

Prevalence of Lameness among Cattle Found In Karu and Keffi Local Government Areas of Nasarawa State

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Abstract: A total of 10 herds (with 492 cattle) and 22 market White Fulani cattle were examined for the prevalence of lameness in Karu and Keffi Local Government areas of Nasarawa state, Nigeria respectively. Out of the 492 cattle examine in Karu 100(20.3%) were male and the remaining 392 (79.7%) were female. About 21(4.3%) cattle showed evidence of lameness with a total prevalence of 4.3%. Out of which 16 (76.2%) were male and 5 (23.8%) were female. There was a statistical significant association among the sex group ($P < 0.05$). The odd of Lameness occurrence in male is having a value of 14.743 over the female, indicating that male is prone to lameness than female. Out of the 22 market cattle examined in Keffi , all were positive for lameness, out of which 19(86.4%) were male and 3(13.6%) were female. There was no statistical significant association between the sex group and occurrence of lameness ($P > 0.05$). The common conditions that predisposed cattle to lameness were bruises of the limb, Foot and Mouth Disease, Fracture, Joint problems, over grown hoof and Trauma.

Keywords: Prevalence, Lameness, Cattle, karu, keffi local government area and Nasarawa.

1. INTRODUCTION

White Fulani cattle are the important beef and diary breed of cattle in the area conquered by the Fulani people and beyond the sahel zone of Africa (Dagriss, 2007). The common names are ; Bunaji, Yakanaji, Akon and White Kano. They are collectively called West African Zebu which consists of Senegalese Fulani (Gobra), the Sudanese Fulani and the White Fulani. The Department of Livestock Production aserted that Nigeria had over 12,000,000 cattle making it one of the leading livestock producers in sub-saharan Africa. The actual deviation from a normal gait is lameness, otherwise referred to as gait disorder, animal lameness and animal gait disorder (Encyclopedia of medical concept, 2012).

Forbes in 2000 reported that lameness is a major reason for forced culling in UK daily herds. Fertility, reduction in milk production, lame cow taking longer periods to calf and requiring greater number of services are serious effects of lameness (Hernandez et al ., 2001). Factors contributing to lameness in cattle might include management, environmental factors and physiological effects of parturition. The literature on lameness in relation to this geographical location is rare and there is actually a dearth of information on the prevalence of lameness in cattle within the study area. This study will therefore provide the prevalence of lameness in White Fulani cattle in Karu and Keffi Local Government Area of Nasarawa State.

2. MATERIALS AND METHODS

The study was carried out in Karu and Keffi Local Government Areas of Nasarawa state, Nigeria. It shared border in the west with the federal capital territory, Abuja, in the north with Kaduna, in the south with Edo and Kogi and in the east with Plateau and Taraba states.

In Karu Local Government Area, a total of 10 herds from Fulani cattle herds with about 492 cattle were examined for lameness. Sex, lesions and predisposing factors were noted in relation to abnormal gait in each of the cattle examined. Sex was determined by observing the genitals, while lesions were classified as fractures, trauma, Foot and Mouth Disease, joint problems, bruises and overgrown hoof.

In Keffi Local Government Area, a total of 22 cattle from the cattle market were examined. Sex, lesions and predisposing factors were noted in relation to abnormal gait in each of the cattle examined. Sex was determined by observing the genitals, while lesions were classified as fractures, trauma, Foot and Mouth Disease, joint problems, bruises and overgrown hoof.

The herds visited were comprised of different numbers of cattle and animal handlers. On all the animals examined a careful visual examination was conducted to see evidence of limb fractures, Foot and Mouth disease, joint problems, bruises and overgrown hoof. Data generated from the examination were recorded. They are then classified as lame based on the positivity of the variables listed above. It should however be noted that limb specificity and age were not considered as a variable but the mere presence of lameness in White Fulani was the paramount data recorded.

3. RESULT

Table 1a below shows a total of 492 White Fulani cattle that were examined in ten (10) different herds in Karu local Government Area with a prevalence of 4.3%. Out of which 100 (20.3%) were males and the remaining 392 (79.7%) were females. There was no statistical significant association between the Herds visited and the occurrence of Lameness ($P>0.05$). A total of lame cattle were 21. Out of which 16 (76.2%) were male and 5 (23.8%) were female. The result shows that male was affected more than female. Table 1b shows the herds visited based on the trend of the occurrence of lameness with group A having 21(4.97%) positive and group B having 0(0.00%). There was no statistical significant association between the trend groups and occurrence of lameness in cattle ($P>0.05$).

Table 1a Prevalence of lameness in White Fulani breed of cattle based on different herds visited in Karu Local Government Area

Herds	Cattle No.	Sex ration	No. of lame cattle/herds
		Male/Female	
1	47	13/34	1
2	67	17/50	3
3	73	16/57	5
4	34	6/28	0
5	58	9/49	3
6	52	13/39	2
7	56	8/48	3
8	36	4/32	0
9	27	6/21	1
10	42	8/34	3
Total	492	100/392	21

Table 1b Prevalence of lameness in White Fulani breed of cattle in different herds visited in Karu Local Government Area based on trend of occurrence of lameness

Trend groups	Number examined	No. +ve (%)	P value	OR	95% C. I Lower –upper
A	422	21(4.97)	0.0566	7.550	0.450– 126.16
B	70	0 (0.0)		0.1324	0.007 – 2.213
Total	492				

Key: A= Herds with a positive case of Lameness.

B= Herds with negative result to Lameness.

