

Trypanosomosis among sheep and goats at slaughter in Jos abattoir, Nigeria

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Key words

Yankasa sheep - Red Sokoto goat - *Trypanosoma vivax* - *Trypanosoma congolense* - Trypanosomosis - Season - Nigeria.

Summary

The prevalence of trypanosomosis in Yankasa sheep and Red Sokoto goats was studied by blood examination at the municipal abattoir of Jos, Central Nigeria, during the months of March-August, 1990. Blood samples were collected from 522 sheep and 601 goats and examined by buffy coat and stained smear methods. Twenty (3.83%) sheep and eleven (1.83%) goats were infected with trypanosomes. *Trypanosoma vivax* and *Trypanosoma congolense* were the only trypanosomes encountered in the study. *T. vivax* was found in 15 (2.87%) and 7 (1.16%) of the sheep and goats, respectively. *T. congolense* was found in 5 (0.97%) and 4 (0.67%) of the sheep and goats, respectively. The infection was higher during the wet season than during the dry season, but the difference was not statistically significant ($P < 0.05$). It is desirable that sheep and goats be included in any therapeutic or prophylactic programme for trypanosomosis control.

INTRODUCTION

Small ruminants represent a considerable investment of many Nigerian families for the supply of much needed manure for field crops and also as a supplement to beef (5). Trypanosomosis of these animals can thus result in human malnutrition. Natural ovine and caprine trypanosomosis have been little investigated. Laboratory and field studies of animal trypanosomosis have focused more on cattle since the disease in small ruminants is viewed as unimportant (6). They are therefore not usually subjected to veterinary supervision or included in therapeutic and prophylactic campaigns of government and herd owners (7). Hence, they remain infected unless self-cure intervenes.

The aim of this work was to assess the prevalence of trypanosomosis in slaughter sheep and goats in the Jos abattoir.

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MATERIALS AND METHODS

Sheep and goats

The sheep and goats sampled in this survey were not reared on the Jos Plateau. They were purchased from the extreme northern parts of Nigeria (Borno, Kano and Sokoto States). They were then transported in trailers by road to the Jos cattle market and were usually not held in the market for more than two weeks before slaughter.

Sample collection and analysis

A total of 522 sheep and 601 goats were screened using the standard trypanosome detection method (STDM) and concentration methods (6, 9). Approximately 5 ml of blood were collected from each animal by jugular venipuncture into bijoux bottles containing EDTA as anticoagulant. Identification of trypanosome species was done using morphological differentiation of parasites on Giemsa-stained films and animal inoculation (7).

■ RESULTS

Out of 522 sheep examined, 20 (3.83%) were found to be infected with trypanosomes (table I). From the 20 positive cases, 15 (75%) were due to *T. vivax* and 5 (25%) to *T. congolense*.

Out of 601 goats examined, 11 (1.83%) were found to be infected with trypanosomes (table II). From the 11 positive cases, 7 (64%) were due to *T. vivax* and 4 (36%) to *T. congolense*. The monthly prevalence and distribution of the different trypanosome species encountered are presented in these tables. *Anaplasma ovis* was the only other haemoparasite encountered in a goat in the course of the study, in May.

■ DISCUSSION

This study findings corroborate the work of Joshua and Ige (5) who recorded an overall prevalence rate of 3.84% among Red Sokoto goats examined at slaughter and a monthly rate of up to 10% in June. The higher infection rate could be due to increased host-fly contacts as the hosts searched for pasture and water in the

dry months of the year (November-May) (4). On the contrary, the decline from July could result from the arrival of rains, when pasture and water are abundant, hence improving the nutritional status of the animals and lessening host-fly contacts.

The results confirm reports that *T. vivax* and *T. congolense* occur naturally in sheep and goats (5, 7). It also supports the work of Kalu and Magaji (6) who found that *T. vivax* was the most important species infecting ruminants. The difference in the prevalence rates of 3.83% in sheep and 1.83% in goats was not statistically significant ($P < 0.05$). Trypanosomosis is obviously much less common in sheep and goats as compared to cattle where rates up to 70% have sometimes been reported (1, 2, 3).

