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Prevalence of Trypanosomosis in Small Ruminants at Slaughter in Jos, Plateau State, Nigeria

A. A. Adeyeye[*1], F. A. Olajide[2], E. K. Nkwelle-Wang[3] and R. K. Adeyeye[3]

[1]Department of Veterinary Medicine, Surgery and Theriogenology, Faculty of Veterinary Medicine, Usmanu Danfodio University, Sokoto, Nigeria;
[2]Department of Veterinary Physiology and Biochemistry, Faculty of Veterinary Medicine, University of Abuja, Abuja, Nigeria
and [3]Federal College of Veterinary and Medical Laboratory Technology, National Veterinary Research Institute, Vom, Nigeria

ABSTRACT
The prevalence of Trypanosoma infection in indigenous breeds of small ruminants at slaughter in Jos was studied from 680 blood samples collected from 300 sheep and 380 goats from December 1999 to May 2000. 8(2.67%) sheep and 4(1.05%) goats were positive for *trypanosoma* infection. *Trypanosoma vivax* and *T. congolense* were respectively responsible for 75% and 25% of the infection in each animal specie. It is, therefore suggested that the epidemiology of trypanosomosis in small ruminants be taken more seriously and the animals be subjected to strict veterinary supervision.

Key words: Trypanosomosis, sheep, goat, abattoir, Jos, Nigeria

INTRODUCTION
Trypanosomosis is caused by *trypanosomes* which are blood parasites of Vertebrates (Ukoli, 1984). It is a disease of man and animals of economic importance in tropical areas of the world and remains one of the major diseases limiting growth of livestock industry in Nigeria and indeed tropical Africa (Leeflang, 1978). The disease is transmitted by tsetse-fly vector (Duggan, 1962) either cyclically (Stephen, 1970) or mechanically (Thomas and Lanborn, 1934; Dixon *et al.,* 1971) although other less important modes of transmission exist. Trypanosomosis occurs wherever tsetse flies are prevalent but may also be transmitted mechanically by other haematophagous flies (Weitz, 1970).

Laboratory and field study of animal trypanosomosis have tended to concentrate on cattle (Murray *et al*., 1977; Leeflang 1978) since the disease in small ruminants is viewed as unimportant especially in West Africa (Kalu *et al.,* 1986). However, available evidence on the epidemiology of the disease in Nigeria, (Krammer, 1966; Joshua and Ige, 1982; Kalu and Agu, 1984; Daniel *et al.,* 1994; Kalu and Lawani 1996) and other parts of Africa (Griffin and Allonby, 1979; Ahmadu *et al.,* 2002) indicated that not only are infection rates high, serious losses result from naturally acquired caprine and ovine infection. Records on the study of trypanosomosis in small ruminants in Nigeria are few and disjointed (Joshua and Ige, 1982; Kalu and Magaji, 1986; Fakae and Chiejina, 1993, Adah *et al.,* 1993; Daniel *et al.,* 1994; Kalu and Lawani, 1996; Dadah *et al.,* 1997; Akinwale *et al.,* 2006).

This study is therefore aimed at investigating the prevalence of trypanosomosis among sheep and goats at slaughter in Jos central abattoir and documenting the most prevalent *Trypanosoma* specie in the study area. Abattoir sampling though associated with low incidence rate still provide an idea on the disease situation.

MATERIALS AND METHODS

Animals
Most of the animals sampled are not reared in Jos but are purchased from various parts of northern Nigeria especially Borno, Yobe, Sokoto and Kano states. They are indigenous breeds of sheep and goats, which are never

[*]Author for correspondence; *E-mail:* ayo4wale@yahoo.com

held in Jos for more than two weeks before they are slaughtered.

Sample collection

Five millilitres of blood was collected once a week between December 1999 and May 2000 from each animal at slaughter into clean Bijou bottles containing ethylene diamine tetra-acetic acid (EDTA) as anticoagulant. The bottles were gently tilted to ensure proper mixing of blood and anticoagulant. They were labeled and kept in cooler containing ice packs and transported to the laboratory for processing.

Data analysis

The blood samples were analyzed for *trypanosomes* at the Parasitology Department of the National Veterinary Research Institute Vom, Plateau state, Nigeria using the haematocrit centrifugation technique (HCT), wet blood film (WBF), thin blood film and thick blood film (Woo, 1970; Kalu *et al.,* 1986). Identification of *Trypanosoma* specie was done using morphological differentiation of parasites on Giemsa-stained films as described by Murray *et al.* (1977).

Sample analysis

Data generated were analyzed using descriptive statistics such as percentage and frequency (Gomez and Gomez, 1984)

RESULTS

The prevalence of *Trypanosoma* species in sheep at slaughter within the study period is presented in Table 1. A total of three hundred (300) samples were examined out of which 8(2.67%) were positive for trypanosomosis, this represents 6(75%) and 2(25%) of *Trypanosoma vivax* and *T. congolense,* respectively. The prevalence in goats within the same period is presented in Table 2. Three hundred and eighty (380) blood samples were taken out of which 4(1.05%) were positive for trypanosomosis 3(75%) were *Trypanosoma vivax* while 1(25%) was *T. congolense*.

Table 1. Prevalence of trypanosome infection among sheep at slaughter at the Jos Central Abattoir, Nigeria

Months	No. examined	No. positive	Prevalence rate (%)	*Trypanosoma* species	
				T. vivax	*T. congolense*
December	50	-	-	-	-
January	50	-	-	-	-
February	50	-	-	-	-
March	50	1	2.00	1	-
April	50	2	4.00	1	1
May	50	5	10.00	4	1
Total	300	8	2.67	6 (75%)	2 (25%)

Table 2. Prevalence of *trypanosome* infection among Goats at slaughter at the Jos Central abattoir, Nigeria

Months	No. examined	No. positive	Prevalence rate (%)	*Trypanosoma* species	
				T. vivax	*T. congolense*
December	50	-	-	-	-
January	70	-	-	-	-
February	70	-	-	-	-
March	50	1	2.00	1	-
April	70	1	1.43	-	1
May	70	2	2.86	2	-
Total	380	4	1.05	3 (75%)	1 (25%)

DISCUSSION AND CONCLUSION

The result of this study showed a prevalence of 2.67% and 1.05% in sheep and goats respectively. This is similar to the reports of Daniel *et al,* (1994) in Gombe State and that of Kalu and Lawani (1996) in Kano State as well as Dadah *et al.* (1997) in Plateau State but lower than the earlier report of Joshua and Ige (1982) in goats in Plateau State, all in Northern Nigeria probably due to the period of study. The presence of *Trypanosoma vivax* and *T. congolense* further confirmed that this species occur in sheep and goats as earlier reported (Joshua and Ige, 1982; Kalu and Magaji, 1986; Dadah *et al.,* 1997). This study shows that trypanosomosis was first encountered in March which probably resulted from the onset of the rains since higher prevalence of the disease have been reported to be associated with the rainy season (Griffin and Allonby, 1979; Kalu and Lawani, 1996). The highest prevalence was recorded in the month of May which is similar to the reports of Joshua and Ige (1982). *Trypanosoma vivax* was the dominant trypanosome species encountered in this study, it accounted for 75% of all trypanosomosis recorded. This may be attributed to the fact that *T. vivax* can be transmitted in the absence of tsetse fly by haematophagous flies.

It is therefore suggested that the epidemiology of trypanosomosis in small ruminants be taken more seriously despite the low prevalence rate recorded. Apart from this, sheep and goats should be subjected to veterinary supervision and be included in the chemotherapeutic and prophylactic campaign programmes of government and herd owners.

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