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## Economic assessment of losses due to parasitic diseases common at the Maiduguri abattoir, Nigeria

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**ABSTRACT:** A total of 250 cattle slaughtered at Maiduguri abattoir were examined, random sampling to ascertain the rate and level of meat condemnation due to fascioliasis, hydatidosis and cysticercosis. 202 (80.8%) of the cattle examined were confirmed positive for infection. Data on estimated losses in Naira equivalent and condemnation in weight (kg) showed that fascioliasis had 539.41kg, hydatidosis, 268.0kg and cysticercosis 483.19kg with an estimated economic value of N188, 804, N93, 800 and N169, 116 for fascioliasis, hydatidosis and cysticercosis respectively. Female cattle were found to be highly infected with condemnation weight of 975.69kg equaling N341, 491.5k compared to male cattle with 314.94kg equivalent to N110, 229. Condemnations from white Fulani cattle were more (712.55kg = N249, 392.5k) compared to that from red Mbororo with 578.08kg (N202, 328.00).

The significance of the above findings is herewith discussed.

**Key Words:** Economic, Assessment, Parasitic, Diseases abattoir Maiduguri, Nigeria.

### Introduction

Cattle play an important role in improving the national economy of Nigeria (David-West, 1983; Biu and Adindu, 2004; Biu and Babagana, 2004). However, parasitic diseases that include hydatidosis, fascioliasis (McManus and Smyth, 1986; Cook, 1989; Schantz, 1990; Biu and Adindu, 2004) and cysticercosis which could be zoonotic constitute a major economic problem by lowering the productivity of cattle and in addition to losses from condemnation of effected organs, humans can accidentally ingest the eggs/larvae and become infected.

Very poor meat inspection facilities and uncooperative attitude of butchers has been reported in Nigerian abattoirs (Aladi, 1999). This coupled with the nomadic management practiced by the cattle rearers may ease the distribution of infested carcasses to the population and hence this study was conducted to ascertain the level of infected carcasses as an index of economic losses as a result of condemnation and to advice on improved abattoir hygiene and adequate meat inspection.

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## Materials and Methods

This study was a one-month study (July, 2003) conducted at the Maiduguri abattoir on slaughtered cattle. 250 cattle livers of the slaughtered cattle were randomly selected and grossly examined by palpation and dissection for the presence of *Fasciola* flukes, and tapeworm cysts. All the infected livers were weighed (in kilogram), using the Florham Park, N.J. 07932 OHAUS USA scale and given economic value in Naira (N).

## Results

This study revealed that of the 250 livers sampled for fascioliasis, hydatidosis and cysticercosis, 202 (80.8%) were infected (Table 1) which shows the total weight (kg) of the infected livers as 1290.6 with an economic loss value in Naira (N) as N451, 720.50k. Relative loss disease-wise as condemnation indicates that fascioliasis represented 539.41k, hydatidosis with 268kg and cysticercosis 483.19kg with an estimated Naira value loss as N188, 804; N94, 800 and N169, 116 respectively. The Table also shows the distribution of condemnable livers among the cattle breeds and sexes. Male cattle had 314.94kg of condemnable livers representing a Naira value of N110, 229 which was significantly ( $P<0.05$ ) lower than that of female cattle with 975.66kg representing N341, 491.5. The red Mbororo had 578.08kg representing N202, 328.0k which was significantly ( $P<0.05$ ) lower than that of the white Fulani cattle with 712.52kg representing N249.392.50 kobo.

Table 1: Weight and Naira (N) loss values of condemnable cattle livers at slaughter in Maiduguri abattoir.

	Condemnable Weight (kg)	Naira loss value (₦)	Relative Risk (RR)
<b>Total</b>	<b>1290.6</b>	<b>451,720.50 kobo</b>	
<b>Disease:</b>			
Cysticercosis	483.19	169,116.0	
Hydatidosis	268.00	93,800.00	
Fascioliasis	539.41	188,804.00	
<b>Sex:</b>			
Male	314.94 <sup>a</sup>	110,229.00	0.322(0.2911-0.3563)
Female	975.66 <sup>b</sup>	341,491.50	3.105(2.806-3.435)
<b>Breed:</b>			
Red Mbororo	578.08 <sup>a</sup>	202,328.00	0.8112(0.7503-0.8770)
White Fulani	712.52 <sup>b</sup>	249,392.50	1.233(1.140-1.333).

NB: 1 Kilogramme of normal liver costs N350.00k, July, 2003.  
Figures with different superscripts in a column differ significantly.

## Discussion

The results of this study have shown that with a very high prevalence of 80.8% parasitic diseases are a common feature at the Maiduguri abattoir, while agrees with the findings by FAO, (1966), Froyd, (1975); Subianto *et al.*, (1978); FAO, (1966); Ogunrinade and Ogunrinade (1980); Schantz, (1990); Okoli *et al.*, (2000); Biu and Adindu (2004) and Biu and babagana (2004) who in major surveys of abattoirs from several parts of the world reported huge economic losses caused as a result of infection by fascioliasis, hydatidosis and cysticercosis with projection of financial losses based on average weight.

Since very poor meat inspection facilities and uncooperative attitude of butchers has been reported in Nigerian abattoirs (Aladi, 199), it is recommended that prompt chemotherapy of live animals before slaughter with improved meat inspection qualities and incineration of condemnable carcasses, since cysticercosis and hydatidosis are communicable and world wide (Schantz, 1990) in distribution causing public health problems.

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