

INFERENCE FROM THE STUDY FUDMA'S TOP BUCK AND FLOCK QUEEN RAISED UNDER SEMI-INTENSIVE SYSTEM: TECHNICAL REPORT

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ABSTRACT

The aim of this paper was to provide insight on a dominance nature and other social behaviours observed from two most hierarchal goats in Livestock Teaching and Research Farm, Federal University Dutsin-Ma goat flock. Being goat as social animals, therefore having knowledge and clearer understanding on how goats interact with each other and react with caretaker will be of significant importance and part of management practices that one will put into consideration. An experience herdsman were opportune to carefully observed and noted both indoor and outdoor dominance behaviours of top buck and flock queen in the farm for a period of five years. His cumulative experience from these two categories of goats was discussed under dominancy pattern. This discussion reveals that despite their dominance behaviours which may sometimes be detrimental to flock mates. we therefore, learned a lesson that Fudma's top buck and flock queen are responsible in coordinating most the flock social activities and leading the flock in a stylish hierarchal order and good leadership.

Key words: Top buck, Flock Queen, Dominance Behaviour, and Goat

INTRODUCTION

Raising goat requires more than knowledge of feeding, breeding and other routine management practices (Gaddafi *et al.*, 2019). It is obvious, under natural conditions; goat flock will establish a "pecking order" also known as *dominance pattern*. This pecking order helps to limit aggression among the herd members and may change from day to day. Once a herd pecking order is established, two special goats become responsible for the herd's welfare. The most dominant bucks becomes what is called the "Top Buck" while the most dominant doe is called the "Flock Queen" and this two special goats exhibits certain unique behaviors that are contrarily different and not identified from their flock mates.

Dominance is the social organization in which animals interact most of the time with aggressive or submissive behaviours, leading to the creation of a rank system. The emergence of dominance hierarchies in social animals is very common in nature and has the function to reduce cost and risks on injury during resource (mainly food, territory, or mates) acquisition and defense. In an ultimate view, dominance hierarchies are supposed to increase fitness of all individuals involved in this social organization, mainly the dominant. Rank in the hierarchy influences behaviour, physiology, health and ability to mate (Kochhann, 2017). This paper is designed to provide an insight on a few social organizational and dominance behaviours of Fudma's Top Buck and Flock Queen managed under semi-intensive system at Livestock Teaching and Research Farm, Federal University Dutsin-Ma, Katsina State.

MATERIALS AND METHODS

Study area: this study was conducted in the Livestock Teaching and Research Farm, Department of Animal Science, Federal University Dutsin-Ma, Katsina State. It lies within latitude 11° 7' and 13° 22' N and Longitude 6° 52' and 9° 2' E (Abaje *et al.*, 2014)

Observed Animals: Fudma's Top buck and flock queen are red Sokoto breed of matured-fertile and most hierarchal male and female goat respectively. They are about 6 years old they are the most large-bodied animals with horns and beard. Fudma means Federal University Dutsin-Ma.

Management System: the animals are managed under semi-intensive grazing system where the animals are allowed to graze within the pasture unit and other farm premises to get access and graze available pasture, crop by-products, browse trees and poultry litter while later in the evening they returned to well established block house, concretized floor with galvanized roofing sheets that provide

absolute protection from harsh environmental condition. Supplementary feeding, clean water and medication were given to the animals.

I-Dominance Behavior in Feeding: under semi-intensive system the flock queen is responsible for driving and leading the flock to the best grazing areas. She is intelligent enough to find a suitable spot where there are palatable grasses, legumes and browse plants that are suitable for goats to graze, the remaining flock mates will join her to graze in the same area. It is also interesting enough to know that flock queen develop an interesting ritual when the flock queen comes upon a plant that is inedible or poisonous in nature. She begins by sniffing the plant and then snorting which is an indication of obvious dislike for it. All the flock mates will equally reject it by practicing the same (smelling the same plant, thereby using its scent as identification of that particular plant).

