PREVALENCE AND SEASONALITY OF COMMON HEALTH PROBLEMS IN SOKOTO GUDALI CATTLE AT A BEEF RESEARCH STATION IN THE SUDAN ECOLOGICAL ZONE OF NIGERIA

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Received 14 September 1999; Accepted 31 October, 2000

ABSTRACT

The prevalence and seasonality of animal health problems encountered in Sokoto Gudali cattle over a 10 year period (1988-1998) is reported. Out of a total of 304 cases observed, Streptothricosis accounted for (15.1%), Gastroenteritis, 37 (14.5%), Pinkeye 14 (13.5%), Helminthosis 37 (12.2%) traumatic injury 37 (12.2%) Recumbency 21 (6.9%), Retained placenta 14 (4.6%) Footrot 8 (2.6%) and Abscesses 7 (2.3%). Notable among the conditions that showed remarkable seasonality in prevalence are streptothricosis, footrot, pinkeye, heartwater, helminthosis and trypanosomosis which occurred during the rainy season, while cases of gastroenteritis, foot and mouth disease, pneumonia, abscesses and recumbency occurred during the dry season. This study gives an indication of some of the common animal health problems usually encountered under a semi-intensive cattle production system and the need for effective animal health care.

Keywords: Health problems, seasonality, prevalence, Sokoto Gudali.

INTRODUCTION

Livestock, particularly cattle, has played and continues to play important roles in the lives of people in sub-Saharan Africa especially in the northern two-thirds of Nigeria, where almost half the total cattle population is permanently resident (Bourn *et al.*, 1994). Cattle provided meat, milk, draught power, manure and hide. They also serve social roles and are able to

utilize lignocellulosic biomass in form of crop residues and convert these into food and other marketable products. In spite of all these useful attributes, cattle statistics clearly indicate a huge demand-supply gap in the Nigerian meat market. This is because there has been little or no significant increase in cattle productivity over the years, and any increase if at all has been on animal number rather than increase in productivity per animal. Thus, the need to improve livestock productivity becomes imperative.

While recognising the importance of other factors that impeded the full exploitation of cattle potential in Nigeria such as seasonality and quality of nutrition, poor management and low genetic potential, one key factor to improving cattle production is through systematic prophylactic and curative animal health programme (Voh *et al.*, 1993). Animal health remains a major constraint to increasing livestock productivity in tropical countries, and losses due to diseases is said to be equal in value to one quarter of sub-Saharan African annual total animal production (ILRI, 1996). Animal diseases impose three kinds of costs on livestock production: losses through deaths and reduced performance, costs of preventive and curative treatments, and cost of lost opportunities where development is prevented.

Although research in the area of animal health has been considerable in Nigeria, poor health still remains a constraint to cattle production (Voh *et al.*, 1993). A knowledge of field disease situation is necessary in order to control animal diseases effectively and maintain animals in good health all year round.

This paper therefore presents the prevalence and seasonality of health problems of Sokoto Gudali cattle kept at a Beef research station in the Sudan ecological zone of Nigeria.

MATERIALS AND METHODS

The data used in this study were health records of Sokoto Gudali cattle kept at the Beef research station of the National Animal Production Research Institute (NAPRI), Talata Mafara between 1988 and 1998. A total of 304 cases were diagnosed based on history, clinical signs and physical examination of the affected animals.

The animals on the station were kept in holding pens at night and allowed to graze during the day within the station. The animals were also supplemented with mineral lick and concentrate (cotton seed cake and wheat offal)

especially during the dry season. Routine health care procedures like vaccination, ectoparasite control and deworming were carried out on the station. The data were analysed using Chi-square procedure Snedecor and Cochran (1969) to test for significance in the seasonality of prevalence.

RESULTS AND DISCUSSION

The prevalence of health problems observed in Sokoto Gudali cattle during the period under study is summarized in Table 1. Table 2 shows the seasonality in occurrence of the health problems. Some of the conditions encountered showed remarkable seasonality in prevalence. Most cases of helminthiasis, footrot, trypanosomosis and streptothricosis occurred during the rainy season while retained placenta, gastroenteritis and foot and mouth disease occurred during the dry season.

TABLE 1: PREVALENCE OF HEALTH PROBLEMS

Health problems encountered	Frequency	Percent of total
Pinkeye	41	13.5
Retained placenta	14	4.6
Traumatic injury	37	12.2
Helminthiasis	37	12.2
Gastroenteritis*	44	14.5
Stillbirth	2	0.7
Heartwater	3	1.0
Footrot	8	2.6
Dystocia	1	0.3
Abscesses	7	2.3
Recumbency	21	6.9
Uterine prolapse	2	0.7
Pneumonia	2	0.7
FMD	4	1.3
LSD	5	1.6
Black Quarter	2	0.7
Trypanosomosis	8	2.6
Glaucoma	2	0.7
Snake bite	2	0.7
Luxation (Coxo-femoral)	3	1.0
Streptothricosis	46	15.1
Others (non-specific)	13	4.3

