A SURVEY OF GASTROINTESTINAL PARASITES OF CERVUS UNICOLOR (SAMBAR) IN THE KATEPURNA SANCTUARY, AKOLA

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ABSTRACT

To study the prevalence of gastrointestinal parasites of *Cervus unicolor*, 35 faecal samples were collected from Katepurna Sanctuary during the period from February 2014 to April 2016. Twenty nine samples were found to be infected with gastrointestinal parasites and overall prevalence rate was 82.85%. *Paramphistomum* sp. (34.28%), *Ascaris* sp. (28.57%) *Fasciola* sp. (17.14%), stomach worm (17.14%), hook worm (14.28%), *Strongyloides* sp. (5.71%), *Balantidium coli* (5.71%) *Oesophagostomum* sp. (2.85%), *Eimeria* sp. (2.85%) & Mixed type of infections of Ascaris sp. Was found in 5 different scat samples or droppings.

Seasonal prevalence of gastrointestinal parasites in summer and winter were 80.01% and 17.3% respectively. This study provided a first overview on parasites in Sambar in the Katepurna Sanctuary, but to evaluate parasite transmission dynamics much more studies were required on livestock and on wild herbivores.

Keywords: *Cervus unicolor*, Fecal sample, Parasite, Scat analysis.

I. INTRODUCTION

The Katepurna Sanctuary in Akola, Maharashtra is an exotic sanctuary dotted with an abundance of flora and fauna. Positioned in Akola district in Vidarbha region of the state of Maharashtra, the sanctuary lies in close proximity to the catchments area of Katepurna reservoir (Mahan Dam). Its area is geographically located at - 20°25'0.54"N 77°10'50.14"E. The land vegetation at Katepurna Sanctuary is southern tropical dry deciduous forest. There are over 115 species of plants at this sanctuary such as Bihada, Dhawada, Moha, Tendu, Khair, Salai, Aola, Tendu, etc. Katepurna Wildlife Sanctuary is renowned for the four-horned antelope and barking deer. Other animals that can see at the sanctuary include Sambar, Black buck, Leopard, Wolf, Wild boar, Hyaena, Hare, Nilgai, Jungle cat and Monkeys. The Katepurna water reservoir attracts many water birds.

The sambar (*Cervus unicolor*) is a large deer native to the Indian subcontinent, southern China, and Southeast Asia that is listed as Vulnerable on the IUCN Red List since 2008. Populations have declined substantially due to severe hunting, insurgency, and industrial exploitation of habitat. The name "sambar" is also sometimes used to refer to the Philippine deer, called the "Philippine sambar" and the Javan rusa, called the "Sunda sambar" (Timmins 2015). Takatsuki (1986) have studied the food habits of Sika deer (*Cervus nippon*) on Mt Goyo, Northern Honshu (The main Island of Japan) and discussed the utilization of S. nipponica as a forage for Sika deer.

II. METHODS AND MATERIAL

The material for this study comprises the faecal samples of Sambar (*Cervus unicolor*), in and around Katepurna Sanctuary and also the

agricultural land. Periods of collection of material extends from February 2014 to April 2016. A total 35 faecal samples were screened for the study of parasitic infections.

Collection of Faecal Material/ droppings:

To determine the food habits, the faecal samples of Sambar (*Cervus unicolor*) were collected during study period or field visits. Faecal samples were collected in (Zip-log) polythene bags. Fresh samples were preferred for analysis. The polythene bags containing the faecal samples were labeled with date, time, locality. The bags were properly sealed and were brought to the laboratory. The size and shape of faecal pellets are also noted.

Droppings of *Cervus unicolor*

III. RESULTS AND DISCUSSION

Laboratory analysis of the samples for presence of any parasitic infection:

Every time half of the faecal sample was used for observation of any parasitic infection. It was washed in warm mammalian saline and then sieved through a fine mesh. The contents were centrifuged. The supernatant was discarded and the matter settled down was observed carefully under dissecting microscope and then through compound microscope.

Identification of the parasite:

The parasitic infections (Whole mounts, Eggs, Cysts) in the faecal sample were identified, separated with needle and their slides (Whole mounts) were prepared for using standard methods. Observations and identification was carried out by using standard keys and incidence was noted.

Evaluation of incidence :

During screening the different samples were examined as per their habitat and incidence of parasitic infections and their percentage were noted. Total percent of parasitic forms found in *Cervus* evaluated, overall percentage of parasitic infections of zoonotic importance.

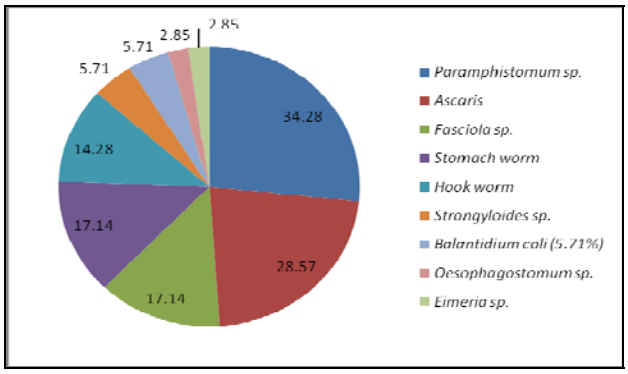
A. Figures and Tables

TABLE I

SHOWING DETAILS OF PARASITES FOUND IN SAMBAR (*CERVUS UNICOLOR*) AND THEIR INCIDENCE IN %

Sr. No	Name of Parasite	No	% occurrence
1	*Paramphistomum sp.*	*12*	*34.28*
2	*Ascaris*	*10*	*28.57*
3	*Fasciola sp.*	*6*	*17.14*
4	*Stomach worm*	*6*	*17.14*
5	*Hook worm*	*5*	*14.28*
6	*Strongyloides sp.*	*2*	*5.71*
7	*Balantidium coli (5.71%)*	*2*	*5.71*
8	*Oesophagostomum sp.*	*1*	*2.85*
9	*Eimeria sp.*	*1*	*2.85*

FIG 1: SHOWING INCIDENCE IN %



IV. CONCLUSION

From the above observations it is concluded out of the 35 faecal samples Twenty nine samples were found to be infected with gastrointestinal parasites and overall prevalence rate was 82.85%. *Paramphistomum* sp. (34.28%), *Ascaris* sp. (28.57%) *Fasciola* sp. (17.14%), stomach worm (17.14%), hook worm (14.28%), *Strongyloides* sp. (5.71%), *Balantidium coli* (5.71%) *Oesophagostomum* sp. (2.85%), *Eimeria* sp. (2.85%) & Mixed type of infections of Ascaris sp. was found in 5 different scat samples or droppings. As these animals are the part of food chain in the ecosystem, further necessary treatments should be opted for the healthy survival of the species in the protected area. Our study provides a first

overview on parasites in Sambar (*Cervus unicolor*) in the Katepurna Sanctuary and nearby agricultural land, but to evaluate parasite transmission dynamics, much more studies are required on livestock in the area and on wild So, further study may also be conducted to keep restores the ecological balance as well as to assess the losses on economic point of view, due to parasitic diseases of Sambar.

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