

A Preliminary Survey of Gastrointestinal Parasitism in Captive Herbivora of Sidhartha Municipal Zoo, Aurangabad

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Introduction

Zoological garden/park is the protected area for wild animal meant for captive breeding, to preserve ever diminishing endangered species. In nature, practically no animal is free from parasitism. When the parasitized animal is brought from wild to captivity, despite quarantine measures, the new condition of zoos is generally unfavorable for the animal but favourable to the parasites.

Although due care is ensured towards feeding, drinking and sanitary condition inside zoo, it is difficult to prevent or eliminate all parasite. Attempts should be made to identify these parasites for successful treatment and control of parasitic infection.

The present investigation was undertaken to know the prevalence and severity of gastro-intestinal parasitism in captive herbivores of Sidhartha Municipal Zoo, Aurangabad.

Material and methods

Random, fresh stool samples (27) were collected at random from 5 each of nilgai, deer, chinkara, sambar, chital and elephants. Examination of stool samples was immediately carried out by direct smear and flotation method as per the techniques of Thienpout (1929) and Georgi (1985).

The samples were examined for the presence of ova of different helminthic parasites. The stool samples were assessed to know severity of infection by estimating EPG (Eggs per Gram) level using Stoll's techniques. The results were then graded into 3 categories viz; below 500, between 500 and 1000 and more than 1000.

Results and discussion

Out of 27 samples examined, 21 (77.78%) were found positive for various parasitic infection. The sample of each species of herbivore was examined as a pooled sample. Among helminthic infection, 19 herbivores (90.47%) were found to be infected with nematode of one species only and 2 (9.52%) were found positive for infection with more than one species of nematodes (Table 1).

Parsani *et al* (2001) found 60% parasitic infection in various captive herbivora at Rajkot Zoo. In similar study, Chauhan *et al* (1973) found 100% parasitic infection in captive herbivores of Delhi and Lucknow Zoo,

Table 1. Species and parasite wise infection in captive herbivores

Name of Animal (Herbivore)	Number of Sample taken	Number of positive found	Type of endoparasitic infection		
			Cestode	Nematode	Trematode
Nilgai	05	05	-	<i>Trichostrongylus</i> spp	-
Deer	05	05	-	<i>Toxocara</i> spp and <i>Trichostrongylus</i> spp	-
Chinkara	05	02	-	<i>Toxocara</i> spp	-
Sambar	05	05	-	<i>Trichostrongylus</i> spp	-
Chital	05	02	-	<i>Trichostrongylus</i> spp	-
Elephant	02	02	-	<i>Oesophagostomum</i> spp	-

Table 2. Species wise EPG level in captive herbivores

Name of Animal (Herbivore)	Number of positive samples	EPG Level		
		< 500	> 500 but less than 1000	> 1000
Nilgai	05	400	900, 600, 700	1100
Deer	05	400	700, 600, 600, 500	-
Chinkara	02	300	500	-
Sambar	05	-	700, 600, 700, 900	1000
Chital	02	400, 300	-	-
Elephant	02	-	800	1100

respectively. Modi *et al* (1997) observed 48% parasitic infection in Bihar zoo in captive herbivore.

Severity of endoparasitic infection was assessed by calculating EPG level. Only 5 animals viz; Nilgai (1), Deer (1), Chinkara (1) and Chital (2) has EPG level below 500 while 13 animals viz; Nilgai(3), Deer (4), Chinkara (1), Sambar (4) and Elephant (1) has EPG level more than 500 but below 1000. Remaining 3 animals viz; Nilgai (1), Sambar (1) and Elephant (1) was found to have levels of EPG more than 1000 (Table 2).

EPG levels of 500 or more demands immediate treatment to the animals and is consider as severe parasitic infection. EPG level detection in various species of herbivore has not been attempted or cited in literature. In order to measure the severity of parasitic infection, EPG level is must and will be helpful in knowing the amount of infection animal is suffering from.

Conclusion

Parasitic infestations cause considerable morbidity and mortality in captive herbivore. Apart from death, especially in young animals, the animals tend to become weak and unthrifty with decreased resistance to other infection. Usually captive

animals do not show alarming sign of parasitism due to routine deworming practices carried out in zoo.

By adopting effective control measure to prevent the possible recurrence of existing infection, we may be able to curb the losses due to parasitic infection.

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