



BIOCHEMICAL STUDIES ON PROTEIN CONTENT IN CESTODE PARASITE COTUGNIA SP. AND THEIR HOST GALLUS GALLUS DOMESTICUS FROM PAITHAN DIST. AURANGABAD

KEYWORDS

Cotugnia, Gallus gallus domesticus, Paithan, Protein.

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ABSTRACT

Present investigation deals with quantitative study of protein content in cestode parasite *Cotugnia Sp.* and their host *Gallus gallus domesticus*. The result obtained that percentage of protein is lower in *Cotugnia Sp.* as compare to normal and infected intestine of host.

INTRODUCTION

India recorded the fastest growth rate in poultry meat production during 1985-95 with growth rate about 18% per annum which perhaps, no other country or agro industry in the world has recorded, during that period.

Main sources of energy reserves in fish are protein and lipid, in contrast to mammals in which carbohydrate and lipid are more important. This is perhaps due to the following factors: (I) the diet of fish generally consists of high protein, and the fish metabolism is well adapted to deal with such a diet; (II) unlike mammals, fish have the ability to eliminate nitrogenous waste rapidly and continuously; (III) specific activities of lysosomal enzymes which are involved in protein breakdown are greater in fish than in mammals (Chellappa, 1988)

Proteins have many different biological functions. They are ubiquitous in their distribution and there is really no satisfactory scheme of classifying them. The largest gr. of proteins is the enzyme proteins provide rich environment for the nourishment of cestodes. The cestodes utilize different degrees of protein for producing energy. Literature reveals that the parasite able to adapt themselves to the parasitic mode of life, only due to protein usually constitutes reported (John Barrett 1981).

The Proteins are absorbed by the parasites by diffusion and transfusion. Proteins have many different biological functions. They are everywhere in their distribution and there is really no satisfactory scheme of classifying them. The largest groups of proteins are the enzyme proteins provide rich environment for the nourishment of cestodes. The cestodes utilize different degrees of protein that producing energy. Literature reveals that the parasites able to adopt themselves to the parasitic mode of life, the protein usually constitutes between 20 to 40% of the dry weight (John Barrett, 1981). The present investigation deals with the biochemical studies of protein content Cestode parasites i.e. *Cotugnia Sp.* in *Gallus gallus domesticus*.

MATERIALS AND METHODS

Sample Collection

The worms were collected from the intestine of birds i.e. *Gallus gallus domesticus* and then washed with distilled water. Collected worms were then dried on the blotting paper to remove excess water and transferred to watch glass and weight on sensitive balance. After 50-600 C for 24 hrs. the dry weight was also taken.

Biochemical estimation

The estimation of protein content in the Cestode parasites were carried out by Lowry's method (1951).

RESULT AND DISCUSSION

In the present investigation, Cestode parasites i.e. *Cotugnia sp.* was carried out for biochemical estimation of primary metabolites such

as protein.

Result obtained in present study indicate that amount of proteins present in *Cotugnia Sp.* is 9.05 mg/gm and Non-infected and infected intestine of host 13.9 mg/gm and 15.06 mg/gm respectively. It means that protein content in *Cotugnia* is lower as compare to infected and non-infected intestine of host i.e. *Gallus gallus domesticus* (Asawari Fartade and Ravindra Chati, 2016). This is summarized in table and graph.

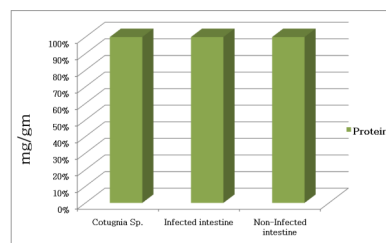
Total protein content of cestodes usually lies between 20 and 40 % of the dry weight that is comparatively lower than that of other invertebrates (Smyth and McManus, 2007) but values, as high as 70% of the dry weight have been reported for *Macranchanthorhynchus hirudinaceus* and the infective larvae of *Nippostrongylus brasiliensis* (Barrett, 1981).

Result shows parity with findings 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). Amol Thosar et al., (2014) reported that amount of protein in *Moneizia Sp.* is 0.2 mg/100mg dry weight of tissue and *Stilesia Sp.* is 0.11 mg/100mg dry weight of tissue and infected and non-infected host intestine i.e. *Ovis bharal* is 0.34 mg/ 100 mg dry weight of tissue and 0.36 mg/100 mg dry weight of tissue respectively. Asawari Fartade and Ravindra Chati, (2016) reported amount of protein in *Cotugnia Sp.* is 6.77 mg/gm where as in host infected and non-infected intestine is 8.6 mg/gm and 17.2 mg/gm respectively.

The present study reveals that, protein content is lower in *Cotugnia Sp.* than the infected and non-infected intestine of host i.e. *Gallus gallus domesticus*

Table No. 1: Biochemical estimation of *Gallus gallus domesticus* intestine and parasites i.e. *Cotugnia sp.*

Name of Parameter	Cotugnia Sp.	Infected intestine	Non-Infected intestine
Protein (mg/gm weight of tissue)	9.05	15.06	13.9



Graph No. 1: Biochemical estimation of *Gallus gallus domesticus* intestine and parasites i.e. *Cotugnia* sp.

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