oral arms and intestine, the umbrellas were cleaned in 3% salt solution uncurled and flattened.

The flattened umbrellas were immersed in a solution containing 10% salt and 54% alum for 24 hrs (2 Kg per litre of solution). 1 gm of bleaching powder/Kg of the material was also added and stirred gently. The pH of the solution was maintained near 4 by addition of sodalime. The samples after the first treatment were transferred and immersed in another solution containing 15% salt and 2% alum for 3 days. The pH of the solution was adjusted to 4. The umbrellas were then treated with 20% salt solution for a period of four days. These were then dipped in a saturated solution of brine for 4 days. The umbrellas were then heaped on a slopy draining board for 5 days, to facilitate the removal of excess water. The samples were then packed in polythene packs and stored at 2 to 4°C.

The quality of the processed jellyfish samples were assessed by examining the organoleptic and chemical qualities. The shelf-life of the samples were assessed by organoleptic test (Venkataraman *et al.*, 1955). The chemical factors determined were moisture, total ash, acid insoluble, sodium chloride, protein and total volatile base nitrogen. The total volatile base nitrogen of the sample were estimated by the micro diffusion method of Conway (1947). Moisture, acid insoluble ash, sodium chloride and protein were determined according to A.O.A.C. (1970).

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*Results and discussion*

The jellyfish having a diameter of more than 25 cm are preferred for processing. The processing of jellyfish should be done within 3 hrs of fishing. The percentage yield of the umbrella ranged from 62.3 to 64.5%. The umbrella had moisture content ranged from 95.6 to 96.0% and protein ranged from 3.25 to 3.50%. The diameter of the dehydrated jellyfish ranged from 22.0 to 31.5 cm. Prabhu *et al.* (1987) have reported that the diameter of the jellyfish processed by them to be 10 to 26 cm.

The percentage yield of the finished products and its proximate composition are given in Table 1. The percentage yield of the finished

product ranged from 5.0 to 6.2%. The moisture content ranged from 59.2 to 68.0%, total ash from 24.0 to 29.1%, sodium chloride from 22.0 to 27.9% and crude protein content ranged from 6.1 to 10.5%. Prabhu *et al.* (1978) reported that the moisture content of dehydrated jellyfish ranged from 57 to 72% and the final yield of the product was 8 to 10%. They have also reported wide variations of protein content in processed jellyfish ranging from 6 to 15%. For desired quality of dehydrated jellyfish the moisture content might be preferably less than 60%.

The storage studies of the processed jellyfish samples were assessed by examining the samples organoleptically and chemically

TABLE 1. Field and chemical composition (%) of dehydrated Jellyfish

Sample	Moisture	Crude Protein	TVBN (%mg)	Ash	Sodium Chloride	Yield
1	60.82	7.87	26.0	29.10	27.90	5.2
2	67.00	6.10	10.0	27.50	22.00	6.0
3	65.00	6.10	9.6	26.40	24.90	5.8
4	68.00	6.13	6.0	24.00	22.25	6.1
5	63.80	10.50	5.2	25.00	23.50	6.1
6	59.20	6.18	13.44	24.42	23.80	6.2
7	60.40	6.16	12.24	25.20	24.14	6.2

TABLE 2. Storage studies on dehydrated Jellyfish

Initial			Final			Shelf-life (days)
Moisture %	TVBN mg%	Organoleptic score	Moisture %	TVBN mg%	Organoleptic score	
67.0	10.0	30	54.0	24.0	17	390
65.0	9.6	30	52.6	22.0	18	360

5 marks each for appearance, texture, flavour, odour, colour and fungal/insect attack. When the overall score fell down from 30 to 10 and below, the samples become unacceptable.

(Table 2). The shelf-life of these products were found to be 360 to 390 days. The variation in TVBN during the period of storage was between 9.6 to 24.0 mg%. The moisture

content decreased from 65% to 52.6% during the storage period. The final quality of the product was found good.

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