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Studies on Influence of Seasonality on Clinical Conditions of Small Ruminants in Ogbomoso Areas of Oyo State

***Ameen, S. A., and Ajayi, J. A.,**

Department of Animal Production and Health, Ladoke Akintola University of Technology , P. M. B. 4000, Ogbomoso, Oyo State, Nigeria.
Correspondence: Saliu Akanni Ameen, Department of Animal Production and Health,LAUTECH, PMB, 4000,Ogbomoso, Oyo State, Nigeria.
OR drsaameen@yahoo.com

Abstract

Information on influence of seasonality on clinical conditions of small ruminants in Ogbomoso area of Oyo State has not been extensively documented. 10 years' worth of data on clinical cases in sheep and goats were analysed from records kept at the Veterinary Clinics from 1995- 2005 using simple descriptive, frequency and percentage distribution. The results showed that a total of eight hundred and eighty seven different cases were reported at the clinic between 1995-2005. 758 (85.46%) of Caprine and 129 (14.54%) of Ovine species cases were reported. Helminthosis occurred most (26.99%) in the early wet season while wounds occurred most on early dry season (20.87%). Non-infectious conditions such as dystocia (13.92%) and fractures (9.71%) were reported most on late wet season . Mange (5.83%), mastitis (7.77%), placenta retention (2.91%), sprain (5.34%) as well as prophylactic treatment (7.77%) were reported most in early dry season respectively. PPR were reported most in late dry season (9.59%). Other cases reported with values lower than 2.0% all year round were considered and these include ascitis, amputation, foot rot, milk fever, paralysis, pneumonia, rumen impaction, salmonellosis, skin burn, vulvitis, and tetanus. Information generated can be useful to Government agencies in strategic planning and guidelines for prevention and control of ruminant diseases.

Key words: Seasonality, Clinical conditions, Small ruminant, Ogbomoso

Introduction

Disease is defined as inability to perform physiological functions at normal levels even though nutrition and other environmental requirements are provided at adequate levels (Radositis *et al.*, 2007). High incidence of infectious diseases constitutes a major impediment to livestock production in most developing countries. However, technological difficulties in these countries hinder extensive use of modern diagnostic techniques in disease surveillance (Nwanta *et al.*, 2000).

Diseases and climatic problems have been blamed as the main limitation to modern animal husbandry in tropical areas (Loosli *et al.*, 1974). It is therefore important to understand not only the interactions between different diseases occurring in the same environment, but also

the modulating influence of the climatic factors driving the seasonal variations usually observed (Onwuliri *et al* 1993). Such knowledge is essential in planning control strategies against infectious diseases. Several reports have been written on livestock diseases in the country, but with very little attention to small ruminant diseases. The main constraints hindering the productivity of the livestock sector in most sub-Saharan countries are diseases, poor nutrition, poor breeding policies and poor management.

The common diseases which affect goats and sheep in sub-Saharan countries are helminthosis, peste des petits ruminants, contagious ecthyma, goat/sheep pox, pneumonia, anthrax, blackquarter, footrot, caseous lymphadenitis and brucellosis. Other diseases include heartwater, coccidiosis, trypanosomosis, Nairobi sheep disease, Rift Valley fever, blue tongue, mastitis and tuberculosis. Mange mites, fleas, ticks, lice and Oestrus ovis are the major ectoparasites infesting small ruminants in the region. Physical injuries and chemical or plant poisoning are reported to occur in occasional incidences. Malnutrition is the major non-infectious cause of unthriftiness in goats.

Several reports have been written on livestock diseases in the country, but with very little attention to small ruminant diseases. These studies are usually restricted to the analysis of prevalence rate and evaluation of seasonal influence on disease trends. Limited attention is paid to prevalence of different diseases, under the influence of the prevailing environmental condition. Moreso, there is little or no information on prevalence and seasonality of diseases in Ogbomoso area. Therefore, seasonal influence on prevalent diseases of Caprine and Ovine at the Veterinary Clinic in Ogbomoso were reported .

