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THE PREVALENCE OF THE PROFILE OF CLINICAL SIGNS OF MASTITIC GOATS IN NORTH - WESTERN AND CENTRAL PARTS OF NIGERIA

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Target audience: Veterinarians, Researchers, Small Ruminant Farmers.

ABSTRACT

A total of one hundred and three (103) does had mastitis among the one thousand three hundred and twenty three (1323) goats examined at villages in three states; Zamfara, Kebbi and Kaduna within two years. The prevalence of mastitis among the goats was 7.8%. The clinical manifestations of mastitis in goats and the factors which predisposed goats to mastitis were studied. The data obtained were subjected to analysis using SPSS. Of the total number of milk samples examined, 95 % were significantly of normal milk color. (P<0.05); while blood - tinged and greenish milk were the least statistically significant manifestation (P 0.05). Flock size, kidding season, halves of udder affected, kids per parturition, age of doe and parity significantly increased the occurrence of caprine mastitis.(P <0.05).

Key words: Mastitis, Goats, Kidding, Parturition.

DESCRIPTION OF PROBLEM.

The term mastitis refers to the inflammation of the mammary glands regardless of the cause.(1). It is characterized by physical, chemical and usually bacteriological changes in the milk and by pathological changes in the glandular tissue.(1). Diagnosis of mastitis in goats is often difficult as the udder secretion may remain grossly normal. (2). The most important physical and chemical changes in the milk include discoloration and presence of large number of leukocytes. Although there is swelling, heat, pain and induration in the mammary gland in many cases, a large proportion of mastitic glands are not readily detectable by manual palpation nor by visual examination of the milk using the strip cup.(1). Mastitis in goats pose a serious threat to goat meat production industry in all goat producing (rearing) countries, especially on commercial basis (3.). Due to the limited use of goats in Nigeria in the past for meat and milk, little attention was paid to its husbandry and health (4.). Sheep and goats are now receiving greater attention with the establishment of small ruminant farms in various parts of the Federation as a short-term measure to combat shortage of animal protein (4).Goat mastitis is reported from almost every country in the world , especially where dairy goat farming has been or is being developed. Wherever goats are bred, fed and managed with

the intention of increasing their productivity, mastitis is likely to be encountered and generally, the higher the level of production, the more likelihood there is of mastitis occurring unless very strict control measures are continuously maintained. (3). Mastitis in goats has been studied extensively in certain countries because of its importance in milk production. (5). The role of mastitis in health and production of goats in Nigeria has not been documented. (4). The major economic losses occur because of the reduced efficiency of affected does in successfully raising kids.(6). The high mortality in kids born to does with chronic mastitis makes the disease economically very significant to the Nigerian goat production industry (4). In Nigeria, there is no known commercial goat milk production industry and therefore, its economic importance has not been ascertained. (6).

Field observations of clinical caprine mastitis and its predisposing factors is scantly documented in Northern Nigeria. The purpose of this study is to evaluate the physical clinical signs of caprine mastitis and to determine possible predisposing factors to caprine mastitis in Zamfara, Kebbi and Kaduna states

MATERIALS AND METHODS.

One thousand three hundred and twenty three (1323) Sokoto red milking goats were examined for physical signs of mastitis from Zugu, in Kebbi State, Gumi and Daki-Takwas in Zamfara State and Zaria in Kaduna state for a period of two years. The information obtained were subjected to statistical analysis using Statistical Packages for Social Science (SPSS.). The physical examination included examination of body temperature , pulse and respiratory rates, visual inspection and manual palpation of the glands. The halves and teats were observed for asymmetry , variation in size and variation in teat direction. The teats were examined for wounds , scars, obstruction, congestion, hemorrhages. Other clinical signs of mastitis such as pain , warmth or cold on touch, inflamed and/ or engorged pendulous mammary glands were examined for each case Physical changes in the milk were also noted Strip cup test was used to determine the presence of blood, flaks, clots and color of milk.

Age of doe, parity, kids per parturition, flock size, season of kidding and half of mammary gland affected were also studied for each goat to evaluate their effects on mastitis.

RESULTS AND DISCUSSION.

The prevalence of goat mastitis was 7.8%. The clinical signs frequently encountered in the field among 103 mastitic goats in Zamfara, Kebbi and Kaduna states are as shown in Table 1. Mastitic udder which produced apparently normal milk color constituted 92.0%, while those that produced greenish and blood - tinged milk had the least frequency of 2.9% and 1.9% respectively. Table 2 shows the predisposing factors of mastitis.

