

MONIEZIASIS IN SHEEP IN JALINGO, TARABA STATE, NIGERIA

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ABSTRACT

Monieziasis is a disease caused by Moniezia species. Common species of Moniezia found in sheep are M. expansa and M. benedeni. The study objective was to investigate the status of ovine Monieziasis in Jalingo, Taraba state. Faecal samples from a total of 310 randomly selected sheep of both sexes and different ages were examined for Moniezia species using floatation technique. Of the 310 sheep examined, the prevalence of Moniezia infection was found to be 5.8 % (18/310). Prevalence was higher in females (7.6%) than males (3.9%). Age based prevalence of Moniezia was recorded among sheep of diverse ages and the highest prevalence (8.7%) was observed in adult sheep. Finally, findings from the present study indicated that Monieziasis is a moderately prevalent disease of sheep in Jalingo. Livestock farmers are advised to employ regular deworming, proper husbandry and strategic management practices. Reducing exposure to pasture mites during grazing is also very effective.

KEYWORDS: Moniezia, cestode, parasites, prevalence, pasture mites, Jalingo, Taraba, Nigeria.

INTRODUCTION

Monieziasis is a gastrointestinal disease caused by the segmented intestinal tapeworm, *Moniezia* spp. *Moniezia* is also called sheep tape worm or double pored tape worm [5]. The Anoplocephalid cestode belongs to the order of Cyclophyllidea, which is characterized by the absence of hooks and rostellum [4]. *Moniezia* spp. requires pasture mites as an intermediate host to complete its life cycle [14]. The genera of the mites important to the life cycle of *Moniezia* spp. are *Oribatula* and *Scheloribates* [19]. The triangular and tetragonal eggs of *Moniezia expansa* and *Moniezia benedeni* respectively, which are ingested by the mites, will develop into an infective larval stage known as cysticeroids in 6 to 16 weeks [8].

The presence of *Moniezia* species (spp) in ruminants can negatively affect their productivity. Lambs show high susceptibility to infection with *Moniezia* spp and massive infection with *Moniezia* causes diarrhea, anorexia and reduced weight gain [6]. Also, it causes gastrointestinal disorders and subsequent death in sheep [24]. So, it constitutes a big problem in sheep raising countries [10]. Point diagnosis of *Moniezia* infection is based on fecal flotation technique, clinical signs and showing movable proglottids in the faeces. It could be treated by using broad spectrum anthelmintic including praziquantel but control of the infection requires a comprehensive knowledge of the epidemiologic and ecologic factors that govern pasture larval populations [23]. Therefore, this study was undertaken to investigate the status of *Monieziasis* in sheep in Jalingo Local Government of Taraba state along with associated risk factors.

MATERIALS AND METHOD

Study population

This study was conducted in Jalingo local government area. Jalingo is among the sixteen (16) local government areas in Taraba state. It is located along longitude 11.3N and latitude 8.95E. Jalingo is bounded by Lau local government area in the north, Yorro local government area at the southeast and Ardo-kola local government area at the southwest. Jalingo local government has annual rainfall of 1,260mm with annual temperature of 29.7°C in the rainy season while 35-45°C in dry season. The vegetation of Jalingo falls within the New Guinea ecological zone characterized by short grass interspersed with conditions which are mostly of economically value [17].

Fecal sample and data collection

Individual animal was properly restrained. Faecal samples were collected per rectum of individual animals using gloved fingers. Small quantities of the faeces was scooped out and rolled over the polythene bag. Information like sex and age of the sheep were recorded at the point of sample collection. The samples were appropriately labelled and transported to the Parasitology Laboratory of College of Agriculture, Science and Technology Jalingo in an ice pack container. Flotation technique was employed to assess presence of *Moniezia* eggs as described by [13].

DATA ANALYSIS

Data collected were subjected to statistical analysis and represented in tables. Simple percentages were used to calculate the number of positive against negative.

RESULTS

Table 1 showed the overall prevalence of Monieziasis in sheep in Jalingo. Out of 310 samples collected from sheep in the study area and examined microscopically for the presence or absence of *Moniezia* parasites, 18 (5.8%) were positive.

Table 2 showed the prevalence of Monieziasis in sheep in Jalingo in relation to sex. 310 samples were obtained in the study area comprising of 152 samples from male and 158 from females. In rams, (3.9%) 6/152 samples were found to be positive and (7.6%) 12/125 samples were found to be positive from the ewes. Therefore, ewes had a higher prevalence when compared to the rams.

Table 3 showed the prevalence of Monieziasis in sheep in Jalingo in relation to age. 310 samples were obtained in the study area comprising of 150 samples from adults and 160 from the young. In the samples collected from adults, (8.7%) 13/150 were found to be positive and (3.1%) 5/160 was found to be positive from the young. Adult animals therefore had higher prevalence when compared to the young.

Table 1 showing the overall prevalence of Monieziasis in sheep in Jalingo LGA, Taraba state.

No. of samples collected	No. of positive	Prevalence
310	18	5.8%

Table 2 showing the prevalence of Monieziasis in sheep in Jalingo LGA, Taraba state based on sex of sheep.

Sex	No. Of samples collected	No. Of positive	Prevalence
Male	152	06	3.9%
Female	158	12	7.6%
Total	310	18	5.8%

Table 3 showing the prevalence of Monieziasis in sheep in Jalingo LGA, Taraba state based on age of sheep.

