CHEMICAL COMPOSITION OF THE SWIMMING CRAB *PORTUNUS PELAGICUS* LINNAEUS

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ABSTRACT

The results of the chemical analyses (moisture, ash, fat and protein) of the male and female crab of *Portunus pelagicus* Linnaeus with shell and meat are given in this paper. The differences in the composition between the whole crab and edible meat and the economic uses of crab are also given.

Chemical composition of raw meat and waste portions of the male crab *Portunus pelagicus* has been studied by Badawi (1971). But its chemical composition with shell has not been studied and the present account gives the chemical composition of the male and female crab with shell, edible meat and the difference in the composition between the whole crab and edible meat.

Matured males and females of *Portunus pelagicus* caught by gill nets from Vedalai (Gulf of Mannar) were used in the present study. They were collected alive and immediately used after noting the weight and carapace width. In case of whole crab, it was cut out with shell into 2 to 3 pieces and minced several times with the help of a meat micer. For the edible meat, the crabs were dissected out and the gonads, stomachs and gills were removed. The meat from the body and chelipeds was scraped out by a scalpel and the pieces of thin chitinous muscle covering layers were removed from the meat.

Moisture, ash, fat and protein contents were determined using the standard methods described by Horwitz (1965).

The chemical analyses of the whole crab with shell (Table 1) showed that on an average of 68.64% moisture, 13.18% ash, 0.69% fat and 14.55% protein in male crabs and 71.70% moisture, 13.62% ash, 0.34% fat and 10.34% protein in female crabs.

The chemical composition of the edible meat averaged 79.87% moisture, 1.84% ash, 0.15% fat and 19.27% protein for male crabs and 83. 25% moisture, 1.35% ash, 0.16% fat and 16.19% protein for female crabs (Table 2).

TABLE 1. *Chemical composition of* Portunus pelagicus *with shell*

Sex	Size (carapace width mm)	Percentage content of			
		Moisture	Ash	Fat	Protein
Male	135	67.39	13.58	1.49	15.81
Male	141	67.75	13.82	0.21	14.86
Male	145	73.16	11.37	0.30	13.32
Male	158	66.27	13.96	0.74	14.21
Female	116	71.73	15.03	0.33	11.25
Female	120	71.66	11.50	0.13	10.88
Female	134	71.74	14.34	0.55	8.90

Badawi (1971) has reported that the meat of the male crab contains on an average of 86.0% moisture, 1.96% ash, 0.67% fat and 10.3% protein. These values are higher except protein content when compared to the values obtained for male crab meat. The fat content of the male crab meat is close to the mean value obtained for male crab with shell (0.69%).

The average moisture content in the whole crab is much less (70.17%) than that of its content in the crab meat (81.56). The ash and fat contents of the whole crab are remarkably higher than those of the values obtained for the edible meat. The protein content is more in the meat (17.73%) than in the whole crab (12.44%).

The protein values given here are obtained by multiplying the total nitrogen content with 6.25., since a higher proportion of the total nitrogen content of crab is not in protein form (non-protein), the values given are higher than the true protein content available for nutritional purposes.

TABLE 2. *Chemical composition of* Portunus pelagicus *meat*

Sex	Size (carapace width mm)	Percentage content of			
		Moisture	Ash	Fat	Protein
Male	160	80.78	1.76	0.16	19.36
Male	161	79.64	1.93	0.14	18.62
Male	164	79.20	1.82	0.14	19.84
Female	144	83.99	1.26	0.20	16.36
Female	147	82.00	1.36	0.14	16.08
Female	149	83.76	1.42	0.13	16.12

P. pelagicus occurs in large numbers along the coasts of Palk Bay and Gulf of Mannar. Even though the protein content is less in crabs than in fishes (8.3-23.8%) they form a well established food. There is a great demand for them in rural and urban areas at present as they are consumed by the larger section of the people. Crab curry is used for curing asthma and chronic fevers. The shells are dried and powdered and used for poultry feed and manure.

BADAWI, H. K. 1971. *Marine Biol.*, 11(3): 198-200.

CHOPRA, B. 1939. *J. Bombay nat. Hist. Soc.*, 41(2): 221-234.

HAMOIR, C. 1955. *Advances in protein chemistry*, 10: 227-288

HORWITZ, W. 1965. *Official methods of analysis of the Association of Official Agricultural Chemists*, 957 pp.