Materials and Methods

The study area is located on latitude 8º 07'N and longitude 4º 15'E with a mean annual rainfall of 1247mm and a relative humidity of 75% and 95%. It is situated about 600m above sea level with a mean annual temperature of about 26.2ºC. The vegetation is a derived savannah region. The animals were maintained under traditional system of management where they were provided shelter only at night and against inclement weather condition. Animals roamed about and scavenge on dump hills, grasses, brows plants while feed supplementation were in form of household waste of guinea corn, cassava, yam peeling, soy bean, cowpea husk etc. No adequate healthcare practices were maintained. The subjects of this study were caprine and ovine species whose treatment records covering a period of 10 years, 1995 to 2005. Their records were obtained from Veterinary Clinic of the Ministry of Agriculture, Natural Resources and rural development Ogbomoso, Oyo state. The records were on all of reported clinical cases of animals from Ogbomoso and its environs. Data collected from case reports were analysed on seasonal and yearly diagnosis of reported clinical cases of caprine and ovine at Clinic in Ogbomoso. The data reported were either confirmed diagnoses or conclusions. The methods used in diagnosis were clinical examination, post-mortem findings and laboratory tests . The data were classified as follows: Early Dry- October to December, Late Dry- January to March, Early wet-April to June, Late Wet-July to September

Data were subjected to simple descriptive analyses using frequency and percentage distribution of the SPSS computer package. (Field 2000).

Results

A total of eight hundred and eighty seven different cases were reported at the clinic between 1995-2005. 758 (85.46%) of caprine and 129 (14.54%) of ovine species were reported (Plate 1). The most prominent and profound diseases across all the seasons were parasitic infection such as helminthosis and non-infectious condition such as wounds in Ogbomoso areas. The helminthosis was highest in the early wet season (26.99%) (Table 3) and lowest in the late wet season (22.36%) , sprain (5.34%) and wounds were highest in early dry season (20.87%) , mange infestation was highest in early dry season (5.83%) and lowest in the late dry season (1.86%) while mastitis was highest in the early dry season (7.77%) and lowest in early wet season (2.79%). PPR was prominent in the late dry season (9.59%) and least prominent in the early dry season (6.31%). Other ruminant diseases that occurred all year round with minimal occurrence were brucellosis, colibacillosis, babesiosis, anal and rectal prolapse, vulvitis. etc

