

*Short Communication*

## THE PREVALENCE OF PARASITIC INFECTIONS IN BILE OF CATTLE SLAUGHTERED IN JOS ABATTOIR, PLATEAU STATE, NIGERIA

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**ABSTRACT**

A study of the parasitic infections occurring in cattle's were carried out in Jos Abattoir during the onset of rain within the months of May and June to determine the prevalence of the eggs of helminth parasites in the bile. A total of 515 cattle were examined for the infection. Two genera of helminths: *Fasciola gigantica* and *Dicrocoelium hospes* eggs with prevalence rates of 20(3.88%) and 115(22.33%) were seen respectively. There were mixed infections of both helminth parasites which occurred in 27(5.24%). Out of 402 cows, 93(23.13%) were found to be infected by *D. hospes* and 15(3.73%) by *F. gigantica*. Out of 113 bulls examined 22(19.47%) were found to be infected by *D. hospes* and 5(4.43%) by *F. gigantica*. Mixed helminth infections occurred in 20(4.98%) of the 402 cows and 7(6.20%) of the 113 bulls examined. There was no significant difference ( $P>0.05$ ) of the infection rates between the younger and older cattle.

**KEY WORDS:** Parasitic infection, helminthes, *Fasciola gigantica*, *Dicrocoelium hospes*, prevalence.

**INTRODUCTION**

Cattle whose meat serves as a source of animal protein for a large population of people worldwide are often infested by certain helminth parasites. The consequence of this is a gross shortage of dietary animal proteins. Helminthiasis is one of the most important factors adversely affecting tropical livestock productivity. Helminth infections which are often chronic and asymptomatic on the field lead to retarded growth, delayed and reduced productivity, and increased susceptibility to secondary infections(1). *F. gigantica* is a cosmopolitan parasite and occurs most commonly in Africa(2,3). Studies carried out on Fascioliasis in many parts of Nigeria showed that the disease is endemic in cattle slaughtered in large abattoirs(4). The present study was undertaken to provide information on the prevalence of the different genera of helminths found infesting the livers of cattle in Plateau State whose eggs are evident in the bile.

**MATERIALS AND METHODS**

The study was carried out in Jos abattoir which is managed under the Ministry of Natural Resources, Plateau State. The abattoir was visited daily with the exception of Sundays during the period of study, between 6.00am and 10.00am when most of the slaughtering was done. The

breeds of the cattle brought to the abattoir were identified before been slaughtered. Livers and bile ducts from freshly slaughtered cattle were inspected and adult helminthes parasites found were collected in McCartney bottles containing 10% formalin after they had been rinsed with 0.09% normal saline through duodenal or bile duct aspiration (5). The bile contents were collected from the gall bladders of the cattle for further study after preservation with few drops of 10% formalin. The bile was agitated vigorously to assume a random distribution of the eggs. A drop of the agitated bile was placed on the slide and observed for the presence of parasites eggs under the X10 objective of the light microscope. The numbers of eggs found were counted to determine the intensity and prevalence of infection. *F. gigantica* and *D. hospes* eggs were recovered. The identification was based on egg morphology.

**RESULTS**

The majority of the cattle examined were the White Fulani breed and occasionally the shorthorn and longhorn Zebu breed. Helminths recovered from infected livers bile ducts and portal veins of cattle were *F. gigantica* and *D. hospes* of the 515 cattle examined, 162(31.46%) were parasitised (Table1).

**TABLE 1:** Results showing the overall prevalence of parasitic infection (eggs) in the bile of cattle slaughtered in Jos Abattoir, Plateau State, Nigeria.

Helminth Parasites (eggs)	No. Examined	No. infected(%)
<i>D.hospes</i>	515	115(22.33)
<i>F.gigantica</i>	515	20(3.88)
Mixed infection		
<i>D.hospes</i> and <i>F.gigantica</i>	515	27(5.24)
Overall infection	515	162(31.46)

Prevalence of parasitic infection (eggs) in the bile of cattle in relation to sex. Out of the 402 bile examined for the cows, 93 (23.13%) were infected by *D. hospes*, 15(3.73%) had *F. gigantea*, 20(4.98%) were parasitised by *D. hospes* and *F. gigantea*. The overall prevalence for cows is 128(31.84%). A total number of 113 gall bladders

of bulls were examined, out of which 22(19.47%) were infected by *D. hospes*, 5(4.43%) were parasitised by *F. gigantea*, 7(6.20%) had mixed infection and the overall prevalence for the bull is 34(30.09%). There was no statistical difference ( $P>0.05$ ) between infection rates in the cows and bulls examined.