Age	No. Of samples collected	No. Of positive	Prevalence
Adult	150	13	8.7%
Young	160	05	3.1%
Total	310	18	5.8%

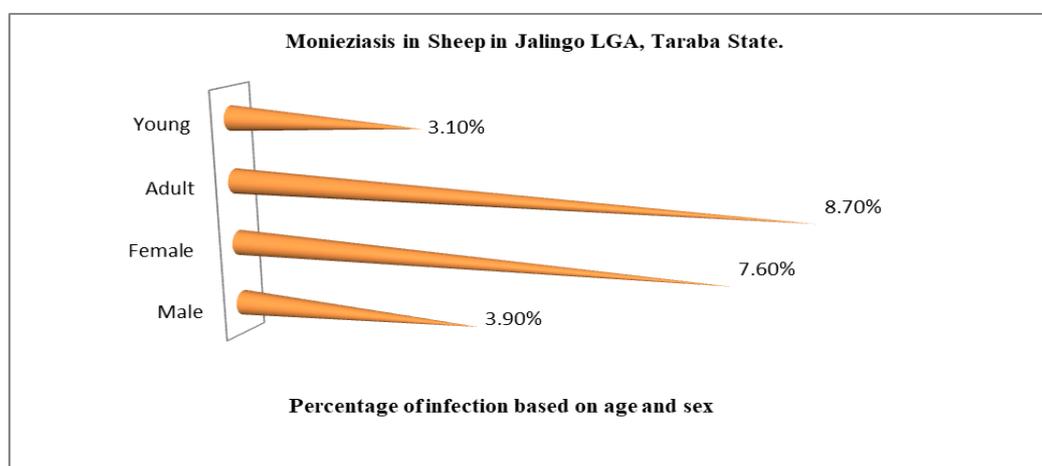


Figure 1. Total infection rates of Monieziasis in sampled animals in Jalingo LGA, Taraba state.

DISCUSSION

Chemotherapy in endemic areas, assessment of morbidity and the evaluation of control strategy, all can be built on the result from diagnostic test [16]. Tapeworms that infect animals are considered as one of the biggest problems of the current century. This is because of the diseases they cause and the great economic losses that result from it. Therefore, this study was conducted to investigate the point prevalence of Monieziasis in ovine in Jalingo Local Government Area, Taraba State, Nigeria. Moniezia positive samples from the total submitted samples in Jalingo Local Government Area gave an overall prevalence of 5.8%. The prevalence from this study is quite low when compared with 6.8% from reports by [7] in Niger state, 8.21% by [20] at Shewa Zone of Oromia state, Central Ethiopia and 14% by [3] in west Indies but high when compared to the recorded prevalence of 0.26%

Moniezia infection in sheep from reports by [15] in Gondar town, northwest Brazil, 3.8% by [18] in Sherpur, Bangladesh and 4% by [12] in Kano central abattoir, Northern Nigeria. The variation in prevalence might be due to difference in sample size, locations covered, environmental factors, epidemiological factors, climatic conditions and animal management practices.

The present study showed the prevalence in rams to be (3.9%) and Ewes (7.6%) which showed the females had the highest prevalence in relation to the males. The prevalence in terms of sex group in the study agreed with reports from [1] in Bokkos, Plateau state with 3% prevalence in female and 1% in males. Reports by [11] with prevalence of 66% in females and 51.2% in males in central Ethiopia also corroborates this fact. The reason for high prevalence of Moniezia species infection in the females can be assumed to be due to difference in susceptibility owing to hormonal effects and genetic predisposition. It could also be linked to stress stemming from gestation and lactation and insufficient feed supplements which are absolutely needed for reproductive activities. These factors could aggravate the infection and thereby favor the egg output of parasites [2]. The aforementioned parameters can suppress immune status of females and thereby increase Moniezia infection rates in the case of females than the males. Female (Ewes) mostly go out for grazing due to increased physiological demand for feed and might likely get in contact with pasture mites which live freely in grass or soil and this increase the chances of being infected.

The prevalence was high in adults (13%) than the young (5%) in this study. High prevalence rates observed in Sheep than lambs are in consonance with the reports of various works such as [21] with 82.4% in adult sheep versus 65.8% in young and [9] reporting 28.7% in adults and 2.1% in young sheep. However, studies by [22] reported lower Moniezia prevalence in adults than young sheep which disagreed with our report. The reason behind this low infection in young than adult sheep might be associated with maternal immunity attained by very young animals and less exposure of young sheep to the parasite than adult. Lambs do not travel long distance to get their food and results in little chance of exposure to contaminated pasture.

CONCLUSION

Monieziasis was found as an important parasitic disease of sheep in present study area. In this cross-sectional study, an infection rate of 5.8% was recorded using fecal examination by flotation technique. Different risk factors namely sex and age are found to affect the

occurrence of the disease in sheep. Female sheep had higher prevalence in relation to the male while adult sheep had higher prevalence than the lambs. There is the need to educate and encourage livestock farmers in Jalingo to adopt routine and responsible use of anthelmintics to safeguard animal health for improved productivity.

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CONFLICT OF INTEREST

There were no conflicting interests among the authors of this work.

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