Plate 1: OVERVIEW OF REPORTED CASES PER SPECIES OF ANIMALS CAPRINE 85.46%; OVINE 14.54%

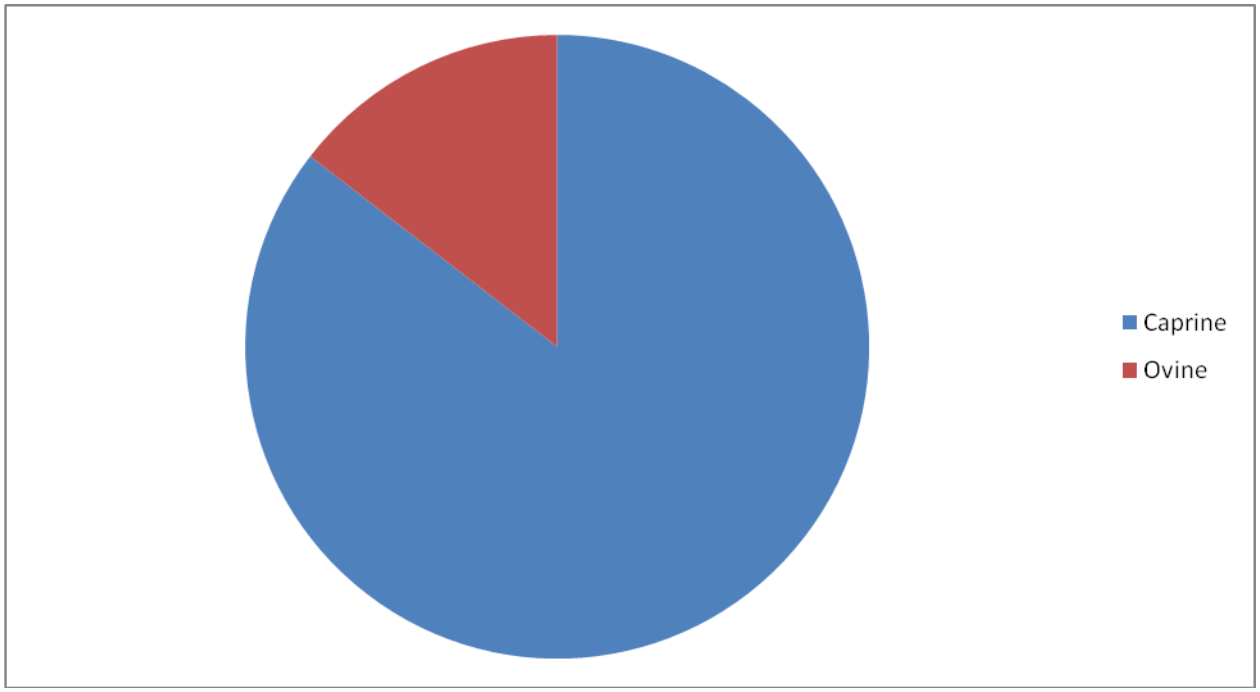

Table 1: Frequency of Occurrence of Clinical conditions of small ruminants in Early dry season between 1995-2005 in Ogbomoso areas of Oyo State.

Clinical Conditions	Caprine	Ovine	Total	Percentage
Abscesses	4	0	4	1.94
Amputation	1	0	1	0.49
Anaemia	1	0	1	0.49
Ascitis	0	1	1	0.49
Bacteremia	1	0	1	0.49
Brucellosis	1	0	1	0.49
Castration	2	0	2	0.97
Constipation	1	0	1	0.49
Diarrhea	2	2	4	1.94
Dystocia	18	2	20	9.71
Footrot	0	1	1	0.49
Fracture	10	8	18	8.74
Haemmorrhage	1	0	1	0.49
Helminthosis	40	9	49	23.8
Mange	10	2	12	5.83
Mastitis	15	1	16	7.77
Milk fever	2	0	2	0.97
Orchitis	6	1	7	3.4
Paralysis	1	0	1	0.49
Peste despetit ruminant	12	1	13	6.31
Placenta retention	5	1	6	2.91
Pneumonia	1	0	1	0.49
Prophylactic treatment	4	12	16	7.77
Rumen impaction	1	0	1	0.49
Salmonellosis	0	1	1	0.49
Skin burn	1	0	1	0.49
*Sprain	10	1	11	5.34
Vulvitis	1	0	1	0.49
*Wounds	36	7	43	20.87
Total	187	29	206	100

*Sprain and Wound were mostly pronounced during this period of the year

Table 2: Frequency of Occurrence of Clinical Conditions of small ruminants in late dry season between 1995-2005 in Ogbomoso areas of Oyo State.

Clinical Conditions	Caprine	Ovine	Total	Percentage
Abortion	2	0	2	0.91
Abscesses	7	2	9	4.11
Amputation	1	0	1	0.46
Anaemia	1	0	1	0.46
Anorexia	2	1	3	1.37
Avitaminosis	2	0	2	0.91
Bacteremia	6	0	6	2.74
Brucellosis	4	0	4	1.83
Castration	3	0	3	1.37
Conjuctivitis	2	0	2	0.91
Diarrhea	2	0	2	0.91
Dystocia	24	1	25	11.42
Fracture	8	3	11	5.02
Hypocalcemia	2	0	2	0.91
Helminthosis	45	8	53	24.20
Mange	3	1	4	1.83
Mastitis	9	0	9	4.11
Orchitis	0	2	2	0.91
Paraphimosis	2	0	2	0.91
*Peste despetit ruminant	19	2	21	9.59
Placenta retention	2	0	2	0.91
Pneumonia	2	0	2	0.91
Post partum complication	0	1	1	0.46
Prolapse of Anus	1	0	1	0.46
Prophylactic treatment	8	2	10	4.57
Sprain	7	2	9	4.11
Tetanus	1	0	1	0.46
Wounds	23	6	29	13.24
	188	31	219	100