■ CONCLUSION

From this study findings, it is imperative that trypanosomosis of sheep and goats be taken more seriously. The disease may be more common and severe than what was previously acknowledged. Sheep and goats should therefore be included in chemotherapeutic and prophylactic programmes so that they do not become reservoirs of the infection for their bovine counterparts, considered to be economically more important, and because they contribute to about 35% of the meat supply in Nigeria (8).

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Table I

Prevalence of trypanosomosis among sheep during different months of the year

Month	Num. examined	Num. positive	% positive	<i>T. vivax</i>	<i>T. congolense</i>
March	84	-	-	-	-
April	78	3	3.84	2	1
May	81	4	4.94	3	1
June	90	8	8.90	7	1
July	85	3	3.53	2	1
August	105	2	1.90	1	1
Total	522	20	3.83	15	5

Table II

Prevalence of trypanosomosis among goats during different months of the year

Month	Num. examined	Num. positive	% positive	<i>T. vivax</i>	<i>T. congolense</i>
March	133	-	-	-	-
April	98	1	1.02	1	-
May	87	1	1.15	-	1
June	97	7	7.22	5	2
July	83	1	1.20	1	-
August	103	1	0.97	-	1
Total	601	11	1.83	7	4

Résumé

Dadah A.J., Duhlinska-Popova D.D., Daniel A.D., Dede P.M. Trypanosomose chez des moutons et des chèvres après abattage à l'abattoir de Jos, Nigeria

La prévalence de la trypanosomose chez le mouton Yankasa et la chèvre Red Sokoto (chèvre de Maradi) a été étudiée par des tests sanguins à l'abattoir de Jos, au Centre du Nigeria, pendant les mois de mars à août 1990. Des échantillons sanguins ont été prélevés sur 522 moutons et 601 chèvres et examinés par la technique du *buffy coat* et des frottis colorés. Vingt moutons (3,83 p. 100) et 11 chèvres (1,83 p. 100) étaient infectés par des trypanosomes. *Trypanosoma vivax* et *Trypanosoma congolense* étaient les seuls trypanosomes rencontrés dans cette étude. *T. vivax* était présent chez 15 moutons (2,87 p. 100) et chez 7 chèvres (1,16 p. 100). *T. congolense* était présent chez 5 moutons (0,97 p. 100) et 4 chèvres (0,67 p. 100). L'infection était plus importante pendant la saison humide que pendant la saison sèche mais la différence n'était pas significative statistiquement ($P < 0,05$). Il serait souhaitable que les moutons et les chèvres soient inclus dans tout programme de mesures prophylactiques ou thérapeutiques lors de la lutte contre les trypanosomoses.

Mots-clés : Ovin - Caprin - Mouton Yankasa - Chèvre de Maradi - *Trypanosoma vivax* - *Trypanosoma congolense* - Trypanosomose - Saison - Nigeria.

Resumen

Dadah A.J., Duhlinska-Popova D.D., Daniel A.D., Dede P.M. Tripanosomosis en ovejas y cabras de matadero en el matadero de Jos, Nigeria

Se estudió la prevalencia de tripanosomosis en ovejas Yankasa y cabras Sokoto rojas, mediante exámenes sanguíneos en el matadero municipal de Jos, Nigeria Central, durante los meses de marzo a agosto 1990. Las muestras sanguíneas fueron recolectadas en 522 ovejas y 601 cabras y examinadas mediante «buffy coat» y frotis. Veinte (3,83%) de las ovejas y 11 (1,83%) de las cabras examinadas estaban infectadas con tripanosomas. *Trypanosoma vivax* y *T. congolense* fueron los únicos tripanosomas encontrados en el estudio. *T. vivax* se encontró en 15 (2,87%) y 7 (1,16%) de las ovejas y cabras respectivamente. *T. congolense* se encontró en 5 (0,97%) y 4 (0,67%) de las ovejas y cabras respectivamente. La infección es comparativamente más elevada durante la estación húmeda que durante la estación seca. Sin embargo la diferencia no fue estadísticamente significativa ($P < 0,05$). Es recomendable que las ovejas y cabras sean incluidas en los programas terapéuticos o profilácticos contra tripanosomosis.

Palabras clave: Ovino - Caprino - Carnero Yankasa - Cabra de Maradi - *Trypanosoma vivax* - *Trypanosoma congolense* - Tripanosomosis - Estación del año - Nigeria.