FUDMA Journal of Sciences (FJS)
ISSN online: 2616-1370
ISSN print: 2645 - 2944
Vol. 7 No. 3, June, 2023, pp 29 - 32
DOI: https://doi.org/10.33003/fjs-2023-0703-1784

CONSTRAINTS MILITATING AGAINST GOAT PRODUCTION IN ADAMAWA STATE

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ABSTRACT

In the tropics, small ruminants have low productivity partly due to slow growth rate which had been attributed to disease, poor nutrition, managerial factors and non-genetic factors such as age and parity of dam, sex and type of birth. The study was carried out to investigate the constraints of goats in Adamawa state. The design of the experiment was based on supplements offered. The result obtained in the study showed that: gestation length was short in groups receiving maize bran and cotton seed cake but longer in the control group and significant differences ($P<0.05$) existed between the different groups. Twinning was recorded only in the groups receiving maize bran and cotton seed cake and no significant differences existed. The birth weight of the F1 kids showed significant ($P<0.001$) differences between the groups, the highest was recorded in the control group while the least was recorded in the group receiving maize bran due to incidence of twinning. This indicates that supplementation increases productivity.

Keywords: Birth weight, Gestation length, Red Sokoto goat, supplementation, twinning rate

INTRODUCTION

Goats pay dividends for good management. It is unfortunate, therefore, that there is a widespread and common belief that goats will thrive despite neglect. This popular conception is not true. Successful goat's raisers apply good managerial principles as applied to any other profitable livestock enterprise. Unfortunately, there is a widely prevailing popular belief that goats will eat and do well without any good management practices. This is erroneous, like other animals that are hungry or suffering from minerals or vitamin deficiency, they will develop depraved appetites and chew on many things, but they prefer good quality, whole feeds and will pay dividends when so fed (Ensminger, 1970). The major problem facing third world countries is how to increase the biological value of their menu, improve and maintain the productive potentials of their domestic livestock, given adverse ecological and physiological constraints (Okonkwo *et al.*, 2011). Many developing countries have for long been plagued with the problem of a worsening situation of inadequate consumption of animal protein especially milk (Zahraddeen *et al.*, 2010). The energy and protein intake are grossly inadequate in these countries, leading to low weight for age, and height, various degrees of stunting, higher susceptibility to disease infections, high pre-weaning morbidity and mortality most especially among children who are vulnerable (PRB, 2012). In most tropical countries of Africa, population growth has outstripped food supply. This has brought persistent calls for the improvement of the nutritional status of the citizens through substantial increase in the intake of animal protein. An average Nigerian takes about 7.5g of protein daily. This level is far below the recommended level of 36 g. This low protein intake is connected with the fact that the production of large animals with slow production rate is given more encouragement than short cycle animals with high fecundity rate, low cost of investment, small body size which make it suitable for backyard rearing and easy consumable by a family (Ajimohun *et al.*, 2012, Ohagenyi *et al.*, 2012). The purpose of the study was to investigate the problems affecting goat problems in Adamawa state.

MATERIALS AND METHODS

Location and Description of the Study Area

The research was carried out in the Benue trough block of the state, which is blessed with huge crop and livestock resources. Adamawa state is located at the North Eastern part of Nigeria. It lies between latitude 7^0 and 11^0N of the equator and between longitude 11^0 and 14^0E of the Greenwich meridian. It shares boundaries with Taraba State in the South and West, Gombe State in its Northwest and Borno to the North. Adamawa State has an international boundary with the Cameroon Republic along its eastern border. The state covers a land area of about 38,741km. The amount of sunshine hours range from 2500 in the south to 3000 hours per annum in the extreme north of the state. Maximum temperature is 40^0c particularly in April while minimum temperature is 18^0c between December and January. Rainy season begins in April and ends in October with a mean annual rainfall of 1150mm. Relative humidity ranges from 20-80%. (Adebayo and Tukur, 1999).

Design/Data Collection

A survey was conducted to identify smallholders and pastoral dairy goat farmers in the state. Adamawa is one of the states with high concentration of livestock. A number of factors combine to dictate the types, population and spatial distribution of livestock over the state. The state is divided into four pastoral blocks based largely on similarities in ecological conditions (i.e., Toungo block, Jada-Mayobelwa block, Benue Trough block and Hong – Michika Block) (Adebayo and Tukur, 1999). The survey was carried out in the Benue trough block. It is the largest block covering about 11,000km^2 making up 31.8% and contains 50.5% of the total goat population of the state. It is a grassland area characterized by the flood plains of the Benue and of its tributaries such as rivers Gongola, Kilange and Ine. The study covers Fufore, Yola South, Yola North, Girei, Song, Demsa, Lamorde and Gombi Local Government areas of the state. Thirty (30) questionnaires were distributed randomly in each of the local government areas of the study area. A total of two hundred and fourty (240) structured questionnaires were used. Information required were, age, sex, marital status, years of experience, breed of goats reared, education level of

respondents, system of management, source of labour, frequency of milking, mode of processing and problems of goats production. The experiment lasted for one year.

Statistical Analyses

The data collected from the four treatment groups were analyzed for variance using a complete randomized block design procedure (Steel and Torrie, 1980). While significant differences between treatment means were determined using LSD.

RESULT AND DISCUSSION

As indicated in table 1, the study revealed that majority of the goat keepers in the study goats for income generation especially for taking care of the educational needs of their children, for purchase of drugs of cattle and for buying food items for the family especially when crop fails, and it constituted 64.58%. However, Alemitu and Abera (2018) as well as Shigute. and Anja (2018) reported higher percentages.

