

A note on the incidence of udder abnormalities in West African Dwarf goat in South Western Nigeria

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Abstract

A total of 589 West African Dwarf (WAD) goats were used for this study to determine the frequency of occurrence of udder abnormalities in South Western Nigeria. Goats were reared extensively by small-holder farmers who are the major stake holders in rearing small ruminants within the region. Estimates of frequencies of udder abnormalities (supernumerary teats and asymmetrical udder) were taken.

The incidence of supernumerary teats were 5.43%, 1.19% and 0.68% for does with three, four and six teats respectively, while the normal two-teat condition had the highest frequency (92.70%). The observation of does with 6-teat condition is being reported for the first time in this study. Percentage of does with asymmetrical udder was 4.92% while 95.08% was recorded for does with symmetrical udder.

It can be concluded from this study that the frequencies of udder abnormalities (supernumerary teats and asymmetrical udder) were low. There is need for periodic re-estimation as new variations are being introduced and possible evaluation of their effects on reproductive potential of the doe.

Key Words: Abnormal udder, frequency, goat, Nigeria

Introduction

The WAD goat is a prolific and hardy breed of about 40-50cm at withers found in West and Central Africa. The overall mean litter sizes at birth and at weaning were put at 1.82 and 1.56 respectively (Ebozoje and Ikeobi 1998). Several studies have pointed to the fact that udder and teat characteristics are important determinants of milk yield and ease of milking in dairy animals (Rogers and Spencer 1991; Peris et al 1996; De la Fuente et al 1999). One prominent form of udder abnormality in WAD goat is the presence of supernumerary teats which was shown to occur at higher frequencies than in the Red Sokoto goats (Amao et al 2003). The variations that occur in the expression of supernumerary teats in matured females are the normal two teat condition, occurrence of one extra teat and occurrence of two extra teats. In a survey of 500 goats, Ozoje (2002) reported that the relative distribution of teats varied: 57% had two teats, 29% had three teats and 15% had four teats. Earlier report by Odubote (1994) revealed that only one West African Dwarf goat out of 1344 sampled had supernumerary teats, pointing to the fact that the incidence of individuals with supernumerary teats has increased over time. Osuagwhu (1985) observed that supernumerary teats do not affect milk yield of the animal nor prevent kids from suckling. However, they present a problem when abnormally large and do not deliver milk to the kids leading to emaciation and death. Another form of udder abnormality in WAD goat is the presence of asymmetrical udder. In a survey of 246 goats by Amao et al (2003), the percentage of does with asymmetrical udder was 0.4% for WAD. Bemji et al (2008) reported that does with symmetrical udder have higher estimates for udder attachment

and produced more milk than does with asymmetrical udder. In view of the apparent increase in percentage of individuals with udder abnormalities over time, this study was therefore designed to evaluate the frequency of occurrence of udder abnormalities.

Materials and methods

Location of study and management of animals

A total of 589 WAD does reared under the traditional extensive system of management by small-holder farmers in Abeokuta, Ogun State in Nigeria were utilized for this study. The region is 76 m above sea level and falls within latitude 7°5.5'N-7°8'N and longitudes 3°11.2'-3°2.5'E. The climate is humid and located in the Derived Savanna vegetation zone of South Western Nigeria. It receives a mean precipitation of 1,037 mm with a mean annual temperature of 34.7°C. The animals were kept on range and minimal housing provided to serve as shelter. Goats were fed with kitchen wastes, cassava peels or corn chaff in the morning before being left to roam the surroundings to forage for grasses and browse plants.

Data collection and analysis

The goats were classified on the basis of number of teats (2-6) by visual appraisal. Udder symmetry was also determined as either symmetrical with equal halves or asymmetrical with unequal halves. Parity of the does ranged from 2-6. Number of individuals with abnormal udder was expressed as a percentage of the total number of animal sampled.

Results and Discussion

The observation that does with the normal two-teat condition were the most prevalent among others (Table 1) corroborates the findings of Odubote (1994), Ozoje (2002) and Amao et al (2003). Odubote (1994) observed that the occurrence of supernumerary teats could be attributed to the presence of a recessive mutant allele which presents this characteristic feature in the homozygous state. The percentage of individuals with supernumerary teats was generally higher than the estimate initially reported by Odubote (1994), while lower than subsequent estimates by Ozoje (2002) and Amao et al (2003). It is interesting to note that a third category of individuals with six teats was identified in the current study. The percentage of does with asymmetrical udder was however higher than previous estimate by Amao et al (2003).

Table 1. Frequency distribution of udder abnormalities in West African Dwarf goat (n=589)

Trait	Sub-class	No. of observations	Frequency, %
No. of teats	2	546	92.7
	3	32	5.43
	4	7	1.19
	6	4	0.68
Udder symmetry	Symmetrical	560	95.08
	Asymmetrical	29	4.92

It can be concluded from this study that the frequency of occurrence of udder abnormalities (supernumerary teats and asymmetrical udder) in WAD goat is low. There is need for periodic investigation of the frequencies of individuals with abnormal udder and their effects on dam's performance since there are

variations over time.

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References

- Amao O A, Osinowo O A, Lakpini C A M, Dipeolu M A, Abiola S S and Onwuka C F I 2003** Types and frequency of udder shapes and abnormalities in West African Dwarf and Red Sokoto goats, *Nigerian Journal of Animal Production* 30(2):253-258.
- Bemji M N, Adepoju I O, De Campos J S and James I J 2008** Udder morphology, teat placement and milking characteristics in West African Dwarf goats. Proc. of 13th Ann. Conf. of Anim. Sci. Assoc. of Nig., Sept. 15-19th, 2008. Ahmadu Bello Univ., Zaria, Nigeria. pp 5-7.
- De la Fuente L F, Fernandez G and San Primitivo F 1999** A linear evaluation system for udder traits of dairy ewes, *Livestock Production Science* 45:171-178.
- Ebozoje M O and Ikeobi C O N 1998** Colour variation and reproduction in West African Dwarf goats, *Small Ruminant Research* 27:125-130.
- Odubote I K 1994** Characterization of the West African Dwarf for certain qualitative traits, *Nigerian Journal of Animal Production* 21: 37-41.
- Osuagwuh A I A 1985** Incidence and control of pre-weaning mortality and abortion in small ruminants. In: *Small Ruminant Production in Nigeria*. Proceedings of National Conf. on Small Ruminant Production held at Zaria, Nigeria in October 6-10, 1985. pp 239-252.
- Ozoje M O 2002** Incidence and relative effects of qualitative traits in West African Dwarf goat, *Small Ruminant Research* 43: 97-100.
- Peris S, Such X and Caja G 1996** Milking ability of Murciano Ganadian dairy goats: Milk partitioning and flow rate during machine milking according to parity, prolificacy and mode of suckling, *Journal Dairy Research* 63:1-9.
- Rogers O W and Spencer S B 1991** Relationship among udder and teat morphology and miking characteristics, *Journal Dairy Science* 74(12):74418-74431.

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