

Research Paper

Prevalence of *Trypanosoma evansi* in Camels slaughtered at Sokoto metropolitan abattoir

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Blood samples collected from one hundred camel of between 5-20 years of age comprising of males and females presented for slaughter at Sokoto metropolitan abattoir were examined for presence of *Trypanosoma evansi*, and examined using blood procedures such as wet blood smear, thin blood, thick blood smear and buffy coat film. The blood was collected by venous puncture and blood collected into EDTA bottles. Analysis of the blood sample collected was carried out in the laboratory techniques mention above. Nine (9) samples were found to be positive, as such the camels brought for slaughter in Sokoto

metropolitan abattoir showed a very low prevalence of *Trypanosoma evansi*. Despite the low prevalence there is need to carry out further research in order to establish the true prevalence of the disease using more current methods of diagnosis especially the molecular form of diagnosis as this will aid in effective way of controlling the diseases.

Keyword: Blood sample, Prevalence, *Trypanosoma evansi*, Surra, Sokoto

INTRODUCTION

Trypanosoma evansi is a long slender *Trypanosome* with prominent undulating membrane and long, free flagellum; it is morphologically identical to other members of sub-genus *Trypanosoma evansi*. *Trypanosoma evansi* causes a disease condition called 'Surra'. It affects a number of domesticated animal's species in Asia, Africa and Central and South America. The efficacy of transmission depends on the interval between a fly feeding and infected host and moving to a clean host (Luckins, 1992). However, the aggressive feeding behavior of *Tabanus* spp. involves many attempts at feelings and single fly can infect more than one host (Luckins, 1989). The prevalence of the infection among camel herds is related to the size of the vector population. Camel is a sub Saharan and Saharan animal, commonly found in the northern region of Nigeria like Sokoto, Borno, Kano, Jigawa and Bauchi serve a socio-economic importance that go beyond transport, meat, milk and skin source to local industries (Puavenu and Arunsi, 2011). It is of utmost important in Sokoto because

at least one third of its populace especially the poor depend on its flesh for protein source, this is because camel meat is cheaper than beef (Retwatker *et al.*, 2009).

Khanna, (1990) has shown that drought animal power is of great importance throughout the developing countries. Camel can travel long distance on sandy stretches carrying man and material and provide bio-energy for agricultural operation (Al Haj and Al Kanhai, 2010). It is versatile working animal suitable for riding, load carrying and many type of traction work (Tukur and Maigandi, 1999). Camels are used to convey farm product over short or long distances. They are also used in cultivation of land through pulling of local harrows and disc ploughs. Jasra and Aujla, (2000) also reported that the main stay of a nomad's food is camel's milk. It is consumed fresh or just soured. Hairs are used for making ropes, bags, ropes, carpets, mat and blanket saddles. Camels are affected by different parasites of which *Trypanosoma evansi* is an important protozoa that affects camels (Parsani *et al.*, 2008). The objective of this study

is to examine the prevalence of *Trypanosoma evansi* in camels slaughtered at Sokoto metropolitan abattoir.

MATERIALS AND METHODS

Blood samples were collected from the jugular epigastric prominent veins into EDTA sample bottles. The specimens were then immediately transported to the laboratory of Veterinary Parasitology and Entomology, Usmanu Danfodiyo University, Sokoto, Nigeria for examination of haemoparasites using traditional method for diagnosis of *Trypanosoma evansi*. Wet mount, thin blood smear, thick blood smear and buffy coat techniques stained with Giemsa were conducted. Slides were observed under oil immersion at magnification of 100X objective of a light microscope.

RESULTS and DISCUSSION

Results on the prevalence of *Trypanosoma evansi* in camels in Sokoto and environs, is shown in the (Tables 1-4). The results indicates the total number of camels that have been examined to be infected in which 52 camels were found to be males while 48 camels were females. Out of the one hundred (100) camels, only nine (9) were found to be positive. Camels of 5-10 years of age were examined in the study. The table above shows that the number of camels that were examined with their corresponding PCV values, different sex and different observed clinical signs of infection (Table 4).

This study has shown that there is significant difference at various level of blood picture for positive and negative camels in both sexes. Camels at 10-20 years were highly susceptible to *Trypanosoma evansi* while

Table 1. Overall prevalence of *T. evansi* infection in slaughtered camels in Sokoto.

Number of Samples	Sex	Age range (Years)	No. Positive	No. Negative	Range of PCV (%)
100	M F 54 46	5-20	9	91	16-41

Table 2. Prevalence of *T. evansi* infection and age classification of camels slaughtered at Sokoto Abattoir.

Age range (years)	No. of camels	Female	Male	Positive	Negative
1-5	7	2	5	0	7
6-10	44	21	23	5	39
11-15	30	13	17	4	26
16-20	19	10	9	0	19
Total	100	46	54	9	91

Table 3. Range of packed cell volume (PCV) of camels that are examined.

Range of PCV %	No. of camel	Male	Female	Positive	Negative
15-20	21	8	13	3	18
21-25	33	12	21	4	29
26-30	24	19	5	2	22
31-40	15	8	7	0	7
41-45	7	5	2	0	7
TOTAL	100	52	48	9	91

Table 4. Observed clinical signs of selected infected camels at Sokoto Abattoir.

Male	Female	Age (years)	PCV (%)	Clinical Signs
M	-	10	22	Bilateral nasal discharge
M	-	10	24	Emaciation
-	F	13	15	Diarrhoea
M	-	15	16	Dehydrated
M	-	14	23	Dehydrated
-	F	12	24	Dull/ dehydrated
M	-	13	29	Weak recumbent
M	-	11	25	Tick infestation
-	F	20	32	

camels from 1-5 years of age were less susceptible to the same infection. These suggest that younger stock are observed to be resistant to *Trypanosoma evansi* infection as previously documented (Fiennes, 1970). The clinical signs however were observed before slaughter in only 8 camels as highlighted in (Table 4). Based on the results of the present study, it is indicated that the number of infected camels are seen more in the male than in the female, which could be probably because male camels are mostly brought for slaughter in the abattoir compared to the female which are kept for reproduction. This study have confirmed that as several researchers have reported prevalence of *trypanosoma evansi* in camels (Parsani *et al.*, 2008; Retwatker *et al.*, 2009; Puaveno and Arunsi, 2011) brought for slaughter, this is true as far as Sokoto abattoir is concerned. This necessitate further research in the study area in order to establish the true prevalence of the disease using other methods especially through molecular detection techniques which is most sensitive and specific than the conventional methods of laboratory diagnosis.

Conclusion

Despite report of low prevalence *Trypanosoma evansi* infection in the study area, concern should also be given generally to camels not only to those meant for slaughter at the State main Abattoir.

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