

## *Fasciola gigantica* IN ONITSHA AND ENVIRONS

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### ABSTRACT

*The presence of Fasciola gigantica in cattle slaughtered in Onitsha abattoir and three other abattoirs in Onitsha area of Anambra State, Nigeria was investigated from November to December 2004. The study involved actual postmortem inspection on the slaughtered cattle. The liver were examined for Fasciola by making length wise incision on the ventral side of the liver in such a way that the bile duct and gall bladder are cut open. All cases of Fasciola were detected from the liver. Afor-Igwe abattoir recorded the prevalence rate of 10.8% while the prevalence rates of 7.0%, 7.7% and 13.4% were recorded at Nkwor-Ogidi abattoir, Oye Olisa abattoir and Onitsha main market abattoir respectively. Out of a total of 1580 cattle examined, 166(10.51%) were infected with F. gigantica. Of the 166 diseased liver, 26(15.7%) had light worm load, 77(46.4%) medium worm load and 63(38%) had heavy worm load. The lowest number of worm recovered per liver was 3 while the highest was 88. This study has established the presence of F. gigantica in Onitsha Area. It was also observed that most diseased liver were not condemned. This situation calls for serious attention of the veterinary workers in the state. In view of the fact that these cattle which were brought from the Northern part of Nigeria were made to trek to places of pasture (near streams and rivers) within Onitsha area where the snail intermediate host of the parasite thrives, it is suggested that grazing of cattle should be highly restricted to lesser snail infected areas. The range land system (Artificial pasture land) seems to be the panacea to fascioliasis in cattle.*

**Keywords** – *Fasciola gigantica*, Cattle, Liver, Onitsha

### INTRODUCTION

Meat derived from cattle, sheep and goats provides major sources of animal protein for the populace of Eastern Nigeria. These ruminants incidentally serve as definitive host to the parasitic helminthes trematode of the family, Fasciolidae, commonly known as liver flukes. There are various species of these but the economically important ones are *Fasciola gigantica* in the tropics and *F. hepatica* in the temperate region (Ikeme and Obioha, 1973).

*F. gigantica* is a parasite of the liver and bile ducts of cattle, sheep, goats and wild ruminants in Africa and Asia. It is of great veterinary importance, causing the disease fascioliasis in cattle, accounting for considerable economic loss annually (Ukoli, 1990). The negative impact of helminth infections on livestock productivity in tropical countries has long been established. Reports by Ndarathi *et al.* (1989) and Olusi (1997) contained recent appraisals of this problem.

The primary objective of this research is to investigate the presence and intensity of *F. gigantica* in cattle slaughtered in Onitsha Urban and environs. This investigation hopefully would not only show the necessity for the routine monitoring and surveillance of this parasite infection on cattle, goat and sheep, but also should make it possible to assess the potential public health and economic importance.

### MATERIALS AND METHODS

**Study Area and Cattle:** The study area is Onitsha urban and its environs. The sites are Onitsha main market abattoir, Afor-Igwe abattoir, Nkwor-Ogidi abattoir and Oye Olisa abattoir all within 10 km radius of Onitsha in Anambra State of Nigeria. Onitsha is a big city with many traders and businessmen and thus large numbers of cattle were slaughtered daily. The cattle slaughtered in this area were brought off the Hausa and Fulani herds men from the Northern part of Nigeria. The breed of cattle studied were trade cattle, white Fulani (Bunaji), Sokoto Zebu/guddi, Fulani zebu and Nigerian Fulani (Afore). The herds men or their agent brought them down to Onitsha and environs in lorries. For the fact that the cattle were not slaughtered as soon as they arrived, they were made to trek to places of pasture within Onitsha area.

**Organ and Meat Inspection:** The slaughter houses were visited for 2 months from November 2<sup>nd</sup> to December 3<sup>rd</sup>, 2004. The slaughter houses were visited 3 times every week. This was done between 5 am and 7 am, the period when cattle are slaughtered in the area. On the whole, one thousand five hundred and eighty (1580) cattle were inspected. The inspection of the meat was made possible through the co-operation of the veterinary staff on duty at the abattoir. In most abattoirs, meat inspection facilities are inadequate and procedures are not uniform or standardized.

