The Asian Journal of Animal Science (June to November, 2009), Vol. 4 Issue 1 : (77-78)

RESEARCH PAPER

Quantitative estimation of cholesterol in *Ascaridia galli* parasitizing in fowl

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Accepted : April, 2009

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ABSTRACT

Cholesterol represents a comparatively smaller portion of unsaponifiable lipid fraction (Ansari, 1973). It may occur either in free form or as esters. In helminthes the free form is usually more (Von Brnad, 1965). But in *A. lumbriocoides* , the reverse holds good. The estrified form of cholesterol in male is about 60% and in female 40% of total esters (Cole and Krusberg, 1967 a). metabolically the cholesterol is an important lipid fraction. Hence, present study deals with the quantification of cholesterol in *Ascaridia galli* from Nanded region (M.S.)

Key words : Quantification, Cholesterol, *Ascaridia galli*, Comestic fowl

Major hurdle in understanding the nature of parasitism is the occurrence of the helminth worms in various habitats Trematodes generally occur in four habitats like lever, intestine, lung and blood. Cestodes always invade only a single organ, the intestine but with regard to nematodes still there is a further complexity in there distribution with in a host as there is no organ in the body which is not invaded by round worms. In addition to this there are certain worms which are free living like soil nematodes. In view of a greater magnitude of round worm distribution, the study of nematodes requires the biochemical data of all the worms living in different habitats. Such study alone will give a better understanding of the various regions for parasitism. In spite of this data, nematodes pose another important problem that they are dioecious and the physiological and the biochemical activities of both male and female worms may or may not be different. Even, the different stages of nematodes which pass through different habitats during the life cycle, have to adapt their habitats by modifying their biochemical activities for the completion of life cycle and continuation in the race of survival.

In nematodes actual details or information with regard to its biosynthesis are not available to parasite. However, as studied by Thompson, (1960), it may be taken as to help the parasite in its parasitic mode life. The presence of cholesterol has been detected in several helminthes. The relevant references are those of Fairbairn and Jones, (1956), Cole and Krusburg, (1967 a, b), Barrett, (1970). Further the chemical nature of sterols has been worked out in *Ascaridia galli*, through in less detail, by Lopez-Gorge(1964). However, the available literature does not speak much about the content of cholesterol in helminthes. But in a nematode *Tanqua tiarn* it has been worked out by Bhosale, (1980).

Hence, as a first step in understanding the cholesterol content, its content has been determined in the both sexes of *Ascaridia galli* by the author in his present study.

MATERIALS AND METHODS

Cholesterol content was assayed by the method of Crawford, (1958).

Homogenates of male and female worms of approximately 100-200mg in weight were prepared in 3 to 4 ml of alcohol, ether mixture (3:1). After filtering the homogenates through fat-free filter paper,0.5ml of each of them was taken as sample. To the samples, obtained, 3ml of glacial acetic acid, followed by 2ml of color reagent were added. The blank with alcohol-ether mixture and standard, with pure dry cholesterol,(0.2mg/ml) were treated as samples simultaneously. The color developed in the samples and standard was read at 540mμ after half an hour, by adjusting the instrument to 0 with the blank.

The quantitative expression for cholesterol is μgms/ 100mg tissue.

RESULTS AND DISCUSSION

The values obtained from the cholesterol content in the worms of the present study are comparable with the value of *T.tiara* (Bhosale, 1980) but the trend in this worm is different form that of *A.galli*. in the former worm the male has higher content where as in the worm of the present study the female possesses comparatively higher content, which is like other parameters investigated

The results of the present study are shown in the Table 1. The cholesterol content, as per the table, in male female worm is 124.00±18.00 and 143.00±39.00 μgms/ 100mg tissue, respectively. The male to female ratio is 0.87, suggesting that its content infemale is about 13%