Table 2a below shows 21 cattle about 4.3% prevalence in 492 White Fulani cattle examined for lameness associated with lesion such as fracture, Trauma , Foot and Mouth Disease, joint problems , Bruices and over grown hoof . Table 2b shows Prevalence of Lameness in White Fulani breed of cattle based on lesions as related to sex found in Karu Local Government Area. Out of which 100(16.0%) were male and 392 (1.3%) were female. There was a statistical significant association among the sex group ($P < 0.05$) . The odd of Lameness occurrence in male is having a value of 14.743 over the female.

Table 2a Prevalence of Lameness in White Fulani breed of cattle based on lesions found in Karu Local Government Area

Lesions	No. affected	Male	Female
Fracture	1	0	1
Trauma	1	0	1
Foot and mouth disease	7	4	3
Joint problem	1	1	0
Bruices	9	9	0
Overgrown hoof	2	2	0
Total	21	16	5

Table 2b: Prevalence of Lameness in White Fulani breed of cattle based on lesions as related to sex found in Karu Local Government Area

Sex	Number examined	No. +ve(%)	P value	OR	95% C. I LOWER-UPPER
Male	100	16(16.0)	0.0001	14.743	5.254-41.369
Female	392	5 (1.3)		0.067	0.024-0.190
Total	492				

Market result interpretation:

Table 3a shows a total of 22 White Fulani cattle from Keffi Local Government Area market were examined and signs of lameness with lesions similar to those examined in herds visited in Karu Local Government Area were seen. Out of 22 cattle examined for lameness, 19(86.4%) were male and 3(13.6%) were female. Table 3b shows prevalence of lameness in White Fulani cattle from Keffi Local Government Area market based on sex , 16(84.2%) out of the male and 2(66.6%) out of the female were positive to lameness. There was no statistical significant association between the sex ($P > 0.05$).

Table 3a: Prevalence of lameness in White Fulani cattle in Keffi cattle market based on the lesions

Lesions	No of cattle affected	sex of animal affected	
		male	female
Bruices	8	7	1
Joint problems	1	1	0
FMD	11	9	2
Fracture	1	1	0
Overgrown hoof	1	1	0
Total	22	19	3

Table 3b Prevalence of lameness in White Fulani cattle in Keffi cattle market based on sex as related to lesion.

Sex	Number examined	No. +ve(%)	P value	OR	95% C. I LOWER-UPPER
Male	19	16	0.4701	2.667	0.179 - 39.653
Female	3	2		0.375	0.0252 - 5.576
Total	22				

4. DISCUSSION

Cattle is a major source of protein and livelihood within the study area and lameness is a common problem in all classes of cattle and can greatly affect the welfare and productivity of the animal. This confirms the fact that the lame cows are having pain, slow appetite, decreased milk yield and weight loss as reported by Green *et al.*, 2002. The study provided a lameness prevalence of 4.3% out of the 492 cattle in the different Herds examined in Karu Local Government Area, out of which 100 (20.3%) were males and the remaining 392 (79.7%) were females. There was no statistical significant association between the trend groups and occurrence of lameness as related to the Herds examined ($P > 0.05$). The result of this study is in contrary with the reports of Bokko and Chaudhari (2001). The difference could be associated with the number of cattle examined, different geographical location and exposure rates to sources that could sequel to lameness. A total of lame cattle were 21 in Karu Local Government Area, out of which 16 (76.2%) were male and 5 (23.8%) were female. There was a statistical significant association among the sex group ($P < 0.05$). The odd of Lameness occurrence in male is having a value of 14.743 over the female. Indicating that male are prone to lameness than female. The result is also in contrary with the report of Booth *at al.*, 2004. The difference could be associated with the total number of cattle examined, type of lesion established and purpose of keeping or purchase of the cattle. A total of 22 cattle from Keffi Local Government Area market were examined and signs of lameness with lesions similar to those examined in herds visited in Karu Local Government Area were seen. Out of 22 cattle examined, all were positive for lameness, out of which 19(86.4%) were male and 3(13.6%) were female. There was no statistical significant association between the sex group and occurrence of lameness ($P > 0.05$). This result can strictly be attributed to the increase number of male sex examined as compared to the female sex. Abnormalities (lesions) such as fracture, trauma, bruices, foot and mouth disease, Joint problems and over grown hooves were observed which agrees with the fact that fractures and traumatic injuries on any part of limb can result to lameness (Bokko and Chaudhari., 2001). Overgrown hoof is not a common cause of lameness in cattle compared to small ruminants especially sheep, but it is known that overgrown claws increases the risk of lameness. Some cases of lameness are difficult to treat e.g. Foot and mouth disease and those that can be treated are managed by herd's owners or unqualified persons which could further exacerbate the situation, therefore prevention and control of the condition are very important.

The proportion of male to female per herd is not in comparison with the herd health management (i.e 1 bull/16-25 cows) and this may lead to competition for feed, female (sex) and or fighting resulting in trauma, bruises and fracture which could be the reason for increased number of lamed males than females. Overall market result showed prevalence of lameness which confirmed the fact that lameness is a frequent reason for forced culling (Booth et al., 2004). Fulani herdsmen usually use extensive management which involved trekking to a long distance with their cattle in search of feed and water as a result they get exposed to nails, thorn, pins, needle and metal scraps leading to injuries. Also most herd owners treat their own animal with both oral and injectable drugs without seeking professional advice from a veterinarian which always lead to complications such as lameness. There should be enlightenment of herdsmen on conditions that predispose cattle to lameness as well as the effects of lameness on the welfare and productivity of their cattle. Further studies based on effects of lameness on cattle should be given consideration.

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