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An appraisal of prevalent diseases of ruminants handled at damaturu veterinary clinic zone 1 between 2011-2014

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Abstract: A study of prevalent diseases conditions of ruminants was conducted at the zonal veterinary clinic, Damaturu, Nigeria for the period of 2011-2014. Records kept by the clinic during the period under review were analyzed and the results expressed in percentages. The results revealed the prevalence of thirty two (32) different disease conditions classified under four categories namely, parasitic, bacterial, viral and mycotic diseases which constituted 58.58%, 36.33%, 4.62% and 0.48% respectively. The yearly disease distribution stood at 25.84%, 25.45%, 28.61% and 20.10% for the years 2011, 2012, 2013 and 2014 respectively. The months of august, September and October carried most of the cases with 10.04% for august, 9.26% and 10.04% for September and October respectively. In terms of vulnerability, the ovine species were found to be the most susceptible to most of these diseases with 43.04% prevalence rate followed by caprine species with 37.40% and 19.60% for the bovine species.
Keywords: Prevalent, diseases, ruminants, Damaturu, Nigeria

INTRODUCTION

The socio economic importance of ruminant livestock in a developing country cannot be over emphasized. Cattle and small ruminants form the backbone of agricultural production system in many of sub Saharan Africa. One of the greatest obstacles to increase productivity of livestock is the effect of disease. Disease significantly affect the economy of animal production as a result of mortality, reduced production in milk, meat, wool and leather from food animals [1], besides, the high cost of treatment also matters.

Reliable information on animal health and disease is fundamental to planning of disease control programs. This necessitates analysis of data collected over a period on a large scale. Such operation enables one to take detail of disease outbreak base on sound epidemiological investigation. In the last decade, interests have arisen in the survey and analysis of disease and global approach to the problem of wastage or mortalities in herds [2].

In Nigeria, the prevalence of livestock disease has been considered a major constrain to livestock production since the colonial period [3]. Analysis of common diseases has been conducted by some researchers in many part of the country; but there is little or no information on the prevalence of different livestock diseases in Yobe State in general and Damaturu area in particular. This study was therefore conducted to compile and analyze the prevalent disease conditions of ruminants handled at Yobe State veterinary clinic zone 1, Damaturu.

CASE REPORT

Description of the study area

Damaturu town is the capital of Yobe state, Nigeria. It is located on coordinates of 11° 44' 55" N, 11° 57' 50"E in the north-eastern part of Nigeria with an area of 2,366km ^{2} and a population of 88,014 based on the 2006 census. The climate regime of Yobe state is characterized by single long dry season followed by a shorter wet season. Mean annual rainfall ranges from 800 to 1000 mm. Potential evapo transpiration exceed rainfall except for few months. Mean annual temperature is 36 ^{0}C increasing toward the Sahel zone to about 38 ^{0}C while, mean dry season temperature is 28 ^{0}C [4].

Study Subjects

Ruminant animals (bovine, ovine and caprine) presented at the Yobe State veterinary clinic, zone 1, Damaturu between 2011 and 2014 formed the basis of this assessment

Data analysis

Data were obtained from the health register of the clinic and examined for month and yearly prevalence of the common diseases. The prevalence of

the diseases among the species of ruminants was also recorded. Data collected from the register were reduced to means and percentages.

RESULTS

Prevalence of diseases among the 3 species of ruminants was presented in the tables below.

Table 1: Yearly Prevalence of Ruminant Diseases Appraisal at Zonal Veterinary Clinic Damaturu (2011-2014)

