



**STUDIES ON PROTEIN CONTENTS IN CESTODE OF THE GENUS PTYCHOBOTHRIMUM
AND ITS HOST MASTACEMBELUS ARMATUS****Sanjay Shamrao Nanware and Dhanraj Balbhim Bhure****Department of Zoology (UG&PG), Yeshwant Mahavidyalaya, Nanded 431 602 (M. S.)****Email- snanware@rediffmail.com, drajbhure82@gmail.com**

ABSTRACT :

Present study deals with quantitative investigation of protein content in Cestode of the genus *Ptychobothrium sp.* and its normal and infected intestinal host tissue of *Mastacembelus armatus*. Obtained result indicate that amount of protein present in *Ptychobothrium sp.* is lower (2.87 mg/gm) as compared to protein present in infected intestinal tissue of *Mastacembelus armatus* (3.78 mg/gm) as well as in normal host intestinal tissue of *Mastacembelus armatus* (4.24 mg/gm).

Key words: : Cestode, *Mastacembelus armatus* , Protein Content, *Ptychobothrium sp.*

INTRODUCTION

Proteins are fundamental units for all metabolic activities; they are most important agents for expression of the genetic material. Proteins are the most abundant organic molecules in cells constituting 50 percent or more of their dry body weight. They are found in every part cell; since they are fundamental in all aspects of cell structure and function. The proteins are absorbed by the parasites by diffusion and transfusion. Tapeworms completely lack alimentation in all stages of life history. The cestode parasites utilize the food from the intestinal gut of host. The metabolism depends on the feeding habits and the rich nourishment available in the gut of the host. Parasites use this nourishment for their development and growth.

Fish is correctly regarded as a healthy component of the diet. Fish is an excellent source of food. Its flesh is nutritionally equivalent to meat in protein contents, low in saturated fats and high in essential minerals and vitamins. To obtain healthy and quality meat fish, it is necessary that the fish should be free from all types of infections. Helminths are found in almost all the animals including fish throughout the world.

MATERIAL AND METHODS

For the collection of Cestode parasites, the intestine of *Mastacembelus armatus* were collected from different localities of Nanded. Collected worms were washed; preserved in hot 4 % formalin; stained in Borax carmine; Stained specimens were dehydrated through ascending alcoholic grades, cleared in xylene and mounted in DPX. Drawings are made with the aid of camera lucida for taxonomic identification. The Cestode parasites collected from intestine of fish host *Mastacembelus armatus* was identified as *Ptychobothrium sp.* Protein content was determined by the Lowery's Method (1951).

RESULTS

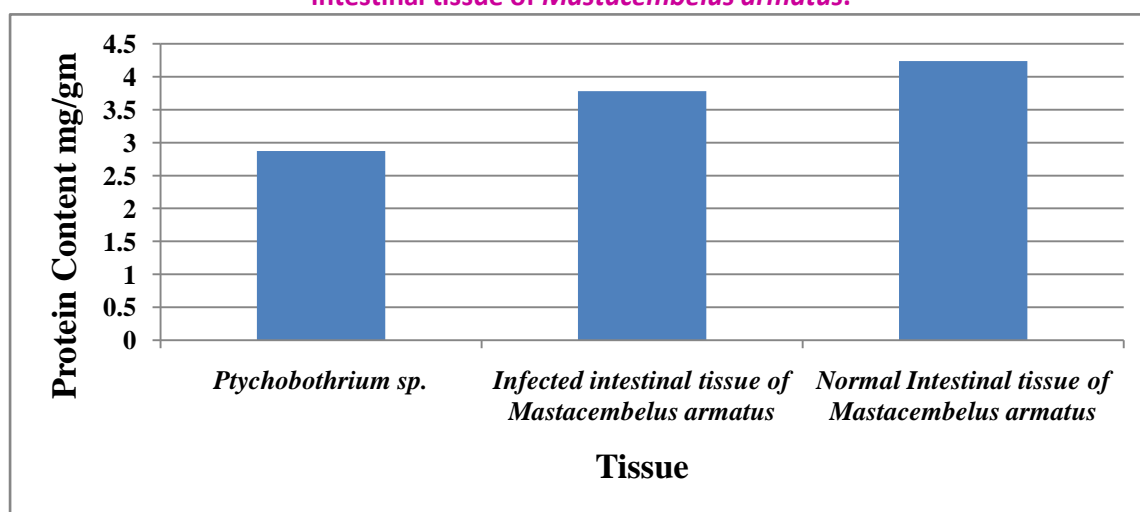
Result obtained in present study indicates that amount of proteins present in *Ptychobothrium sp.* is lower (2.87 mg/gm) as compared to protein present in infected intestinal tissue of *Mastacembelus armatus*

(3.78 mg/gm) as well as in normal host intestinal tissue of *Mastacembelus armatus* (4.24 mg/gm). This is summarized in table and graph.

