

## A NOTE ON GASTROINTESTINAL HELMINTH PARASITES OF CAMEL (*CAMELUS DROMEDARIUS*) IN EDAMER PROVINCE NAHR ELNILE STATE - SUDAN

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Received: 1/6/1997.

Accepted: 15/9/1997.

### SUMMARY

Thirty three fecal samples, and forty one camels were examined postmortem at Atbara slaughter house. Results revealed that 12 (36.4%) out of 33 fecal samples were positive for helminth ova, and 35 (85.4%) out of 41 camels harboured five helminth parasites. Out of the latter, 28 (80%) camels were infected with *Moniezia expansa*, 16 (45.7%) with *Haemonchus longistipes*, while 9 (25.7%), 7 (20%), and 3 (8.6%) were infected with *Strongyloides papillosus*, *Avitellina* spp, and *Stilesia* spp respectively. The results also indicated that 12 (34.3%) camels harboured single infection, 18 (51.4%) harboured double infection and 5 (14.3%) harboured triple infection. These findings are further discussed.

### INTRODUCTION

Camel (*Camelus dromedarius*) population in Nahr El-Nile State, Northern Sudan is estimated

at 122,400 (Anon, 1993). Most of this population is concentrated in the semi-arid northern area of the Butana region (Southern part of Nahr El-Nile State).

Information on diseases of camel in Nahr El-Nile State is meagre. The present preliminary investigation was an attempt to document the helminth parasites of camels as a part of an ongoing effort to survey disease problems of camels in this area.

### MATERIAL AND METHODS

Forty one camels (ranging in age between 1-12 years) were examined postmortem at Atbara slaughter house during the period August to December 1995. Fecal samples were also obtained at ante mortem from 33 of these animals.

Fecal samples were examined for ova of helminth parasites using the modified McMaster

egg counting method. At postmortem the gastrointestinal tract was searched for the presence of helminth parasites. Recorded parasites were then identified.

## RESULTS

Fecal examination conducted antemortem revealed the presence of helminth ova in 12 (36.4%) out of 33 samples examined. These include *Strongyle* ova (6 animals), *Strongyloides* spp (7 animals) and *Moniezia* spp (1 animal). However, 18 (85.7%) of the 21 animals that showed negative results on fecal examination were found to harbour helminth parasites on postmortem examination (Table 1).

Five different helminth parasites were recovered from the abomasi and small intestines of 35 (85.4%) out of 41 animals examined postmortem. Out of these 28 (80%) were infected with *Moniezia expansa*; 16 (45.7%) with *Haemonchus longistipes*, while 9 (25.7%), 7 (20%) and 3 (8.61%) were infected with *Strongyloides papillosus*, *Avitellina* spp, and *Stilesia* spp respectively (Table 2).

The results also revealed that 12 (34.2%) of the tested animals harboured a single parasite, 18 (51.4%) harboured two parasites, and only 5 (14.3%) were infected with three parasites (Table 3).

Worm count indicated that *S.papillosus* burden was the highest with a mean of 6419 worms/animal, while that of *Stilesia* spp was the

lowest (mean = 2.3 worms/animal). The average worm burden for other parasites was 162.4 worms for *H. longistipes*, 159 for *M. expansa*, and 4 for *Avitellina* spp. (Table 3).

## DISCUSSION

The only helminth parasites on record from camels in Northern states of the Sudan are *Haemonchus* spp and Hydatid cyst (Eisa et al., 1979; El-Hussein et al., 1991). The present study represents the first attempt at surveying helminth parasites of the alimentary tract of camels in this region.

The helminth parasites reported in the present study had at one time or another previously been recognized from camels in different regions of the Sudan (Steward, 1950; Malek, 1959; Eisa et al., 1979; and Elowni et al. 1986), but no detailed data were available to allow for meaningful comparisons. However, Malek (1959) reported much lower prevalence rates for *M. expansa* (5.9%), and *H. longistipes* (23.5%) in Khartoum province compared to the 80% and 45.7% prevalence rates reported for these two parasites respectively in our study. The same author also reported a much higher (70.5%) prevalence rate for *A. woodlandi* as compared to 20% found for *Avitellina* spp. in the present study.

While 85.4% of the camels were found to be infected at post mortem, only 36.4% of the fecal samples collected from these animals before slaughter revealed the presence of parasitic ova. This finding should be borne in mind when

TABLE (1)

Results of fecal egg counts examination

Type of ova	No. of animals	e.p.g fceces	
		Range	Average
<i>Strongyle spp</i>	6	100 - 2100	516
<i>Moniezia spp</i>	1	1100	1100
<i>Strongyloides spp</i>	7	100 - 5900	2028
No. parasite ova detected	21	-	-

TABLE (2)

Helminth parasites encountered in camels at postmortem examination

Parasite	No. of infected camels %	Worm burden/camel	
		Range	Mean
<i>Moniezia expansa</i>	28 (80%)	1 - 2000	159
<i>Haemonchus longistipes</i>	16 (45.7%)	3 - 750	162.4
<i>Strongyloides papillosus</i>	9 (25.7%)	30 - 17500	6419
<i>Avitellina spp</i>	7 (20%)	1 - 11	4
<i>Stilesia spp</i>	3 (8.6%)	1 - 4	2.3

TABLE (3)

Patterns of infection observed at post mortem examination of 35 camels

single infection			double infection			triple infection		
Parasite	No.	%	Parasite	No.	%	Parasite	No.	%
M	7	(20%)	M + H	6	(17.1%)	M + H + Str	2	(5.7%)
H	3	(8.6%)	M + Str.	5	(14.3%)	M + H + A	2	(5.7%)
A	1	(2.8%)	M + A	3	(8.6%)	M + H + Str + A	1	(2.8%)
Str.	1	(2.8%)	M + Still	2	(5.7%)			
			H + A	1	(2.8%)			
			H + Str.	1	(2.8%)			
Total	12	(34.3%)		18	(51.4%)		5	(14.3%)

M = *Moniezia expansa*H = *Haemonchus longistipes*Str. = *Strongyloides papillosus*A = *Avitellina* sppStill. = *Stilesia* spp

conducting parasitologic surveys based on coprological examination. Camels that were proved to be infected only at postmortem examination will most likely shed parasitic ova at some point in the future. This implies that coprological surveys have to be time framed in order to arrive at valid conclusions regarding the natural history of camel helminthosis. The survey reported in this study was conducted during the month of August to December, more or less after the end of the rainy season. It would be beneficial to compare these findings with similar surveys conducted throughout the year or during the hot dry season (March to July) which also include the period (June-July) of highest helminth transmission in the Butana region. (Agab, 1993).

#### ACKNOWLEDGMENT:

The authors would like to thank Dr. A.Y. Osman and Dr. B. Abbas for reading the manuscript.

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