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RSEARCH PAPER

Determination of pyruvic acid of three nematodes from *Capra hircus*

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Pyruvic acid which is an end product of glycolysis (glycogen/ glucose/ or other sugars are converted into pyruvic acid in the cytoplasm) was estimated from the three economically important nematode parasites of *Capra hircus* (Linnaeus, 1758) *i.e. Oesophagostomum columbianum*, Curtice (1890), *Oesophagostomum asperum* Ralliet *et* Henry (1913) and *Bunostomum trigonocephalum,* Rudolphi (1808) which highly affect the host and ultimately the prosperity. Pyruvic acid is the core components in the energy sources for these parasites.

Biochemical investigation which is related to the chemical process and occurs in living form with the ultimate purpose of understanding cell role in molecular term. To understand the intricate mechanism and to stop the establishment of parasites within the host (*Capra hircus*), the biochemical investigation is very important.

The nematode parasites were collected, separated sexwise,washed and weighed. The weighed parasites were homogenized in distilled water with a mortar and pestle and made into a known quantity.2ml of the homogenate was ejected rapidly through a needle into 10 ml of 10% trichloroacetic acid solution in a centrifuge tube, stoppered and mixed well and centrifuged.3ml of the clear cold supernatant was pipetted out into a wide test tube and contents were warmed up to 25^0C to that 1ml of dinitrophenylehydrozone was added and allowed to react at room temperature for 5 minutes. The same procedure was carried out with dilute pyruvate standard solution preparing with dilute trichloro acetic acid and mixing with 2,4-dinitrophenylehydrozone. To each tube, 3ml of toluene was added and stream of air was passed through a narrow tube into the mixture for 2 minutes.

After the mixture settled, the lower layer was removed with a fine tipped dropper and discarded. To the remaining solution, 6 ml of 10 % sodium carbonate was added and mixed by passing bubbling air for 2 minutes. The mixture was allowed to settle .5ml of the aqueous layer (lower) was placed in a small tube and 5 ml of 1.5N sodium hydroxide solution was added and mixed .It was allowed to stand for 10 minutes. The colour developed was read at 520 mM (Carlzein's Jena Spectrophotometer) keeping the mixture of 5 ml of 10% sodium carbonate and 5 ml of 1.5 N sodium hydroxide solution as blank.

Calculation:

$$\frac{\text{Density of unknown}}{\text{Density of standard}} \times 1$$

= Mg of pyruvic acid per 100 ml of the homogenate.

The pyruvate concentration was expressed in mg of pyruvate per gram wet weight of the tissue of parasite.

In *Oesophagostomum columbianum* female has 2.79 per gram *i.e.* 0.27 % and in male parasite 1.24 mg per gram. The ratio between female and male was 1:2:1 and in *O. asperum* female has 0.81 mg per gram and male has 2.89 per gram. The ratio between female and male was 1:3:4; in *B.trigonocephalum,* female has 1.10 mg per gram and the male has 1.44 mg per gram, the ratio between the female and male of these three parasites was 1:1.2 (Table 1 and Fig. 1).