



VARIATIONS OF PROTEIN CONTENTS IN THE MUSCLE OF FISH NOTOPTERUS CHITALA (Hamilton) FROM GODAVARI RIVER AT NANDED REGION, MAHARASHTRA. INDIA.

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ABSTRACT:

The seasonal variation in protein content of fresh water fish *Notopterus chitala* from Godavari River at Nanded region, Maharashtra state were observed from January 2018 to December 2018. The obtained results showed that protein content was high in the month of July (19.05), the lowest was high in the month of January 16.10 and December 15.07, then there was a slight increase in the protein content in the month of February, March, April, May and June which ranges 16.05, 16.15, 18.10, 18.10, 19.00 tissue respectively. Variation of protein content during different seasons of the year helps. Nutritionists & researchers who are striving to improve the nutritive value, processing & marketing of endangered fish species & in fishing industry.

KEYWORDS: Protein, monthly variation, Seasonal variation, *Notopterus chitala*.

INTRODUCTION

Fish are known to be a very healthy food items. They are an excellent protein source & also contain various minerals & Vitamins necessary for good health. Scientist reported that societies with high fish intake have considerably lower rates of acute myocardial infarctions & other ischemic heart diseases. The present availability of protein is much below the minimum daily requirements and the live stock sector alone will not be able to meet the protein requirement of ever increasing human population. Fish is an excellent & relatively cheaper protein source of high biological value. Fish protein contains all essential amino acids in the required proportion & hence have a high nutritional value, which contribute to their high biological value. Cereal protein is an excellent source of these amino acids. Fish also contains lysine, threonine, tryptophan, isoleucine, leucine, phenylalanine & valine amino acids. In diets based mainly on cereals, a supplement of fish can therefore raise the biological value significantly. Fish is also rich in the non-protein amino acid taurine which has a unique role in neurotransmission.

Although several studies deal with proximate composition of biochemical component of many commercially important fishes, but no work has been carried out on *Notopterus chitala* particularly from Nanded Region of Maharashtra state. Therefore the present study was undertaken to show seasonal & monthly variation in the amount of total protein content in muscle of *Notopterus chitala* to determine the nutritional value & variations during the fishing season which is very important in recent years.

MATERIALS AND METHODS :-

Samples of *Notopterus chitala* were collected from River Godavari & fish market at monthly intervals during the period of January 2018 to December 2018. They were immediately transported to the laboratory of Fishery Science of N.E.S. Science College, Nanded. worked with cold tap water. Then total length total weight and sex were determined. Body muscle samples (free from skin & scales) of each month were collected and homogenized in a homogenizer before the analysis of biochemical components. Weight of *Notopterus chitala* varied from 14gm to 150gm and length varied from 12cm to 28cm..

PROTEIN ESTIMATION:-**Biuret Method:-**

This is the most widely used method for protein estimation. It is carried out by using std. kit Erba. The peptide bonds of protein react with copper II ions in alkaline solution to form blue-violet complex (biuret reaction) Each copper ion complexed with 5 or 6 peptide bonds. Tartaric acid is added as a stabilizer whilst Iodide is used to prevent auto-reduction of the alkaline copper complex. The color is proportional to the protein concentration and is measured at 546nm (520-560nm)

Table : 1 Monthly changes in protein content of *Notopterus chitala* (g/g tissue)

Sr.No	Month	Protein content of <i>Notopterus chitala</i> Muscles
1	Jan-2018	16.10
2	Feb-2018	16.05
3	Mar-2018	16.15
4	April-2018	18.10
5	May-2018	18.10
6	Jun-2018	19.00
7	July-2018	19.05
8	Aug-2018	18.05
9	Sept-2018	18.00
10	Oct-2018	16.50
11	Nov-2018	16.05
12	Dec-2018	15.07

Result:-

The protein composition of *Notopterus chitala* was determined over the period 1 year and obtained results are present in table no.1

- Protein Content varied from 15.07 to 19.05 g/g tissue
- The highest protein content was in month of July and the lowest protein content in the month of December.
- A decrease in the protein content in the month of December was recorded (table no.1)
- Seasonal variation shows the highest value of protein percentage in Summer season, the lowest protein percentage was recorded in Winter season (table no.1)

CONCLUSION:-

The result suggests that the protein content of fish greatly varies during the different seasons. It may be due to the physiological condition and environmental condition that is spawning, breeding, migration & heavy feeding.

This study provides valuable information on variations in protein content of fish species studied in order to take necessary precautions in processing from the manufacturer's point of view. Biochemical studies of fish tissue are of considerable interest for their specificity in relation to the food values of the fish and for the evaluation of their physiological needs at different periods of life. It is also necessary. Biochemical studies of fish tissue are of considerable interest for their specificity in relation to the food values of the fish and for the evaluation of their physiological needs at different periods of life.

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