Table 1. Clinical signs frequently encountered in the 103 mastitic goats in Zamfara, Kebbi and Kaduna states, Nigeria

	Frequency of mastitis	% frequency
Apparently normal milk color	95	92.0
Cold udder	83	80.6
Sloughing	82	81.3
Flakes	71	68.9
Pendulous udder	69	67.0
Pain on touch	55	53.4
Clots in milk	32	31.0
Warm	20	19.4
Greenish milk	3	2.9
Blood tinged milk	2	1.9

Table 2 : Factors predisposing mastitis among 103 clinically affected goats in Zamfara, Kebbi and Kaduna States.

Factors	Index	Frequency of Mastitis	% Occurence.
Flock size	1-15	41	39.8
	16-30	10	9.7
	> 30	52	50.5
Kidding season.	Jan-Mar.	0.0	0. 0
	Apr-Jun	25	24.3
	Jul-Sept.	28	27.2
	Oct-Dec.	50	48.5
Halves of Udder Affected	Right	12	11.7
	Left	42	40.8
	Both	49	47.6
Kids per parturition.			
	Single	54	52.4
	Twins	32	31.1
	Triplets	17	16.5
Age of Doe.	2years	2	1.9
	2-3 years	9	8.7
	>3 years	92	89.3
Parity	1	37	35.9
	2	41	39.8
	3	22	21.4
	4	2	1.9

Goat mastitis was significantly higher (50.5%) among goats from large flock size ($P < 0.05$). . Kidding season of October to December showed a significantly higher frequency of mastitis (48.5%) ($P < 0.05$). The left - half showed a significantly higher frequency (40.8%) than the right half (11.7%) ($P < 0.05$).. The number of kids per parturition indicated that goats with single kids significantly showed a higher frequency of mastitis (52.4%) than goats with more than one kid (16.5%) ($P < 0.05$). . The age of the doe at parturition showed a significantly higher frequency (89.3%) of mastitis among goats above 3 years than goats of up to 2 years.The parity had significant influence on goat mastitis. The higher the parity the lower the frequency of goat mastitis ($P < 0.05$). The low parity leads to milk engorgement in the udder leading to mastitis.

The apparent normal colour of milk from mastitic udder agreed with thereport of (1). that the colour of milk from goats with mastitic gland may remain apparently normal. This may indicate that most goat mastitis is at the sub - clinical level and can be measured by chemical parameters. The cold udder in some of the cases examined may indicate the chronic nature of the disease which is seen in savannah breeds of goats (6). and the poor blood flow to the affected area.

The high. presence of flakes in the milk is indicative of severe inflammatory processes in the gland as indicated by pain. redness. and warmth (1). The pendulous nature of the mastitic udder agreed with the report of (6) that mastitis characterised by enlarged pendulous udder and enlarged teats is quiet common among some local breed of goats such as Sokoto red and Kano brown and their crosses in some Northern states of Nigeria. The presence of milk clots . greenish milk and blood tinged milk indicated severe damage of the mammary gland by invading micro-organisms. Goats in the Northern part of Nigeria seems to be more semi intensively raised than the dwarf breeds in the South (7). Increased intensity of management will probably increase the flock size leading to increased infection rate of udder especially in unhygienic housing condition. Although both halves equally are exposed to trauma and infection the result indicate that the left half was more prone to mastitis . The reason could not be easily explained. The peak occurrence of clinical mastitis in does observed in this study fall within the third and fourth quarters of the year. This may be attributed to high kidding rate at the time of the year(8). Goats are probably much more exposed to trauma at these seasons since they are made to graze over long distances. It has been shown that there is a correlation between age of animal and susceptibility; the older animals being more susceptible to mastitis than the younger ones. This work is in agreement with the earlier finding of other investigators.

The reason for the significantly high frequency of caprine astitis among goats with single kids than multiple kids could be due to accumulation and longer periods of retained milk in the mammary gland of young goats which probably served as a good medium for microbial multiplication. This also explains the high frequency of caprine mastitis among goats of low parity.

CONCLUSION AND APPLICATION.

1. Farmers are therefore advised to seek Veterinary assistance when they notice any of the clinical signs observed in this study especially painful touch and refusal of the doe to suckle.

2. Farmers are advised to pay particular attention to hygienic practices as their flock size increases.

3. Farmers are also advised to milk their lactating goats requently to avoid long stasis of milk in the mammary gland.

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