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Part Two

MARCH 1990



NATIONAL SYMPOSIUM ON RESEARCH AND DEVELOPMENT IN MARINE FISHERIES

MANDAPAM CAMP
16-18 September 1987

Papers Presented
Sessions III & IV

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
(Indian Council of Agricultural Research)
P. B. No. 2704, E. R. G. Road, Cochin-682 031, India

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PROXIMATE COMPOSITION, CALCIUM AND PHOSPHORUS CONTENTS OF FIVE VARIETIES OF DEEP SEA FISHES OF ANDHRA COAST

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ABSTRACT

Five varieties of deep sea fishes *Psenes indicus*, *Decapterus dayi*, *Priacanthus* sp., *Centrolophus niger* and deep-sea pink prawn (*Solenocera hextii*) were collected from the deep-sea fishing vessels of Fishery Survey of India from Visakhapatnam base. These were analysed for their proximate composition, calcium and phosphorus contents in the edible muscle portions. Sensory evaluation of the edible muscle of these fishes was carried out and found to be tasty and acceptable. The fat content is very high in these deep-sea fishes and they deserve consideration while developing suitable processing techniques.

INTRODUCTION

In order to ensure proper utilisation of the newer varieties of fish, information on their proximate composition is an essential pre-requisite and the current work is a step in that direction. *Psenes indicus*, *Decapterus dayi*, *Priacanthus* sp., *Centrolophus niger* and *Solenocera hextii* were used for this study. These fish were collected from the deep sea fishing vessels of Fishery Survey of India, Visakhapatnam Base. The material had been stored on board in frozen condition at about -18°C . The frozen fish and prawns were taken from the vessels and packed in ice in thermocole insulated boxes and brought to Kakinada by train and used for analysis. The fishes were thawed, cleaned, gutted and beheaded. In case of prawn, the head was removed and the shell was peeled off and deveined. The edible muscle portions were separated and analysed for moisture, total protein, fat and ash content following AOAC methods (1975). Calcium was analysed from the ash content following AOAC (1965) method. Phosphorus was also determined from ash content using Fiske and Subba Row method (1925). Sensory evaluation of the edible muscle was carried out by boiling the edible muscle pieces in 2% salt solution, in tap water for 10 minutes and tasted by a panel of Judges.

RESULTS AND DISCUSSIONS

From taste panel observations, it was seen that all the fishes were tasty and liked by all the members.

The proximate analysis, calcium and phosphorus contents of different fish samples are given in Table-1. From the protein contents, it is very clear that all the above fishes contain good amount of protein. The calcium content is comparatively high in deep-sea prawn. Inorganic phosphorus content and calcium content are more in *Decapterus dayi* when compared to other fishes under study. All the fishes (except prawn) contain a high percentage of fat. This high fat content in fishes may pose certain problems in adopting different processing techniques.

The fleshy fishes *Psenes indicus*, *Priacanthus* sp. and *Centrolophus niger* can easily be comparable with other conventional fleshy food fishes. An effective method of preservation of these fishes is icing which permits distribution over considerable distance or the provision of short term buffer stock at any point on the way to consumer. *Decapterus dayi*, which is a bony fish with high fat content, can be easily and hygienically processed to smoked product. All these fishes may not give good salt dried products, because of their high fat content. As

TABLE - 1. *Proximate composition, calcium and phosphorus contents of deep-sea fishes (edible portions)*

Sl. No.	Species	Moisture %	Ash %	Fat %	Protein (T. NX6.25)	Calcium mg/100 g muscle	Phosphorus mg/100 g muscle
1.	<i>Psenes indicus</i>	74.5	1.453	4.4	20.125	236.6	257.6
2.	<i>Decapterus dayi</i>	75.7	1.65	5.1	17.35	270.4	385.5
3.	<i>Priacanthus</i> sp.	75.8	1.431	2.06	19.375	267.5	350.0
4.	<i>Centrolophus niger</i>	74.0	0.832	8.996	15.88	77.5	250.46
5.	<i>Solenocera haxtli</i>	78.1	1.562	1.357	16.74	459.4	196.85

smoked and dried products from small prawns are already popular locally, this small deep-sea prawn can easily be utilised in a similar way besides their utilisation in fresh condition. Thus these new resources from deep sea can reasonably be expected to go a long way in filling the gaps of our country's animal protein requirements.

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