International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Biochemical Estimation of *Moniezia sp.* Parasite in *Capra hircus* from Nashik Region

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Abstract: ***The biochemistry of parasite helps to identify the effect of parasite on the host animal in terms of its nutritive value. Goat (Capra hircus) intestine were brought to the laboratory and dissected carefully. Host normal intestine, infected intestine and cestodes were collected for powder. From this study we can say that the protein percentage is higher in parasite as compared to lipid and glycogen.***

Keywords: *Capra hircus*, intestine, parasite etc.

1. Introduction

Agriculture plays an important role in Indian economy and animal husbandry is an integral part of Indian agriculture. India ranks second in sheep population (71.56 million) in the world (FAO, 2010). It is well established that metazoans in their passage from fertilization to maturity pass through a long succession of stages which are characterized by morphological and biochemical changes associated with them (Needham, 1942). Parasitism, especially by helminthic parasites, impairs health by causing inappetance, diarrhea, anemia and in severe cases death (Kumar et al., 2015a). The helminth infections of gastrointestinal tract of small ruminants not only cause direct adverse effect on the health leading to morbidity and mortality but also indirectly effect economically involving cost of treatment and control of parasites (Nwosu et al. 2007). Monieziasis is a gastrointestinal parasitic disease which is caused by intestinal tapeworm, *Moniezia* spp. Previous investigations made in different regions along the length of the strobila of tapeworm reveal regional differences in morphological and anatomical features (Andersen, 1975; Thompson et al., 1980), chemical composition (Roberts, 1961; Mettrick and Cannon, 1970; Rani et al., 1987a, b) nucleic acid levels (Bolla and Roberts, 1971; Mettric and Cannon (1970) and gene expression (Bo et. al., 2012). Literature reveals that the parasites able to adopt themselves to the parasitic mode of life, only due to protein. usually constitutes between 20 and 40 % of the dry weight have been reported (John barrett 1981). The higher content of lipid is found in gravidproglottids (Brand and Van T 1952).

2. Materials and Methods

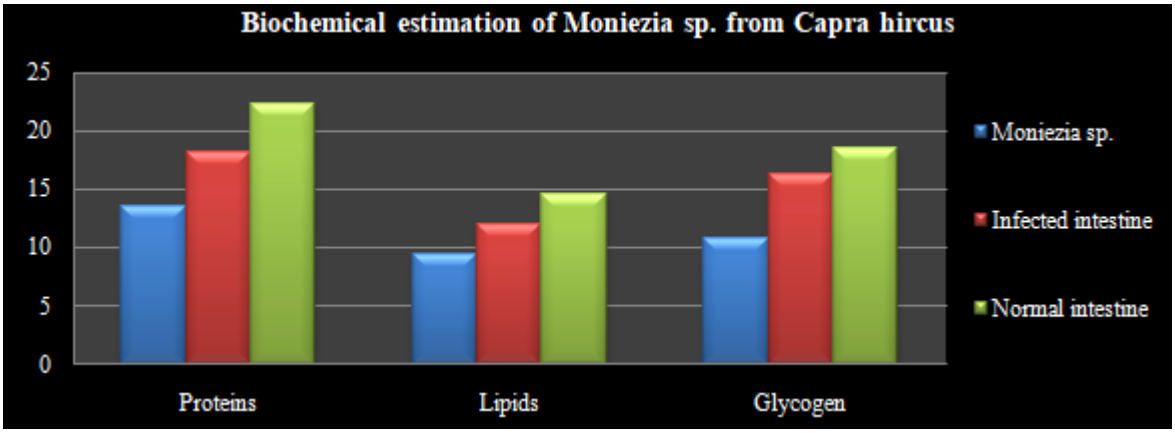
Goat intestine were brought to the laboratory and dissected carefully. Host intestine and cestodes were collected for powder. The cestodes were placed on the blotting paper for removing excess of water and the material was kept in oven for drying at 58° to 60°C for twenty - four hours. With the help of mortar and pestle the powder was prepared for biochemical estimation.

Cestode parasites from the infected intestine and non - infected intestine were collected and observed under the microscope. Identical worms were sorted out; few of these were fixed in 4% formalin for taxonomical study. These were later stained with Harris Haematoxylin and identified genus as *Moniezia.* The worm, infectedhost tissues and normal intestinal tissue were blot dried using blotting paper. After determining the weight samples were placed in hot air oven at 80^0C for 24 hours. Then, the dried materials were ground to a fine powder using mortar and pestle. Dried powder of each stage was used for the estimation of protein, carbohydrate, lipid. The estimation of protein content in the cestode parasites were carried out by Lowry's method, Carbohydrate was estimated using the anthrone reagent (Roe, 1955). and lipid estimation by Folch et al., (1957) method.

3. Observation

Table 1: Biochemical estimation of *Moniezia* sp. from *Capra hircus* (L.)

Sr. No.	Name of Biochemical	*Moniezia* sp.	Infected intestine	Normal intestine
1.	Proteins	13.50 mg/gm.	18.20mg/gm.	22.30mg/gm.
2.	Lipids	09.50 mg/gm.	12.00 mg/gm.	14.50 mg/gm.
3.	Glycogen	10.80 mg/100 ml	16.30 mg/100 ml	18.5 mg/100 ml



4. Result and Discussion

Biochemical estimation in cestode parasites i. e. *Moniezia*, Infected host intestine, Normal intestine are shown in table no.1. The protein content was very high in normal intestine 22.30 mg/gm as compared to infected intestine 18.20 mg /gm and in *Moniezia* worm it was 13.50 mg/gm. The lipid content was very high in normal intestine 14.50 mg/gm as compared to infected intestine 12.00 mg /gm. and in *Moniezia* worm it was 09.50 mg/gm. The Glycogen content was very high in normal intestine 18.50mg/100 ml as compared to infected intestine 16.30 mg /100 ml. and in *Moniezia* worm it was 10.80 mg/100 ml. From this biochemical study we concluded that the percentage of protein is high in*Moniezia* parasites as compared to lipid and glycogen. Protein content in *Moniezia* is 13.50mg/gmwt of tissue, Lipid content in *Moniezia* is 09.50 mg/gm while Glycogen content *Moniezia* is 10.80 mg/100mlof solution.

5. Conclusion

From the above biochemical examinations we concluded that the protein percentage is higher in parasite as compared to lipid and glycogen parasites. These worm absorb most of nutrients from host andfulfill its regular growth needs and responsible for hindrance in the proper development of intestinal and body tissue (Jadhav et al., 2008).

Acknowledgements
The authors are thankful to the Principal, Nanasaheb Y. N. Chavan Arts, Science and Commerce College, Chalisgaon, Dist. Jalgaon, for laboratory facilities. And Principal, B. P. Arts, S. M. A. Science and K. K. C. Commerce College, Chalisgaon, for encouragement.

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