PARASITIC	**2011**	**2012**	**2013**	**2014**	**TOTAL**
Helminthiasis	142(2.57)	922(1.94)	1597(33.80)	947(2854)	4887(29.60)
Coccidiosis	103 (2.41)	68(1.62)	59 (1.25)	132 (3.95)	362 (2.19)
Mange	635(14.89)	345(14.89)	496(10.50)	354(10.67)	1830 (1.23)
Babesiosis	113(2.65)	102(2.43)	79(1.67)	95(2.86)	389(2.36)
Ticks infest.	420(9.85)	434(9.38)	433(10.26)	233(7.02)	1527(9.25)
Cysticercosis	162(3.80)	181(3.85)	182(4.04)	134(4.04)	659(3.99)
Lice infest.	0(0)	0(0)	0(0)	17(0.51)	17(0.10)
SUBTOTAL	**2857(21.18)**	**2049(21.18)**	**2856(29.52)**	**1912(19.76)**	**9674(58.59)**
BACTERIAL					
Foot root	242(5.67)	422(10.04)	422(8.93)	316(9.52)	1402(8.49)
C.tetani	12(0.28)	12(0.28)	4(0.09)	0(0)	16(0.09)
Pneumonia	396(9.28)	518(12.33)	332(7.02)	316(9.52)	1552(9.40)
B. antracis	29(0.04)	29(0,69)	43(0.91)	50(1.51)	124(0.79)
Listeriosis	7(0.16)	16(0.38)	34(0.33)	11(0.33)	68(0.41)
Brucellosis	17(0.40)	18(0.43)	22(0.47)	22(0.66)	79(0.48)
Actinomycosis	9(021)	18(0.04)	2 (0.04)	17(0.51)	46(0.48)
C.perferangis	34 (1.00)	66(1.57)	23(0.49)	62(1.87)	204(1.24)
Streptothricosis	2 (0.04)	0(0)	24(0.51)	0(0)	26(0.16)
Bacteraemea	57(1.34)	140(0.87)	41(3.33)	50(1.51)	288(1.74)
Tuberculosis	13(0.30)	56(1.33)	22(0.47)	19(0.57)	110(0.67)
Mastitis	145(3.40)	150(3.57)	161(3.41)	77(2.32)	533(3.3)
Metritis	92(2.16)	151(3.5)	129(4.06)	72(2.17)	547(3.07)
Orchitis	74(1.73)	81(1.93)	133(2.82)	66(1.99)	354(2.14)
Endometritis	29(0.68)	32(0.76)	7(0.15)	16(0.48)	84(0.45)
Conjunctivitis	5(0.12)	33(0.59)	22(0.47)	15(0.52)	5(0.16)
Pneumoenteris	14(033)	7(0.17)	0(0)	6(0.18)	27(0.16)
Septicaemia	60(1.41)	33(0.79)	30(0.64)	13(0.39)	136(0.82)
URTI	49(1.5)	148(3.52)	100(2.12)	70(2.11)	367(2.22)
SUBTOTAL	**1268(21.16)**	**1924(32.10)**	**1612(26.90)**	**1191(19.87)**	**59993(36.30)**
VIRAL	**2011**	**2012**	**2013**	**2014**	**TOTAL**
FMD	32(0.26)	32(0.76)	40(0.85)	91(0.85)	125(0.76)
Orf	11(0.26)	36(0.86)	48(1.01)	30(0.90)	125(0.76)
Blue tongue	0(0)	82(0.86)	56(1.19)	39(1.18)	177(1.07)
Sheep pox	36(0.86)	62(1.48)	40(0.85)	15(0.45)	153(0.93)
PPR	56(1.131)	0(0)	35(0.74)	92(2.77)	183(1.11)
SUBTOTAL	**135(17.69)**	**212(27.79)**	**219(28.70)**	**197(25.82)**	**763(4.62)**
MYCOTIC					
Aflatoxicosis	11(0.26)	19(0.61)	29(0.63)	21(0.63)	80(0.48)

Table II: Cumulative Four Year Monthly Prevalence of Ruminant Diseases Appraisal At Zonal Veterinary Clinic Damaturu (2011-2014)

Number Infected (Percentage)

Month	Parasitic	Bacterial	Viral	Mycotic	TOTAL
January	824(8.51)	540(9.01)	51(6.68)	2(2.5)	1417(8.58)
February	015(6.36)	461(7.69)	132(17.30)	9(11.25)	132(17.30)
March	686(7.84)	470(7.84)	157(20.58)	11(1.25)	1314(7.22)
April	625(6.47)	450(7.51)	708(14.15)	11(13.75)	1194(7.22)
May	718(7.12)	512(8.54)	66(8.65)	15(18.75)	1311(7.94)
June	763(7.89)	478(7.91)	78(10.42)	10(12.5)	1329(8.05)
July	880(9.01)	466(7.77)	26(3.42)	17(0.51)	1381(8.36)
August	1031(10.66)	590(9.84)	30(3.93)	6(7.5)	1657(10.04)
September	950(9.82)	561(9.36)	14(1.83)	4(5.0)	1529(9.26)
October	1068(11.04)	532(8.87)	54(7.08)	4(5.0)	1658(10.04)
November	140(7.65)	472(7.87)	18(2.36)	5(6.25)	1270(7.69)
December	774(8.00)	463(7.77)	29(3.08)	4(5.0)	1270(7.69)
Total	**9674(58.59)**	**5995(36)**	**763(4.62)**	**80(0.48)**	**16,510(100)**

Table III: Prevalence of Disease Conditions of Ruminants Treated at Damaturu Veterinary Clinic based on Species of Ruminants

Number Infected (Percentage)

