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## Retrospective study of domestic animal diseases handled at the zonal veterinary clinic, Maiduguri, Nigeria

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**ABSTRACT:** Records of prevalence of diseased cases treated at the Maiduguri zonal veterinary clinic were studied between January 1996/December, 2000. A total of 32,309 cases were treated and helminthiasis was highest (31.9%) compared to ectoparasitism (17.9%), respiratory tract infections (24.6%) and haemoparasitism (25.6%). This study also revealed that 1996 and 1997 had the highest prevalence (35.8% and 38.1% respectively) for haemoparasites while 1998, 1999 and 2000 had high prevalence rates (36.2%, 34.3% and 35.1% respectively) for helminthiasis.

Poultry (64.5%) were the most commonly diseased than dogs (3.5%), goats (7.8%), sheep (11.6%) and cattle (12.5%) during the four years. Cattle, sheep and goats were most affected by helminthiasis (33.8%, 50.4% and 42.8% respectively), while dogs were most affected (41.0%) by ectoparasitism and poultry by haemoparasitism (43.9%).

Infections were commonly encountered throughout the months of review, however, respiratory tract infections and ectoparasitism were most common in April (38.2% and 41.9% respectively), haemoparasitism in November (42.1%) and helminthiasis in September (49.5%). The significance of the review findings is herewith discussed.

**Keywords:** Animal diseases; Ectoparasitism; Haemoparasitism; Helminthiasis.

### Introduction

Parasitic diseases are limiting factors to efficient livestock production in tropical and sub-tropical regions of the world including Nigeria (Soulsby, 1982; Georgi and Georgi, 1990; Urquhart *et al.*, 1992 and Ahmed *et al.*, 1993; 1994).

RIMS, (1992) reported that the major source of animal protein in Nigeria comes from the 14 million cattle, 12 million sheep and 34 million goats, 104 million poultry, 33 million pigs and the 88,000 camels. In spite of the unusual consumption, the 1 million donkeys and 208,000 horses and the so-called, non-conventional sources of animal protein (dog meat, grass cutters, snails and grasshoppers) do not form a significant proportion of the animal protein intake in Nigeria. In any case the consumption of some of these non-conventional animals is as a result of lack of preferable animal protein source in spite of the claim of them being delicacies.

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The prevalence of seasonal abundance of parasitic diseases of livestock in Nigeria have been reported from parts of the country (Ogunrinade, *et al.*, 1977; Ugochukwu and Ephraim, 1985; Anon, 1989; 1994) and the study area (Ahmed *et al.*, 1993; 1994; Biu and Nwosu, 1998), however, there is insufficient report on the clinical cases handled at the zonal veterinary clinic, Maiduguri, hence this study was designed to retrospectively define the prevalence of the diseases recorded based on animal species, disease, month and year of study.

## Materials and Methods

The study area lies within the semi-arid region of North-Eastern Nigeria on Latitude 11°30' and 11°45'E and 12° and 13°5'E Longitude (Ahmed and Sinha, 1993). It is characterized by a short rainy season of about 3 months (July – September) and a long dry season extending from October to June (Udoh, 1981).

Clinical cases comprising of 4058 cattle, 3742 sheep, 2526 goats, 20846 poultry and 1129 dogs were recorded between January 1996 and December 2000 at the zonal veterinary clinic, Maiduguri. Data obtained were analyzed using a software package, Graph pad Instat (Dataset 1.ISD). Seasonal indices were isolated using “Ratio to Moving Average” method as described by Spiegel and Stephens (1999).

## Results

Among the cases handled at the zonal veterinary clinic, Maiduguri, poultry (64.5%) were the most commonly treated, followed by the dogs (3.5%), goats (7.8%), sheep (11.6%) and cattle (12.5%) during the years studied (Table 1).

Table 2 shows that sheep (50.4%) were most afflicted by ectoparasitism (41.0%), poultry by haemoparasites (43.9%) and respiratory tract infection in goats (37.5%). Among the 32,309 cases treated, helminthiasis was highest (31.9%) compared to ectoparasitism (17.9%), respiratory tract infection (24.6%) and haemoparasitism (25.6%).

Table 3 shows the prevalence based on the year of study. The prevalence rate for the 1996 and 1999 was highest (35.8% and 38.1% respectively) for haemoparasites while 1998, 1999 and 2000 had high prevalence (36.2%, 34.3% and 35.1% respectively) for helminthiasis.

Table 4 shows the seasonal distribution of treated cases during the period of study. Infections were commonly encountered throughout the months of study. Significant seasonal variation in prevalence rates ( $P < 0.05$ ) were observed in respiratory tract infection and ectoparasitism occurring largely in April, (38.2 and 41.9%) respectively. Haemoparasitism peaks in November (42.1%) and helminthiasis in September (49.5%).

Table 1: Animals treated during the period of study (1996-20000).