II-Dominance Behaviour in Driving: top buck is responsible for driving the flock from the rear, the flock queen is at the front and she is responsible in directing the flock mate where they will graze, time for drinking water and coming back home after grazing.

III-Dominance Behaviour in Mating: during breeding season, the buck will try to attract does to himself by urinating on his front legs and chest. The does in heat are attracted to the odour of the buck's urine. The top buck also has scent glands located in front of his horns and these give off another attractive odour to the females in estrus. Top buck is responsible for breeding the does. The other bucks in the flock, they become "social castrates" or "peripheral males" because they do not breed.

IV- Agonistic behaviour: aggression is a common behaviour in animal species. Animals often use aggressive behaviour to defend a resource, compete for mates, to defend against predators or during foraging. Top buck retained his form of rearing and butting to maintain his flock hierarchy. Usually he stands about 4 to 6 feet apart, then rear up so that his body is at right angles to the opponent, with his head turned and facing toward the opponent. They then pivot and lunge forward and down to the ground, coming together in a sharp crack. The top buck will keep doing this until he chases the opponent out.

V- Maternal-offspring behaviour: top queen practices high mother-kids protection against mate attacking compared to other does. Fudma's flock queen kindles two kids during the months of August 2019 and her kids are the most protected in the flock. She normally prevents and hides them from attack by flock mates, danger, harsh environment and flock attendants' reaction towards them. She has experiences to develop early cues for neonate recognition of mother because few minutes after parturition she begins actively licking and kid grooming. These cues are complex interplay of vocal, visual, olfactory and gustatory stimuli.

VI- Behavioural responses to thermal stress: Both top buck and flock queen exhibit an interesting behaviours that aid thermoregulation and the maintenance of water balance including timing of activity, diet selection, use of microhabitats, social behaviours, body orientation, defecation and urination. During hot season, flock queen normally drive them in an area where there are availability of browse plants and towards the pasture unit of Livestock Teaching and Research Farm, FUDMA in search of fresh irrigated pasture, they normally show them a lesson to select only a few leaves from each plant and ingests the foliage parts while during the period of cold season she begins by driving them to the poultry unit where they will graze on poultry litter first before moving ahead in search of crop by-products and grasses in the farm.

Generally, the flock preferred feeding at early morning or late evening or when the sky is clouded or just before and just after sunset, while they tend to avoid feeding around midday at a very hot times.

Fudma's top buck avoid sitting in the sun, he likes spending sometimes lying down to rest and later spend more time standing under the shade when there is excessive heat stress and this will be probably a physiological mechanism that will help him to maximize the evaporative heat loss from the body surface and assist in convection by standing more time to get away by the conductive and radiative heat from the hot ground surface.

VII- Other Behaviors: top Buck and Flock Queen are responsible in coordinating various activities, discipline and exhibiting stylish leadership in responses to danger, thermal stress, access to space and ability to have access with favourable shelter.

When danger approaches, the flock queen stay calm and rigid in a typical nursing posture with ears towards the source of alarm if the danger consist sound production, if the danger source is soundless,

the flock queen stand rigid and study the nature of danger then developed alarm behaviour to notify the others. Flock queen may snort loudly several times to alert flock mates, they may move away slowly, scatter, run quickly, face the enemy or return to previous activities depending on the type, degree and intensity of danger. Flock queen is very good enthusiastic vocalizer because she adopt a wide range of noises for different purposes like danger, hunger, attendant recognition, calling new-born kid, mating, agonistic behaviour, sighting of feed and smell recognition such as bleating, snorting, and sneezing.

CONCLUSION

It is therefore concluded that dominance hierarchy emerges in the goat flock by top buck and flock queen helps to organize priority in accessing the limited resources. Top buck and flock queen social dynamics and physical attributes help them to maintain their dominance order in the flock.

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