*Gastroenteritis of aetiology other than helminthiasis

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TABLE 2: SEASONALITY IN THE OCCURRENCE OF HEALTH PROBLEMS SEASON

HEALTH PROBLEM	SEASON		
	WET	DRY	TOTAL
Pinkeye	25(60.98) ^a	16(39.02) ^a	41
Retained placenta	4(28.57) ^a	10(71.43) ^b	14
Traumatic injury	15(40.54) ^a	22(59.46) ^a	37
Helminthiasis	26(70.27) ^a	11(29.73) ^b	37
Gastroenteritis	3(6.82) ^a	41(93.18) ^b	44
Stillbirth	1(50.00) ^a	1(50.00) ^a	2
Heartwater	2(66.67) ^a	1(33.33) ^a	3
Footrot	8(100.00) ^a	0(0.00) ^b	8
Dystocia	1(100.00) ^a	0(0.00) ^b	1
Uterine prolapse	1(50.00) ^a	1(50.00) ^a	2
Abscesses	0(0.00) ^a	7(100.00) ^b	7
Pneumonia	0(0.00) ^a	2(100.00) ^b	2
Recumbency	3(14.29) ^a	18(85.71) ^b	21
FMD	0(0.00) ^a	4(100.00) ^b	4
LSD	2(40.00) ^a	3(60.00) ^a	5
Black Quarter	1(50.00) ^a	1(50.00) ^a	2
Trypanosomosis	6(75.00) ^a	2(25.00) ^b	8
Glaucoma	1(50.00) ^a	1(50.00) ^a	2
Snake bite	1(50.00) ^a	1(50.00) ^a	2
Luxation	3(33.33) ^a	2(66.67) ^a	3
Streptothricosis	37(80.43) ^a	9(19.57) ^b	46
Others (non-specific)	9(69.23) ^a	4(30.77) ^b	13

ab: Figures within the same row bearing different superscripts differ significantly ($P < 0.05$).

() Figures in bracket are percentages of the total

Health problems of livestock vary from one geographical area to another, and even within a locality, so also does the pattern vary from one season to another. The above notwithstanding the results of this study are in close consonance with other reports (Maina, 1986 and Voh *et al.*, 1988). From this study streptothricosis, gastroenteritis, pinkeye, helminthosis and traumatic injury represent serious health problems and this agrees with the reports of Onyekwodiri and Shoyinka (1984), Maina (1986), Voh *et al.* (1988) and Alawa *et al.* (1996).

Streptothricosis, pinkeye, gastroenteritis and helminthosis although not generally associated with high mortalities, except in young animals

(calves) they could cause serious economic losses through reduced productivity. The importance of these diseases also increase as production systems are intensified (Provost, 1991). It has been reported that slightly more than half of the losses incurred in livestock production are due to diseases caused by internal parasites such as helminthes (de Haan and Bekure, 1991).

Streptothricosis, helminthosis, pinkeye, heartwater and footrot were observed to occur mostly during the rainy season in this study. This agrees with the report of Bida (1973) where Kirchi was shown to be a major problem in cattle in Northern Nigeria especially during the rainy season.

Ugochukwu and Nwaneri (1984) also reported helminthosis and streptothricosis as the most prevalent diseases of cattle in Ibadan area of Nigeria. Trypanosomosis was also observed in this study to be a disease of importance in cattle with more cases occurring in the wet season, which is in agreement with the report of Voh *et al.* (1993).

Other notable health conditions observed in this study to have significant ($P < 0.05$) seasonal occurrence (with more cases occurring during the dry season) include: retained placenta, abscesses, gastroenteritis, pneumonia and recumbency. The period of high occurrence of these conditions coincides with the period of relatively poor nutrition both in quality and quantity. The prevalence and severity of these conditions are, to a large extent influenced by the nutritional status of animals. The immune system is depressed in poor nutritional state; and since immunoglobulins are synthesized from proteins, the animal easily come down with abscess in this state.

Very often, recumbency, especially without a known disease condition, may be caused by weakness resulting from poor nutrition. Usually, during period of feed scarcity, the tendency for animals to pick up whatever is available increases, making the animals more prone to gastroenteritis. This may explain why this condition is more common during the dry season when feed availability is poor both in quality and quantity. Dietary deficiencies, especially of vitamin E and selenium are known to cause retained placenta (Peters and Ball, 1995). This then explains the significantly high incidence of retained placenta during the dry season as observed in this study.

From this study there was no significant difference ($P > 0.05$) in the season of occurrence of some of the health problems encountered. These include stillbirth, heartwater, dystocia, uterine prolapse, lumpy

skin disease, glaucoma, blackquarter, snakebite and luxation. In contrast to the reports of Schillhorn van veen (1973) and Akerejola (1979), no incidence of rinderpest and contagious bovine pleuropneumonia was observed in this study. This was probably due to the fact that routine vaccination against these diseases are carried out on the station.

The result of this study gives an indication of common health problems encountered in semi-intensive cattle production system and the need for good animal health care maintenance in order to improve production. Efforts towards intensification of cattle production must therefore be accompanied with good prophylactic and curative measures.

CONCLUSION

It is concluded from this study that disease remains a major constraint to livestock productivity and in planning herd health programmes for cattle, attention should be paid to the season of the year. Also, disease control measures should take into consideration interaction of disease with nutrition, management and environment under different production systems.

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