Table: Comparative chart of protein content in *Ptychobothrium sp.*, infected intestinal tissue and Normal intestinal tissue of *Mastacembelus armatus*.

Protein contents (mg/gm wet weight of Tissue)		
<i>Ptychobothrium sp.</i>	Infected intestinal tissue of <i>Mastacembelus armatus</i>	Normal Intestinal tissue of <i>Mastacembelus armatus</i>
2.87	3.78	4.24

Graph: Graph showing protein content in *Ptychobothrium sp.*, infected intestinal tissue and Normal intestinal tissue of *Mastacembelus armatus*.



DISCUSSION

Finding of present study are in agreement with previous study of Jadhav et.al., 2008 who reported amount of protein in *Davainea shindei* is 13.20 mg/mg wt. of tissue where as in host intestine is 15.42 mg/mg of tissue. Nanware et.al., 2012 studied amount of proteins in *Cotugnia sp.* is lower (5.77mg/gm) as compared to protein present in infected intestine (6.66 mg/gm), in host normal intestine (16.22 mg/gm). Bhure et. al., 2012 recorded lower (15.88 mg/gm) amount protein in *Ascardia galli* as compared to infected intestine (19.33 mg/gm) and normal host intestine (19.77 mg/gm). Bhure et. al., 2013 reported low amount of protein in *Moniezia expansa* (2.72 mg/gm wet weight) as compared to infected intestine of *Capra hircus* (3.63 mg/gm wet weight) and normal intestinal tissue of *Capra hircus* (4.09 mg/gm wet weight). Pallewad et al., 2014 studied Protein contents in normal intestinal tissue of *Capra hircus* L. is 31.27 mg/100 mg; in infected intestinal tissue is 28.36 mg/100mg where as in *Cotylophoron sp.* is 23.60 mg/100gm. Bhure et.al., 2015 recorded proteins in *Spinitectus indica sp.* (2.55 mg/gm) is lower to infected intestinal tissue of *Mastacembelus armatus* (3.11 mg/gm) as well as normal intestinal tissue (4.22 mg/gm).

The present study indicates, protein is low in Parasite than infected and normal intestinal tissue.

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REFERENCES

1. **Bhure D. B., Kadam Nima, Nanware S. S. and Garad V.B. (2012).** Studies on protein profile of *Ascardia galli* and its host *Gallus gallus domesticus* *International Multidisciplinary Research Journal* **Vol.2 (6):**60-61
2. **Bhure Dhanraj Balbhim, Kalyankar Madhav Marothrao and Nanware Sanjay Shamrao (2013).** Studies on Protein contents of *Moniezia expansa* Rudolphi, 1810 and its host *Capra hircus*. *Indian Journal of Applied Research*. **Vol.4 (4):** pp 67-68.
3. **Bhure Dhanraj Balbhim, Nanware Sanjay Shamrao and Kardile Swati P. (2015).** Studies On Protein Content Of *Spinitectus indica* Bhure and Nanware,2013 and its Host *Mastacembelus armatus* Lacepede, 1800. *Proceeding of National Conference on "Current Trends in Aquaculture"*. Published as a Special Issue of *International Journal of Advanced Research in Basic and Applied Sciences*. Special Issue pp.108-111.
4. **Jadhav, B. V., Shivesh P. Singh, Bhure, D. B. and Padwal, N. D. (2008).** Biosystematic studies of *Davainea shindei* n.sp. (Cestoda- Davainidae) Fuhrmann, 1907 from *Gallus gallus domesticus*. *National Academy of Science Letter* **Vol.-31 No.-7&8:** pp 245-250.
5. **Lowry, O.H., Rosenborough, N.J., Farr, A.L. and Randall, R.J., (1951).** Protein measurement with folin phenol reagent. *J. Biol. Chem.* **193:** 265-275.
6. **Nanware S. S., Nazneen Uzma, Bhure D. B. and Garad V.B. (2012).** Studies on protein content of cestode *Cotugnia* and its host *Gallus gallus domesticus* *Journal of Experimental Sciences* **Vol. 3(1):** 40-41.
7. **Pallewad Sushma, Nanware Sanjay Shamrao and Bhure Dhanraj Balbhim (2014).** Biochemical contents of *Cotylophoron cotylophorum* (Fischoeder, 1901) Stiles et Goldberger, 1910 and its host intestinal tissue. *Biolife, An International Journal of Biology and Life Sciences*. **Vol. 3(1)** pp.192-195
8. **P.Anil Kumar (2014).** Biochemical effects on Protein and Free Amino acid metabolism in *Catla catla* and *Labeo rohita* due to *Pallisentis nagpurensis* infection. *American International Journal of Research in Formal, Applied & Natural Sciences*, **6(1):** pp. 82-85
9. **Yamaguti, S.(1959).** *Systema Helminthum. II.The Cestodes of Vertebrates*. Intescience Publishers Inc. N.Y., pp 860.