**Table 1: Infection rate of *Fasciola gigantica* in cattle slaughtered in Onitsha abattoir and environs**

Month	Onitsha main abattoir		Afor-Igwe abattoir		Nkwor-Ogidi abattoir		Oye Olisa abattoir		Total	
	No. Ex.	No. Inf.%	No. Ex.	No Inf. %	No Ex.	No Inf.%	No. Ex.	No. Inf.%	No. Ex.	No Inf.%
Nov.	300	45(15.00)	202	21(10.40)	125	8(6.402)	180	13(7.22)	807	87(10.78)
Dec.	303	36(11.88)	170	19(11.18)	105	8(7.62)	195	16(8.21)	773	79(10.22)
<b>Total</b>	<b>603</b>	<b>81(13.4)</b>	<b>372</b>	<b>40(10.8)</b>	<b>230</b>	<b>16(7.0)</b>	<b>375</b>	<b>29(7.7)</b>	<b>1580</b>	<b>166(10.5)</b>

**Table 2: *Fasciola gigantica* intensity in diseased cattle**

Abattoirs	Light	Medium	Heavy	Total
	(0-10 worms)	(11 -50 worms)	(>50 worms)	
Onitsha	9	44	28	81
Afor-Igwe	8	17	15	40
Nkwor-Ogidi	2	6	8	16
Oye Olisa	7	10	12	29
<b>Total</b>	26 (15.7%)	77(46.4%)	63(38%)	166
	Lowest No. per liver=3		Highest No. per liver =88	

The work involved actual postmortem inspection on the cattle. The livers were examined for *Fasciola* by making length wise incisions of the ventral side of the liver in such a way that the bile duct is cut open. Then forceps was used to pick the exposed worms in the bile duct and gall bladder. The flukes recovered from each cattle were placed in labelled containers and taken to the laboratory for identification, counting and preservation. Infected liver were classified according to the total number of worms recovered per liver into light (1-10), medium (11-50) and heavy (>50).

## RESULT

The infection rate is shown in table 1. Onitsha main market abattoir recorded the infection rate of 13.4 % while the infection rates of 10.8 %, 7.0% and 7.7 % were recorded by Afor-Igwe abattoir, Nkwor-Ogidi abattoir and Oye Olisa abattoir respectively. On the whole there were 116 cases of *Fasciola gigantica* infections out of the 1580 cattle inspected representing 10.51%. Eighty-seven (10.78 %) of the infections were detected in November while seventy-nine (10.22 %) were detected in December. The intensity of infection is shown in table 2. Sixty-three (38 %) of the diseased liver had heavy worm loads of 50 and above.

## DISCUSSION

The result obtained in this study is an indication that *F. gigantica* exist in the study area. The infection rate of *F. gigantica* in cattle slaughtered in Onitsha area found to be 10.51 % was moderately low. Although no similar study was known to have been carried out in the same area. A comparison with related study within the geographical south east Nigeria though in 1973 revealed that *F. gigantica* prevalence was 39 % in Nsukka urban abattoir (Ikeme and Obioha 1973). In Zaria, northern part of Nigeria, a high prevalence rate of 65.4 % was reported by Schillhorn *et al* (1980). However recently, low prevalence of 10.00% was recorded in same Nsukka urban abattoir by Ngwu *et al* (2004). The low rate observed in this

study which was similar to that observed at Nsukka (Ngwu *et al.*, 2004) recently could be attributed to many factors which include better management of cattle. This could be due to the fact that healthier animals now reach the southern market where the study was conducted. Mode of transportation of the slaughtered cattle from the northern to the eastern part of the country would have as well influenced the result. Probably, with modernized means of transportation (trailers and lorries) the cattle are restricted to the shepherd's choice of pasture coupled with their awareness of the economic consequences of leading the cattle to infected grazing grounds.

The period of this study was another factor that could have influenced the rate of infection. This is because the prevalence rates of 41.3% was reported in rainy season while that of 32.7 % was reported during the post rainy season periods in Borno State of Nigeria (Egbe-Nwiyi and Ohaudrai, 1996). This could be due to the fact that snail which serves as the intermediate host abounds in rainy season.

A reasonable number of the diseased liver with heavy worm load were hard, small with rough and uneven surfaces with a lot of fibrous tissues and unfit for human consumption. This report recorded many cattle without infection and few with light infection. This could be attributed to the fact that the slaughtered cattle were adult animal that might have been previously infected which resulted in cirrhosis of the liver that opposed penetration of young flukes contracted later in the season.

This study has clearly demonstrated the presence of *F. gigantica* in cattle slaughtered in Onitsha area abattoir. Although the rate of infection is moderately low, the economic implications should not be overlooked. This is because some infected liver were very bad while some of them were not condemned. This situation calls for serious attention of both the veterinary workers and the public health planners in the state. Since fascioliasis constitute a major intestinal problem and liver condemnation in cattle. The grazing of cattle should be highly restricted to areas of lesser snail infected site. The range land systems (Artificial pasture land) seem to be the panacea to fascioliasis in cattle. If cattle are

fed with hays, the rate of fasciola *gigantica* will be at its low ebb.

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