Parasitic	Goat	Sheep	Cattle
Helminthiasis	931(50.06)	1699(51.66)	1267(5.012)
Coccidiosis	71(1.84)	53(1.61)	231(9.14)
Mange	921(23.88)	730(22.20)	179(7.08)
Babesiosis	89(2.31)	81(2.46)	220(8.70)
Ticks infest.	596(15.45)	522(15.87)	410(16.22)
Cysticercosis	246(6.38)	201(6.11)	210(8.31)
Lice infest.	3(0.09)	3(0.09)	11(0.44)
Subtotal	**3857(39.87)**	**3289(39.87)**	**2528(26.13)**
Bacterial	**Goat**	**Sheep**	**Cattle**
Foot rot	742(25.62)	537(21.43)	123(20.18)
C.tetani	0(00)	0(00)	16(2.17)
Pneumonia	924(31.91)	585(32.34)	43(7.26)
B. Entericis	56(1.936)	46(1.84)	22(3.72)
Listeriosis	68(2.35)	0(00)	0(00)
Brucellosis	2(0.07)	23(0.92)	54(9.24)
Actinomycosis	24(0.83)	23(0.92)	54(9.14)
C. perf. Inf	59(2.04)	92(4.67)	48(8.12)
Streptothricosis	0(00)	0(00)	266(4.40)
Tuberculosis	0(00)	0(00)	110(18.16)
Bacteraemia	115(3.97)	122(4.87)	51(8.63)
Mastitis	278(9.60)	259(10.34)	0(00)
Orchitis	187(6.16)	169(6.74)	49(8.29)
Conjuctivitis	37(1.28)	30(1.20)	8(1.35)
Pnemoenteritis	3(0,10)	24(0.96)	0(00)
Septicaemia	36(1.24)	6(5,59)	35(5.92)
URTI	188(6.49)	173(6.90)	6(1.02)
Subtotal	**2896(48.32)**	**2506(41.82)**	**591(9.86)**
Viral	**Goat**	**Sheep**	**Cattle**
FMD	00(00)	60(17.29)	65(71.43)
Orf disease	97(29.86)	33(9.51)	00(00)
Blue tongue	144(44.31)	33(9.51)	00(00)
Sheep pox	00(00)	153(44.09)	00(00)
PPR	84(22.85)	73(21.04)	26(4.40)
Subtotal	**325(42.60)**	**347(45.48)**	**94(28.75)**
Mycotic	**Goat**	**Sheep**	**Cattle**
Aflatoxicosis	24(30.0)	33(41.25)	23(28.75)
Total	**7102(43.02)**	**6275(37.40)**	**3233(19.58)**

DISCUSSIONS

Analysis of the disease conditions of ruminants presented to the Yobe State Veterinary Clinic Zone 1Damaturu for the period between 2011 and 2014 indicated that parasitic, bacterial, viral and mycotic cases are prevalent among the three species of ruminants; the parasitic cases constituting the highest prevalence rate, bulk of which were from helminthiasis alone. This agrees with the findings by [5]and [6] in a study conducted to determine the prevalence and risk factors associated with gastrointestinal parasitism at western Oromia, Ethiopia. They found the overall prevalence of gastrointestinal parasites as the highest; 69.6%.[5], in a retrospective study of diseases of ruminants at Maiduguri, Nigeria, recorded a 59.44% prevalence rate of parasitism. Similarly, the high prevalence rate of gastrointestinal parasitism recorded by this study is also backed by the findings of [7], who recorded a 62.29% prevalence rate of bovine gastrointestinal parasites out of the 350 faecal samples examined. Helminthiasis, ticks infection, foot rot, pneumonia, mastitis and metritis were the most prevalent disease conditions, a finding that is in consent with the observation of [5] and [6]. The higher prevalence rate recorded among the ovine and caprine species than in bovine species is also in consent with numerous other related studies. [6], attributed this to less or slow development of immunity in goats and sheep to parasites compared to the situation in cattle. Meanwhile a higher prevalence rate of infection especially those of parasitic nature were recorded in the month of august, September and October. These months happen to be wet months in the study area. This finding agrees with that of [1]. The association between higher prevalence rates of infection especially parasitic cases in the rainy season can be attributed to the fact that the wet season favors the development and epidemiology of many parasites than the drier months [6]. Nevertheless the prevalence rate recorded among bovine species was relatively far less in comparison with the rates in smaller ruminants; bovine 3233 (19.58), caprine 6175 (37.40) ovine 7102 (43.02). This could be attributed to the nomadic nature of cattle readers who mostly live in villages remote from the clinic, hence cases are rarely reported to the clinic. Even when ambulatory services are taken to the nomads in their locations, they often resist attempts by veterinary officers to handle their animals except when an animal apparently fall sick [5]. Besides, the generally low prevalence rate recorded among the cattle species as well as the absence or very low prevalence rate of some of the diseases may be attributed to the point that animal owners in this sub-region do employ ethno-veterinary medicine on their animals [1].

CONCLUSION

In conclusion, this assessment has recorded a prevalence rate of numerous diseases conditions and an alarming rate of helminthiasis especially in the smaller ruminants in Damaturu and its environs. It is therefore, recommended that nomads should be well enlightened on the importance of employing simple management practices such as deworming, spraying, proper housing, provision of clean drinking water and prompt prophylactic and therapeutic measures when necessary. They should also be encouraged to report immediately to the appropriate authorities the outbreaks of disease condition in their herds as well as practice quarantine measures. On the part of the government also, efforts should be made in equipping the state veterinary clinic with laboratory services so as to facilitate the appropriate diagnosis of disease conditions. Officers of the veterinary clinic should imbibe the spirit of proper record keeping because it is the backbone of good planning for efficient and effective developmental policies and programs.

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