JOURNAL OF AGRICULTURE & SOCIAL SCIENCES
ISSN Print: 1813–2235; ISSN Online: 1814–960X
09–034/AWB/2010/6–1–11–13
http://www.fspublishers.org

Full Length Article

Acceptability and Consumption of Goat Milk in Adamawa State, Nigeria: A Case Study of Mubi North and Mubi South Local Government Areas

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ABSTRACT

A study was conducted to determine the consumption and acceptability of goat milk. One-hundred and fifty questionnaires were randomly administered in the month of November 2008 to goat farmers in both Mubi South and Mubi North local Government Areas. Data showed that 70.8% of the respondents rejected and 23.6% rejected the consumption of goat milk because of the little quantity (3.38 kg per week) and 1.39% of the population also rejected the consumption of milk based on the milk odor and traditional believes, while 4.2% of them indicated the consumption of milk. It is concluded that there is need to improve the milk production potentials of local breeds of goat as well as creating awareness on the value of goat milk to human nutrition. Further processing was advocated to remove or reduce the billy odor, which was indicated as deterrent. © 2010 Friends Science Publishers

Key Words: Goat milk; Consumption; Acceptability

INTRODUCTION

The Red Sokoto goat is probably the widest spread and well known type in Nigeria. It is the common village goat in the northern two-thirds of the country. The goat has an average milk yield of 3.8 kg per week. The Red Sokoto is still known for its suitability for fine leather. It is also known to be more prolific than other breeds of goats in Nigeria.

Goats contribute to the subsistence of small holder and landless rural poor. They are mainly kept for meat. Goat milk, skins and manure are often considered as by-products. Meat production is the main reasons for keeping goats in Nigeria (Payne, 1990). Goat milk is rarely used for human consumption. There is awareness about the unique importance of goat milk for human nutrition and health (Parkash & Jenness, 1967; Haenlein, 1992). It is particularly rich in antibodies and low in bacteria count especially when freshly drown (Belanger, 1975) and sometimes recommended by the physician in treatment of many human ailments such as hyperlipoproteinemia, intestinal reaction, coronary bypass, childhood epilepsy, cystic fibrosis, gallstones etc. (French, 1970; Haenlein, 1992). While composition of goat milk in temperate countries has been extensively studied and reviewed (Parkash & Jenness, 1968; Jenness & Sloan, 1970; Jenness, 1980; Haenlein, 1992), little work has been done in the tropics.

Goats play important role in income generation, capital storage, employment generation and improving house hold nutrition. Goat milk is easily digestible, because smaller sized fat globules making softer curd (Banerjee, 2008). It also has much less allergic problems than milk of other species of livestock. Goat can be milked as often as required preventing milk storage problems. Goats are less prone to toxic effect of toxic shrubs as judged by clinical symptoms. They have high dry matter and fibre digestibility and thus can subsists on poor woody vegetation which no other specie will consume (Banerjee, 2008).

Although there is similarity between cattle, goats, sheep and buffaloes in the genetics of milk production, there is evidence that on live weight bases goat is more efficient milk producer than the other species (Malau-Aduli *et al.*, 2001). The goat also has higher feed conversion efficiency to meat and milk than cow, sheep and buffaloes (Okello & Obwolo, 1985). There is also less risk in goat farming especially in drought prone areas, higher capacity of flock size recovery, because of their higher prolificacy, and fewer requirements in housing and management (Banerjee, 2008).

Globally goat production yields 60% of its value as milk, 35% as meat and 5% as skin (Davendra & Mcleroy, 1988; Malau-Aduli *et al.*, 2001). Webster (1989) reported that countries like Iraq and Libya obtain half of their total milk requirements from goats. This study was conducted to determine the level of consumption and acceptability of goat milk in Mubi and explore the reasons for non acceptance of goat milk consumption.

To cite this paper: Midau, A., A. Kibon, M.S. Morrupa and C. Augustine, 2010. Acceptability and consumption of goat milk in Adamawa State, Nigeria: a case study of Mubi North and Mubi South local government areas. *J. Agric. Soc. Sci.*, 6: 11–13

MATERIALS AND METHODS

Study area: Mubi area lie within Northern Guinea Savannah zone of Nigeria and located at latitude10°00 north, longitude 13°30 east and about 305 m above sea level, with an area of 961.39 km^2. The dry season in this area commences early October and last up to April. The raining season begins from May and attains its peak between July and August and declines in September. The mean annual rainfall is 1050 mm, while the relative humidity is extremely low 20-30% between January and March and starts increasing as from April and reaches a peak of about 80% in August and September. Relative humidity starts to decline from October following the cessation of rains. The maximum temperature can reach 40°C particularly in April, while minimum temperature is about 18°C between December and January. A variety of livestock include cattle, sheep, goats and pigs. The dwarf goats are the most common breeds found around Wimtim hills (Adebayo & Tukur, 1999).