**TABLE 2:** Results showing the prevalence of parasitic infection (eggs) in the bile of Cattle in relation to sex of cattle slaughtered in Jos Abattoir, Plateau State, Nigeria.

Helminth parasites (eggs)	Cows		Bulls	
	No examined	No infected	No examined	No infected
<i>D. hospes</i>	402	93 (23.13%)	113	22(19.47%)
<i>F. gigantea</i>	402	15 (3.73%)	113	5(4.43%)
(mixed infection)	402	20 (4.98%)	113	7(6.20%)
<i>D. hospes</i> and <i>F. gigantea</i>				
Overall Prevalence	402	128 (31.84%)	113	34(30.09%)

Prevalence of parasitic infection (eggs) in bile of cattle in relation to age group. The age groups ranges from 1-3years, 4-6years, 7-9years, 10years-above. From the total number of cattle examined, 269 were between the age group of 1-3years out of which 211 were cows, of this number 78(36.97%) were infected by *D. hospes* and *F. gigantea*. 58 bulls were examined, 18(31.03%) were infected. From the age group of 4-6years, a total of 222 cattle were examined, 175 cows were observed, out of which 45(25.71%) were parasitised. From the 47 bulls

examined, 15(31.91%) were infected. Among the age group of 7-9years, a total of 19 cattle's were examined from this, 15 were cows and 5(33.33%) were infected. 4 bulls were observed but none of them had the infections. 5 cattle's between the age group of 10years-above were examined, a cow was observed with no infection, 4 bulls were examined with 1(25.00%) infection. There was no significant difference ( $P>0.05$ ) between the prevalence of the infections of the age groups.

**TABLE 3:** Results showing the prevalence of parasitic infection (eggs) in the bile of cattle in relation to age of cattle slaughtered in Jos Abattoir, Plateau state, Nigeria

Age group	No. Of Cows	No. of Cows	No. of Bulls	No. of Bulls
Years)	(examined)	infected	examined	infected
1-3	211	78(38.97%)	58	118(31.03%)
4-6	175	45(25.71%)	47	15(31.91%)
7-9	15	5(33.33%)	4	0(0.00%)
10-above	1	0(0.00%)	4	1(25.00%)
Overall	402	128(31.84%)	113	34(30.09%)
Infection				

## DISCUSSION

The result of this study shows a low prevalent rate of infection in cattle slaughtered at the Jos abattoir, between May and June which is the late hot dry season to the onset of rainy season as a result of reduction in the infection rate during the dry

Season which is in accordance to the fact that highest infections of *D. hospes* and *F. gigantea* occurred between June and August which were the months of heavy rainfall as reported by Adeoye and Fasuyi (6). It was observed that the younger cattle within the age groups of

1-3years and 4-6years were slaughtered more than older ones between the age groups of 7-9years to 10years-above. The reason might be that beef of younger cattle are tender and more palatable. Hence, the sample size of older cattle examined was relatively small compared to the younger ones. Also leading to higher infection rates within these age groups. 27(5.24%) gall bladders were found to have a mixed infection of *F. gigantea* and *D. hospes* in this study which is in agreement with the findings of Adeoye and Fasuyi (6) who found a mixed infection rate of 4.4%

in Lagos metropolis. This confirms that mixed infections is always lower than single infection

#### ACKNOWLEDGEMENTS

The author is grateful to the authorities of Jos Metropolitan Abattoir for access to facilities in which the work was done and to the Project Manager, Jos Abattoir for his cooperation. Technical assistance was provided by the Chief Technologist of Zoology department University of Jos, Plateau State, Nigeria.

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