Table 1: Distribution of Respondents According to Reason for Keeping Goats

Purpose	No. of Farmers	% of farmers
Income	155	64.58
Milk	29	12.08
Meat	21	8.75
Ceremonies	6	2.5
Others	29	12.08

Farmers that kept goats for the purpose of milking them constitute 12.08% and was the second largest group after income. Others kept goats for their meat and it constituted 8.75% of the farmers in the study area. Some farmers in the study area reared goats in order to use them during ceremonies and they constituted 2.5%, Shigute and Anja (2018) also reported a similar reason for keeping goats. The rest of the farmers in the study area kept goats for some reasons other than those mentioned above and constituted 12.08% of the farmers in the study area.

Table 2: Breeds of Goats reared in the Study Area

Breed	Number	Percentage (%)
Sokoto Red	163	67.9
Sahel	15	6.25
Mixed breeds	62	25.83
Total	240	100

The different systems of managing goats adopted by farmers in the study area show 40.24% of the respondents kept their goats under the free-range method as earlier observed in another study Arse *et al.* (2013). Tethering system for managing animals was adopted by 14.17% of the respondents in the study area. Arse, *et al.,* (2013) reported the village herding system ranked the second largest after free-range system and accounted for 30.0% of the respondents in the study area. Solomon *et al.* (2010) earlier reported similar trend in a study in Ethiopia. While. Cut and carry system made up of 15.42% of the farmers in the study area as shown in table 3.

Table 3: Systems of goats Management in the study

Management System	No. of farmers	Percentage (%)
Free range	97	40.42
Tethering	34	14.17
Village herding system	72	30.00
Cut and Carry	37	15.42
Total	240	100

Table 4: Educational Level of Respondents in the Study Area

Level of Education	No. of farmers	Percentage (%)
Illiterate	103	42.9
Primary School	56	23.3
Secondary School	36	15.0
Tertiary Institutions	32	13.3
University	13	5.4
Total	240	100

The respondent's level of experience and sources of labour indicated that 10.83% of them possessed a level of experience in goat rearing between 1-5 years. Farmers that reared goats between 6-10 years made up 29.58%. While majority of the farmers i.e. 35.83% possessed a level of experience in goats farming of between 11-16 years. The result of the analysis also shows that farmers that have an experience level of between 17-26 years made up 14.17%. While 9.58% of the respondents reared goats for more than 26 years as indicated in table 4.10. However, the result of the analysis also indicated that 39.17% of the farmers in the study area used hired labour (Solomon *et al.,* 2010) especially by children in keeping their animals, while majority of the farmers in the study area used family labour in managing their goats and it made up 60.83% as shown in table 5.

Table 5: Respondents Level of Experience and Source of Labour

Years	No. of farmers	% of Farmers
1-5	26	10.83
6-10	71	29.58
11-16	86	35.83
17-26	34	14.17
> 26	23	9.58
Hired	94	39.17
Family	146	60.83

The result of the analysis of problems of goat farming in the study area shows that 12.50% of the respondents indicated that conflict with crop farmers and households was the major problem they were facing during their years of experience in goats farming (Zahraddeen, *et al.,* 2008). Lack of extension workers that will enlighten the farmers on new innovations, veterinary services and importance of goat milk as the other problems they faced in goat farming and they accounted for 14.58% of farmers in the study area, Arse *et al.* (2013) in study had similar result. Some farmers indicated automobile accidents as the problem they faced in goat farming and it made up 9.17% of the respondents in the study area. The results of the analysis show that 40.42% of the farmers indicated that lack of feed materials especially during the dry season as the problem they encountered during their years of experience in goat farming and these served as the major problem of farmers in the study area. Disease problems accounted for 23.33% of the problems of goat farming as indicated by the respondents in the study area as shown in Table 6. Disease as one of the major constraints in goat farming was also reported by Solomon *et al.* (2010).

Table 6: Problems of Goat Production in the Study Area

Source	No. of farmers	%
Conflict with farmers and House holds	30	12.50
Lack of Extension Services	35	14.58
Automobiles	22	9.17
Lack of Feed	97	40.42
Disease	56	23.33
Total	240	100

The result also shows that endoparasite infestation accounted for 10.71% of the respondents in the study area. Mastitis as a disease of dairy animals accounted for 17.86% of goat farmers in the area investigated. Of the common diseases encountered by goat farmers in the study area, ectoparasite infestation accounted for 19.64%, result of the analysis of the common diseases of goats in the study area also shows that pes des petit ruminant (P. P. R.) accounted for 51.78% of the diseases of goat in the study area, it also indicated that it was the major disease encountered by farmers in the area investigated as shown in Table 7. As mentioned by Zahraddeen *et al.* (2008) in their study on evaluation of some factors influencing growth performance of local goats in Nigeria.

Table 7: Common Diseases of Goats in the Study Area

Diseases of Goats	No. of Farmers	Percentage of Farmers
Ectoparasite	11	19.64
Endo parasite	6	10.71
Mastitis	10	17.86
P. P. R	29	51.78
Total	56	100

CONCLUSION

The problem of inadequate feed appeared to be the major constraint of goat production especially during dry season. While P. P. R. appeared to be the most common disease that affects goat production in the state. Substantial improvement in goat production can be achieved through better nutrition and management, which will help in reduction of goat diseases and mortality and the use of hired labour and better housing to protect them from adverse weather conditions.

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