ECONOMIC IMPORTANCE OF HELMINTH DISEASES OF LIVESTOCK IN MAIDUGURI, NIGERIA

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ABSTRACT

A study was conducted to assess the economic losses due to parasitic diseases of livestock slaughtered in Maiduguri Municipal abattoir between January, 1982 and December, 1987. In decreasing order of economic importance the prevailing diseases recorded were cysticercosis, hydatidosis, fascioliasis, oesophagostomiasis, and aortic onchocerciasis. An estimated N886,080 was lost in all animals as a result of parasitism. This represented a loss of N734, 875; N38,820; N44,885 and N67,500 respectively in cattle, sheep, goats and camels. The public health aspects and the implications of the traditional livestock management system on the epidemiology of the parasitic diseases are highlighted.

Key Words: Helminths, Economic Loss, Parasitism

INTRODUCTION

It is well known that parasitic diseases are among the major factors responsible for the low productivity of livestock in Nigeria. Enormous economic losses have been associated with parasitic diseases such as trypanosomiasis, fascioliasis and parasitic gastroenteritis which are often neglected (Akerejola *et al.*, 1979; Alonge and Fasanni, 1979; Ogunrinade and Ogunrinade, 1980 and Mathew *et al.*, 1983). Although these losses have been estimated and reported in some parts of Nigeria, no such study has been conducted in Borno State which is a major livestock producing area. The livestock population of the state was estimated at 30.5% of the national cattle population of 9.3 million head and 10.8% each of the national sheep and goats population of 8.8 million and 20.8 million

respectively (Anon, 1980). In addition, over 57% of all the trade animals imported from the neighbouring countries pass through the state (Saidu, 1980) with about 55% of these utilized within Maiduguri, the largest urban centre in the state (Igene and Alaku, 1984).

This study was therefore conducted to assess the direct economic losses mainly due to condemnation of the affected organs associated with helminthic diseases of livestock slaughtered at the Maiduguri Municipal abattoir. The public health aspects of the helminth diseases and the implications of the traditional livestock husbandry system on the epidemiology of these diseases in Nigeria are highlighted.

MATERIALS AND METHODS

The data presented and used in this study were extracted from the records of inspection of animals after slaughter at the Maiduguri Municipal abattoir between January, 1982 and December, 1987. The animals arrived in Maiduguri from different parts of the state while some trade cattle and camels were imported from the neighbouring countries. The projection of financial losses was based on an average carcass weight of 180kg estimated for Nigerian cattle (FAO, 1966) which presently attracts a market value of N5,000.00. It was estimated that on an average 4kg of meat was lost from each of the affected cattle or camel and 1kg from each of sheep or goats due to condemnation of intestine as a result of pimply gut (oesophagostomiasis). The trimming of bovine aorta due to onchocerciasis was estimated to result in loss of about 1kg of meat in each case. The aorta and the rest of the offals, excluding the liver and the heart, are retailed at N15 per kg. The average weight of cattle and camel liver was estimated at 4kg; cattle

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heart, 2kg; liver of sheep and goat 2kg each. Both liver and heart are retailed at ₦25 per kg, bovine head at ₦120, while goat heads are sold at ₦15 each. Losses due to partial condemnation of intestine and other organs are not included in this study as they were not reflected in the inspection record of the abattoir.

RESULTS

The organs and carcass condemnations due to helminth diseases in the various animals examined during the study period are shown in Table 1. In decreasing order of economic importance the prevailing diseases were cysticercosis, hydatidosis, fascioliasis, oesophagostomiasis and aortic onchocerciasis, (Table 2). Based on actual recorded losses as a result of carcass and organ condemnation at the abattoir, the total loss in all animals during the six-year period under review is estimated at ₦886,080 (Table 2). Among the animal groups examined, the greatest financial loss was recorded in cattle where a sum of ₦734,875 was estimated lost compared with ₦38,820, ₦44,885 and ₦67,500 in sheep, goats and camels respectively.

DISCUSSION

Cysticercosis was responsible for the greatest financial loss among all helminthic diseases encountered during the study period. Hydatidosis was the single most important disease in sheep and goats, though the highest prevalence was recorded in cattle and the lowest in camels. This differed markedly from the findings of El-Kwawad *et al.* (1979) in Sudan where the highest and lowest prevalence were recorded in camels and cattle respectively. However, the localization of the hydatid cysts in the liver as found in all animal during this study agrees with the findings of Mathew *et al.* (1983).

Fascioliasis is wide spread in Nigeria and the financial losses associated with this disease had been estimated and reported in cattle in different parts of the country. Ogunrinade and Ogunrinade (1980) estimated an annual loss of

over ₦5 million due to bovine fascioliasis and interpreted this to represent a loss of ₦0.50 per animal in the national herd. Sheep and goats usually suffer acute fascioliasis resulting in death during the migratory stage of the juvenile flukes in the liver parenchyma. This may be responsible for the comparatively low prevalence and hence low financial loss is recorded for ovine and caprine fascioliasis in this study.

It is, however, interesting to note that cysticercosis previously regarded as unimportant in livestock production in the study area, was responsible for the total condemnation of 63 cattle carcasses, as a result of the generalised disease, resulting in a direct loss of about ₦369,010 which is quite a significant amount. Hydatidosis and cysticercosis recorded in large number of animals at the abattoir have great potentials of being transmissible to man.

Hydatidosis is a serious parasitic disease of great public health importance. Although its prevalence in human population has not been investigated in this area, it is suspected that close relationship between the cattle rearers and their dogs may play an important role in the maintenance of the disease in nomadic fulanis and therefore needs to be investigated. It is necessary to educate the nomads on the public health implications of this association of their animals at strategic intervals within the year.

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Table 1 WHOLE ORGAN AND CARCASS CONDEMNATION DUE TO HELMINTH DISEASES OF LIVESTOCK AT MAIDUGURI ABATTOIR (1982-1987)

Animal	Total slaughtered	Cysticercosis		Liver condemnations				Pimply gut +	Aortic Ochocerciasis +
		Whole carcass	Head	Heart	Fascioliasis	Hydatidosis			
Cattle	231,895	65	58	941	1913	1636		43	559
Sheep	106,748	-	-	-	10	635		438	-
Goats	316,647	-	-	-	20	722		519	-
Camels	59,266	-	-	-	-	87		980	-
Total	714,556	65	58	941	1943	3080		1980	559

+ Partial condemnation not included.

Table 2 ECONOMIC LOSSES DUE TO HELMINTH DISEASES OF LIVESTOCK AT MAIDUGURI ABATTOIR (1982-1987)

Diseases	Cattle		Sheep		Goats		Camels		Total
	N	N	N	N	N	N	N	N	
Hydatidosis	163,600		31,750		36,100		8,700		240,150
Fascioliasis	191,300		500		1,000		-		192,800
Cysticercosis	369,010		-		-		-		369,010
Pimply gut	2,580		6,570		7,785		58,800		75,735
Onchocerciasis	8,385		-		-		-		8,385
Total	734,875		38,820		44,885		67,500		886,080