- **PPR was highest during this period of year**

Table 3: Frequency of Occurrence of Clinical Conditions of small ruminants in early wet season between 1995-2005 in Ogbomoso areas of Oyo State

Clinical Conditions	Caprine	Ovine	Total	Percentage
Abortion	2	0	2	0.94
Abscesses	4	0	4	1.86
Agalactia	0	1	1	0.47
Babesiosis	0	1	1	0.47
Bacteremia	2	0	2	0.94
Bloat	3	0	3	1.40
Brucellosis	1	0	1	0.47
Castration	2	0	2	0.94
Collibacilosis	1	0	1	0.47
Conjuctivitis	1	0	1	0.47
Constipation	1	0	1	0.47
Diarrhea	1	3	4	1.86
Dystocia	22	2	24	11.16
Foot rot	2	0	2	0.94
Fracture	6	6	12	5.58
Hematoma	1	0	1	0.47
*Helminthosis	49	9	58	26.99
Mange	6	0	6	2.79
Mastitis	5	1	6	2.79
Metritis	1	0	1	0.47
Milk fever	3	0	3	1.47
Orchitis	1	0	1	0.47
Post partum complication	2	0	2	0.94
Paraphimosis	2	0	2	0.94
Peste despetit ruminant	13	2	15	6.98
Placenta retention	2	0	2	0.94
Pneumonia	1	1	2	0.94
Uterine prolapse	1	0	1	0.47
Prolapse of Anus	1	0	1	0.47
Prophylactic treatment	3	0	3	1.41
Sprain	5	0	5	2.33
Vulvitis	1	0	1	0.47
Wounds	37	6	43	20.00
	182	33	215	100

*****Helminthosis was pronounced during this period of the year

Table 4: Frequency of Occurrence of Clinical conditions of small ruminants in late wet season between 1995-2005 in Ogbomoso areas of Oyo State

Clinical Conditions	Caprine	Ovine	Total	Percentage
Abortion	1	1	2	0.84
Abscesses	2	0	2	0.84
Agalactia	0	1	1	0.42
Babesiosis	3	0	3	1.26
Bacteremia	1	0	1	0.42
Bloat	2	1	3	1.26
Bronchitis	1	0	1	0.42
Castration	2	0	2	0.84
Collibacillosis	1	0	1	0.42
Dental problem	1	0	1	0.42
Diarrhea	7	0	7	2.95
*Dystocia	29	4	33	13.92
Footrot	1	1	2	0.84
*Fracture	18	5	23	9.71
Helminthosis	45	9	54	22.78
Mange	6	1	7	2.95
Mastitis	12	0	12	5.06
Paraphimosis	3	0	3	1.26
Peste despetit ruminant	14	3	17	7.17
Placenta retention	1	0	1	0.42
Pneumonia	6	0	6	2.53
Prolapse of Anus	1	0	1	0.42
Prophylactic treatment	4	3	7	2.95
Sprain	4	1	5	2.11
Wounds	23	6	29	13.24
	188	31	219	100

*Dystocia and fracture were pronounced during this period of the year

Discussion

The study showed that people of Ogbomoso were not aware of Veterinary services and that is why low record of a total of eight hundred and eighty seven different cases were reported at the clinic between 1995-2005. The caprine had 85.46% while ovine had 14.54%. This confirms the works of Odeyinka and Okunade (2005) who reported that goat keeping is a common practice among the people of Ogbomoso. This is however, not in line with the observation of Garba *et al. (*2011), who worked on frequently encountered animal diseases at animal Hospital in Birnin Kebbi State, Ebbo *et al.,* (2003) on retrospective analysis of cases presented to the Veterinary Teaching Hospital in Usman Danfodio University, Sokoto, Salihu *et al.,* (2005) in Sokoto on retrospective study of diseases of livestock *and* Okolocha *et al.,* (2007) in Kaduna on a survey of some important diagnosed diseases of domestic animals .