Year	Total Examined	Animal Species No. (%) treated				
		Cattle	Sheep	Goat	Dog	Poultry
1996	7129	718(10.0) <sup>b</sup>	1124(16.0) <sup>b</sup>	626(8.8) <sup>b</sup>	312(4.4)	4349(61.0) <sup>b</sup>
1997	7614	902(11.9) <sup>b</sup>	393(5.2) <sup>b</sup>	350(4.6) <sup>b</sup>	127(1.7)	5842(76.7) <sup>b</sup>
1998	6226	1258(20.02) <sup>a</sup>	553(8.9) <sup>b</sup>	587(9.4) <sup>a</sup>	230(3.7)	3600(57.8) <sup>b</sup>
1999	6124	792(12.9) <sup>a</sup>	641(10.5) <sup>a</sup>	238(3.9) <sup>b</sup>	218(3.6)	4235(69.2) <sup>b</sup>
2000	5264	393(7.5) <sup>b</sup>	1039(19.7) <sup>b</sup>	719(13.7) <sup>a</sup>	244(4.6)	2864(54.5) <sup>a</sup>
<b>TOTAL</b>	<b>32357</b>	<b>4058(12.5)</b>	<b>3742(11.6)</b>	<b>2516(7.8)</b>	<b>1129(3.5)</b>	<b>20864(64.5)</b>

X<sup>2</sup> for trend  $P < 0.05$  different superscripts in columns indicate statistical significance of the differences.  
Dog  $P = 0.612$ .

Table 2: Disease distribution among the animals treated during the study period (1996-2000).

Animals treated	Total treated	No.(%) treated Against			
		Ectoparasite	Helminthiasis	Haemoparasites	Respiratory tract infection
Cattle	4058	1054*(25.9)	1372(33.8)	757(18.7)	875(21.6)
Sheep	3742	843(22.5)	1887(50.4)	85(2.3)	927(24.8)
Goat	2516	326(12.6)	1077(42.8)	170(6.8)	943(37.5)
Dog	1129	463(41.0)	411(36.4)	117(10.4)	138(12.2)
Poultry	20,864	3114(14.9)	3531(16.9)	9164(43.9)	5055(24.2)

\*Percentages in parenthesis.

Table 3: Annual disease distribution during the study period (1996-2000).

Year	Total treated	No. (%) treated Against			
		Ectoparasite	Haemoparasites	Helminthiasis	Respiratory tract infection
1996	8379*(25.9)	1231(14.5)	3002(35.8)	2568(30.7)	1578(18.8)
1997	1925(24.5)	1557(19.7)	3017(38.10)	2086(26.3)	1265(15.9)
1998	5792(17.9)	1041(17.9)	774(13.4)	2099(36.2)	1878(32.4)
1999	5563(17.2)	1017(18.3)	916(16.5)	1907(34.3)	1723(30.9)
2000	4650(14.4)	955(20.5)	569(12.2)	1632(35.1)	1494(32.1)
<b>TOTAL</b>	<b>32,309</b>	<b>5,800(17.9)</b>	<b>8,278(25.6)</b>	<b>10,293(31.9)</b>	<b>7,938(24.6)</b>

\*Percentages in parenthesis.

## Discussion

Analysis of diseased cases presented to the Zonal Veterinary Clinic, Maiduguri revealed that helminthiasis, ectoparasitism, haemoparasitism and respiratory tract infections were prevalent among the different animal species treated. This is in consonance with the observation from other parts of Nigeria (Idowu *et al.*, 1977; Abdu, *et al.*, 1985; Ugochukwu and Ephraim, 1985 and Chiejina, 1986).

Poultry were most infected in this study which conforms with the reports of Ugochukwu and Ephraim, (1985) that it is not only due to the importation of different exotic breeds for poultry production programs but also to increased lack of awareness by poultry farmers to utilize available Veterinary services for maximum production. RIMS (1992) also indicated that poultry are more populous in the Northern region (104 million) compared to cattle with 12 million as second. Abdu, *et al.*, (1985) also reported that poultry infections are usually precipitated by warm and humid environmental conditions conducive for parasitic development.

Table 4: Seasonal variation in disease distribution during the study period (1996-2000).

Months	Total Treated	No. (%) treated Against			
		Ectoparasites	Haemoparasites	Helminthiasis	Respiratory tract infection
January	4068	811*(19.9)	1140(28.0)	1146(28.2)	971(23.9)
February	3126	307(9.8)	1031(32.9)	846(27.1)	942(30.1)
March	2069	322(15.6)	447(21.6)	689(33.3)	611(29.5)
April	1516	216(41.9)	36(8.9)	585(38.6)	579(38.2)
May	2326	554(23.8)	497(21.4)	738(31.9)	537(23.1)
June	1633	308(18.9)	377(23.1)	501(30.9)	477(27.5)
July	2128	347(16.3)	481(22.6)	825(38.7)	477(22.4)
August	2411	442(18.3)	351(14.6)	956(39.7)	662(27.5)
September	2822	679(24.1)	212(7.5)	1396(49.7)	535(18.9)
October	3809	597(15.7)	1515(39.7)	971(25.5)	726(19.1)
November	3797	607(15.9)	1597(42.1)	783(20.6)	810(21.3)
December	2604	610(23.4)	494(18.9)	859(32.9)	641(24.6)

\*Percentages in percentages

However, cattle, sheep and goats were most afflicted by helminthiasis due to the extensive system of management or mixed farming/traditional systems which readily exposes them to infective eggs/larvae (Mani, 1999) with ranching less than 1% with high prevalence in September, a rainy month with influencing moisture and humidity (Chiejuna, 1986). Dogs were most affected by ectoparasites with majority as stray mongrels with poor housing and sanitary conditions (Nwosu *et al.*, 1990), while poultry were most infected by haemoparasites especially during the second half of the rainy season when the vectors are plenty coupled with overcrowding, poor sanitation especially with open yard or range rearing which adds significantly to the exposure of poultry to the surroundings harbouring the vectors (Agbede, 1981 and Lapage, 1986).

In conclusion, it is recommended that routine and strategic anti-helminthic medication, use of appropriate insecticides and acaricides, prompt prophylactic vaccination, therapeutic measures and strict quarantine regulations are made to effectively reduce the incidence of these diseases.

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