Mubi area consists of 21 political wards, 11 wards in Mubi North and 10 wards in Mubi South, with a population of about151,072 in Mubi North and 128,937 in Mubi South local government areas (NEC, 2006). Mubi is bounded to the South by Maiha local government area, to the West by Hong local Government Area and to the North by Michika local Government Area and to the East by Cameroun republic. The people are predominantly farmers most households keep livestock and poultry in subsistence numbers.

Data collection and analysis: The simple random sampling procedure was used to select at least 6 respondents per ward, data were collected on the following attributes; management system employed the number of goats kept by the farmer, breed of goats, reasons for keeping goats, consumption and acceptability of goat milk, the milk yield and the most preferred milk among cow, goat and sheep milk. Data was collected in all the 21 political wards of the two local Government Areas. The questionnaires were shared based on the population of each local Government Area, therefore 80 goat farmers were selected in Mubi North and 70 in Mubi South Selection was through home visit, and questionnaires were given to them and independent response collected. Milk yield was estimated by milking dry each morning and measured, while the kids are restrained from the dams. A total of 144 respondents were assessed. Data generated were summarized as simple percentage.

RESULTS AND DISCUSSION

Management systems of the goats: The most common management systems of goat practiced in the urban areas were the Cut-and-carry, where forages and other feeds are brought continuously to the confined animals. Tethering and free roaming as similarly reported in other places (Djajanegara & Setiadi, 1991; Bradford, 1993; Sodiq *et al.*, 1998) are the common systems in villages. It was also found that the common breeds of goats kept by the farmers in this area were the dwarf goats followed by Red sokoto goats.

Free roaming is the most common system of goat production employed in the villages; this is because cropping is restricted to a limited wet season. The goats are allowed to range freely in the dry season and confined as soon as the crops are sown. They are released as soon as the crops are harvested and are mostly released to grazing fields in the morning. In the evening, they are brought back and enclosed in huts made for the goats and sometimes fed browse in the night. The cut and carry system is found around Mubi town, this may be, because of the high population density around this area; although there are no crop farms, community ordinances usually enforce the confinement of all livestock species.

Goat milk consumption: During the dry, pastoralist group from the republic of Niger, such as the Buzaye, Nadaranko'en, Zomanko'en, Uda'en and Kekkatanko'en bring large herds of goats into Northern Nigeria. Milk and nono from their goats are regularly offered for sale in nearby markets. Goat milk is preferred to cows' milk and therefore commands a much higher price. This contrasts with other parts of Nigeria, where goats' milk is regarded as undrinkable. Comparison between the milk prices of cow and goat was recorded in Sokoto state in mid 1990. It was reported that a measure of large cup cow milk cost N2.50, while goat milk was N5.00 a calabash of cow milk was sold at N3.00, while goat milk was sold at N5.00. Table I Shows the reasons for keeping goats, about 86.8% of the farmers produce for income, 12.5% for household meat supply and 0.69% for ceremonial reasons.

Table II. Showed the result of those who milk their goats for different purposes viz; for consumption (4.2%), those for sale (1.39%), while (4.9%) use it for medicinal and other purposes. A total of 10.4% uses the milk and 86.9% do not milk or use the milk. The result of Table II also revealed that 70.8% do not consume goat milk at all, 23.6% do not consume, because of the little quantity of the milk obtained from the goats, which is not enough to be consumed. This is an indication that such group of people would likely consume the milk if the quantity of the milk might have been increased based on odor, about 1.39% do not consume goat milk. The low yielding potentials of local goats might be one of the barriers for increased interest in goat milk consumption in addition to tradition in Mubi area.

Low yield was one of the reasons of non consumption of goat milk in this locality; the milk odor also plays a role as indicated by about 1.39 % of the respondents based on the smell of the milk, as a result of which none of the respondents kept goat for milk production.

CONCLUSION

There is a need to improve milk production potentials of the local breed through breeding, nutrition, improved

Table I: Farmers reasons for keeping goats

Purpose	No. of farmers	% of farmers
For income	125	86.8%
For meat	18	12.5%
For ceremonial purposes	1	0.69%

Table II: Number of respondents that milk their goats and those that don't milk their goats

		No. of farmers	% of farmers
i.	Those that milk their goats	15	10.4%
ii.	Those that don't milk their goats	129	89.6%
	Utility		
iii.	Those milking for consumption	6	4.2%
iv.	Those milking for sale	2	1.39%
v.	Those milking for medicine	7	4.9%
	Reasons for non-consumption		
vi.	Those that responded not drinkable	102	70.8%
vii.	Those, because is of little quantity	34	23.6%
viii.	Tradition and odor	2	1.39%
ix.	Others	6	4.2%

management systems as well as creating awareness on nutritional value of goat milk. There is also need for milk processing, to reduce or eliminate the buck odor mentioned by respondents as another reason. These might increase goat milk consumption, income and a better health status of the families.

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(Received 29 June 2009; Accepted 02 October 2009)