The most probable reason could be that more people in the study area kept caprine because of hardy nature of goats, low economic standard of the people and the fact that there is no barrier (i. e religious taboo) against goat. Highest percentage of seasonal occurrence (26.05%) of helminthosis was recorded in early wet season (Table 3), and this disagree with a similar research by Garba *et al.,(* 2011) and Yohanna *et al*., (2008) who reported 22% in Kebbi state and 62.06% in Nassarawa state respectively.

The economic impact of helminthosis is enormous. Herlich (1978) estimated that the total animal loss due to helminthosis worldwide is equivalent to 30 million goats and sheep. Constraints to animal production attributable to helminthosis include inefficient food conversion, poor growth and reduced fertility. The sprain (5.34%) and wounds (20.87%) were reported mostly on early dry season ((Table 1) while dystocia (13.92%) and fractures (9.71%) (Table 4) were reported most on late wet season . These are many non-infectious diseases of sheep and goats which result in the animal's death and cause great economic losses, but have received sufficient attention. A wound is a type of injury in which skin is torn, cut, or punctured (an *open* wound), or where blunt force trauma causes a contusion (a *closed* wound). In pathology, it specifically refers to a sharp injury which damages the dermis of the skin. The study area was derived savanna surrounded by thorny grasses and some grasses that have spines and probably since most of these animals were maintained under traditional system of management where they roamed about and scavenge themselves on dump hills, grasses, and browse plants may be incriminated as the causes of this wound. Reproductive disorders such as abortion, dystocia, retained placenta and stillbirth could be due to brucellosis and this contribute highly to flock infertility. Stillbirth and dystocia appear to be among the primary causes of pre-and peri-natal lamb and kid losses in the area. The economic losses attributable to injuries such as fractures, wounds and rectal perforation are difficult to assess, however, expenses charged in treatment and nursing may result in large economic losses.

Highest percentage of PPR (9.59%) was recorded on late dry season(Table 2) (January – March). This incidence of PPR observed in this study did not agree with Obi, (1983) and Onyekweodiri and Uzoukwu, (1992) and Okoli, (2003) who recorded 25.1% of PPR in late dry season,

although the dusty and dry Hamattan wind that characterizes this period of the year has been shown to enhance the spread of PPR (Obi 1983). Mange, ascitis, placenta retention, sprain and prophylactic treatment were mostly in early dry season. Prophylactic treatment is usually applied to animal in case of preventive measure and it is not a disease condition (Matovelo *et al.,* 1987). Mange is another important ectoparasitic infection diagnosed in sheep and goats and this has been reported in central Tanzania. The disease has been reported to occur in other areas of the country (Matovelo *et al.,* 1987). Mange can be a very stubborn condition, particularly in goats, causing much damage to the skin.

Conclusions

It can therefore be concluded that helminthosis, wounds, dystocia, fractures, mange, mastitis, orchitis, PPR, placenta retention and sprain are the major clinical conditions affecting small ruminants in Ogbomoso areas of Oyo State. Other cases reported all the year round but not common were ascitis, amputation, foot rot, milk fever, paralysis, pneumonia, rumen impaction, salmonellosis, vulvitis, and tetanus. Although similar diseases have been reported in other parts of the country, their relative frequency and economic importance have not been assessed. Information generated can be useful to Government agencies in strategic planning and guidelines for prevention and control of ruminant diseases.

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