WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
Coden USA: WJPRAP Impact Factor 8.63
Volume 15, Issue 7, 1698-1701. Research Article ISSN 2277–7105

VARIATIONS OF PROTEIN CONTENTS IN THE MUSCLE OF FISH CHANNA PUNCTATUS [Bloch, 1793] FROM GODAVARI RIVER, AT NANDED REGION, MAHARASHTRA. INDIA

***Dr. D. V. Totawar**

Department of Zoology, Yeshwant Mahavidyalaya, Nanded Maharashtra. India.

Article Received on 05 March 2026,
Article Revised on 25 March 2026,
Article Published on 04 April 2026,

https://doi.org/10.5281/zenodo.19413925

***Corresponding Author**

Dr. D. V. Totawar

Department of Zoology, Yeshwant Mahavidyalaya, Nanded Maharashtra. India.

How to cite this Article: Dr. D. V. Totawar. (2026). Variations of protein contents in the muscle of fish channa punctatus [bloch, 1793] from godavari river, at nanded region, maharashtra. India. World Journal of Pharmaceutical Research, 15(7), 1698–1701.

ABSTRACT

The seasonal variation in protein content of fresh water fish Channa punctatus from Godavari River at Nanded region, Maharashtra state were observed form January 2025 to December 2025.The obtained results showed that protein content was high in the month of July (18.05), the lowest was in the month of January 16..05 and December 15.00,then there was a slight increase in the protein content in the month of February, March, April, May and June which ranges 16.20,16.50,17.03,17.05,18.02 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, Channa punctatus.

INTRODUCTION

Fish are known to be a very healthy food items. They are an excellent protein source & also content 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 livestock sector alone will not be able to meet the protein requirement of ever increasing human population. Bang, H.O. and J. Dyerberg, (1980) Fish is an excellent & relatively cheaper protein source of high biological value. Fish

protein contain all essential amino acids in the required proportion & hence have a high nutritional value, which contribute ti their high biological value. Cereal protein is an excellent source of these amino acids. Fish also contain 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 unique role in neurotransmission.

The Snake headed “Channa punctatus” we identified by Colour, Morphometric, Meristic, Juvenile stage and by Day Volume. The Channa punctatus is commonly called as Murrels in Maharashtra, India. It is fresh water fish and valuable food fish. It is predatory fish in the family Channidae, several studies deal with proximate composition of biochemical component of many commercially important fishes, but no works has been carried out on Channa punctatus 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 Channa punctatus determine the nutritional value & variations during the fishing season which is very important in recent years.

MATERIALS AND METHODS

Samples of Channa punctatus were collected from River Godavari & fish market at monthly intervals during the period of January 2025 to December 2025. They were immediately transpired 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 Channa punctatus varied from 81gm to 180gm and length varied from 22cm to 31cm.

Protein Estimation

Biuret Method: This is the most widely urged method for protein estimation. It is carried out by using std. kit Erba. The peptide bonds of protein react with copper II io ns in alkaline

solution to from blue- violet complex (biuret reaction) Each copper ion complexion with 5 or 6 peptide bonds. Tartar ate 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 Channa punctatus (g/g tissue).

Sr.No	Month	Protein content of Channa punctatus Muscles (Per 100gm tissue)
1	Jan-2025	16.05
2	Feb-2025	16.20
3	Mar-2018	16.50
4	April-2025	17.03
5	May-2025	17.05
6	Jun-2025	18.02
7	July-2025	18.05
8	Aug-2025	17.05
9	Sept-2025	17.00
10	Oct-2025	15.50
11	Nov-2025	15.05
12	Dec-2025	15.00

RESULT

The protein composition of Channa punctatus was determined over the period 1 year and obtained Result are present in table no.1

- Protein Content varied from 15.00 to 18.05 g/g tissue (Per 100gm tissue)
- The highest protein content was in month of July and the lowest protein content in the month of December.
- A decreased in the protein content in the month of December was Recorded (tab 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 suggested that the protein content of fish greatly various during the different season. 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 precaution in processing from manufacturer 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.

REFERENCES

1. **Ananthi.S., Subbulakshmi.S., Joycy Joy Manoharam (2015).** Biochemical study of selected fresh water fish in Grand Anicut. *International J. Advanced Res.,* 3(5): 305-307.
2. Weigelt, C., 1891. The Abfaller marine fisheries, experimental studies on the nature, quantity processing and utilization. (Special Supplement to the messages of the sections F. coastal and offshore fishing.) Moeser, Berlin, 115.
3. Bang, H.O. and J.Dyerberg, 1980. Lipid metabolism and ischemic heart disease in Green land Eskioms. In: Advances in Nutrition Research (edited by H. H. Draper),: 1-22. New York, NY: Plenum Press.
4. Blanchet, C., E. Dewaily, P. Ayotte, S. Bruneau, O. Receveur and B.J.Holub, 2000. Cntribution of Selected traditional and market foods to the diet of Nunavik Inuit women. Can. J.Diet Pract., Res., 61: 50-59.
5. Chaudhry A.S., 2008. Forage based animal production systems and sustainability: an invited paper. Revista Brasilerira de Zootecnia, 37: 78-84. The Canadian Journal of Dietetic Practice and Research, 61: 50-59.
6. **Chamundeshwari Devi and Vijayaragahwan S. (2001)** .Biochemical composition of carcass, muscle and liver of *Labeo rohita* fed on soybean and Glycine based diets with lysine and methionine. *J. Aqua. Bio*., 16(2): 81-83.
7. Waseem. M.P., 2007 Issues, growth and instability of inland fish production in sindh (Pakistan) spatialtemporal analysis. Pakistan Economic and Social Review, 45(2): 203-230.
8. Terashima A., 1984. Three new species of the Cyprinid genus *Schizothorax* from Lake Rara Northwestern Nepal. Japanese Journal of Ichthyology, 31(2): 122-134.
9. Kullander S.O., F.Fang, B. Delling and Ahlander, 1999. The fishes of the Kasmir Valley. 99-167 In Nyman L. (ed), River Jhelum, Kashmir Valley. Impacts on the aquatic environment Swedmar, Gothenburg.