

Assessing Donkey Production and Management in Bunkpurugu/Yunyoo District in the Northern Region of Ghana

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ABSTRACT

A study was carried out to ascertain the production and management of donkeys in some communities in the Bunkpurugu/Yunyoo district. Ten communities were purposively sampled and the donkey owners were sampled using snowball sampling. A total of 100 donkey owners were interviewed using semi-structured questionnaires on biographical information of farmers, flock structure and management systems, feeding and watering, reproduction and breeding and diseases, mortality and management. Linear body measurements such as Heart girth circumference (HG), Height at withers (HW), Body length (BL), Neck length (NL) and Head length (HL) were taken on 144 donkeys. Donkey keeping is an important activity to farmers in the district. They provide cheap means of transport to farmers who cannot afford mechanical power. Their use for supplying water to household was ranked (1.31) as the most important role whereas carting of goods to market and farm implements to and from farms was the second most important role. The least role was for income generation. Donkeys roam and graze freely during the dry season but are tethered during the rainy season to graze. The animals mate randomly at pastures. Sores on the skin, worm infestation and foot diseases were some of the diseases conditions identified. Challenges such as feed scarcity, theft and urbanization were also reported. Mean HG, HW, BL and NL of donkeys in the district were 116.0cm, 91.7cm, 99.1cm and 33.7cm respectively. There was no difference between communities with regards to most of the management and production practices as well as challenges investigated indicating that these activities are practiced similarly among the farmers in the district.

Keywords: carting, owners, tethered, feed, transport

INTRODUCTION

In Ghana donkeys (*Aquus asinus*) can be found mostly in the north- eastern part, stretching from some districts in the eastern corner of Northern region to the entire of Upper East region and some areas of Upper West region (Canacoo, 1994). Donkeys provide cheap and easily accessible means of transport for goods in the rural areas.

They are predominantly used to pull cart with agricultural products from farms to homes and to markets centers and farm inputs to farms. They are capable of surviving in hot climate such as tropical dry lands and the savannahs (Pal et al., 2000).

Donkeys have very good draft power, disease resistance and stress bearing capacities (Gupta et al., 2000).

The introductions of mechanical means of transport and power in donkey rearing

communities have replaced donkeys in those areas. Farmers who cannot afford the services of mechanical power for their farm operations rely heavily on donkeys. Donkeys are the main means of transport of agricultural goods and farm implements in the study area.

However, attention has not been given to the animal as an important livestock as it is not included in related studies nor there is any published information on the species, breeds, breeding systems, feeding and management practices in Ghana.

With regards to its importance and contributions to leather and agricultural sectors, it would be necessary to study and document the production and management practices of donkeys in the district and the country at large.

This study was aimed to determine whether there were differences in the production and management of donkeys in communities in Bukpurugu/Yunyoo district.

MATERIALS AND METHODS

Study Area

This study was carried out in the Bunkpurugu-Yunyoo district located at the North-Eastern part of the Northern region of Ghana. The district experiences a single rainfall pattern from May to October with Mean annual rainfall of between 100mm to 115mm.

It lies in the Guinea Savannah ecological zone and has grasses as the common vegetation interspersed with few trees such as Shea trees and Need (GSS, 2014)

Sampling and Data Collection

Ten communities were purposively sampled in the district. Snowball sampling was used to obtain ten farmers in each community. Individual farmers were then interviewed by administering a semi-structured questionnaire. A total of five linear body measurements were taken on 144 donkeys. Observation was used for some of the physical descriptions of the animal.

Parameters Taken

Linear body measurements taken on the donkeys were: Height-at-withers (HW) Body length (BL), Neck length (NL), Heart girth (HG) and Head length (HL). All measurements were in centimeters. Measurements were taken based on that reported by Nininahazwe et al., (2017).

Statistical Analyses

The data was analyzed using statistical package for service solution (SPSS) version 20.

Table 1.2 Mean Donkey Herd Structure in the District

community	Mean no. of donkeys	Young males (%)	Adult jacks%	Young females%	Adult Jennets
Bunkpurugu	2±0.22 ^a	23.8 ^a	23.8 ^a	9.5 ^a	1±0.18 ^{ac}
Bamongu	3±1.2 ^b	0.0 ^b	14.8 ^a	40.7 ^b	1±0.13 ^{ac}
Nanyiar	2±1.04 ^b	13.0	13.0 ^a	26.1 ^b	1±0.23 ^{ac}
Nanyiar-Paak	2±0.10 ^a	16.7 ^a	16.7 ^a	22.2 ^a	1±0.13 ^{abc}
Jilik	2±0.17 ^a	16.7 ^a	22.2 ^a	27.8 ^{ab}	1±0.16 ^a
Tojing	2±0.13 ^a	16.7 ^a	5.6 ^b	33.3 ^a	1±0.13 ^{abc}
Kanbagu	2±0.15 ^a	15.8 ^a	15.8 ^a	26.3 ^a	1±0.13 ^{abc}
Paknatiik	3±0.34 ^{ab}	9.5 ^a	28.6 ^a	19.0 ^a	1±0.23 ^{ac}
Kpentaung	2±0.68 ^a	15.8 ^a	21.0 ^a	21.1 ^a	1±0.13 ^{abc}
Bunbuna	2±0.19 ^a	40.0 ^a	13.3 ^a	33.3 ^a	1±0.13 ^b
P values	< 0.01	<0.05	<0.05	<0.01	<0.01

System of Management

Information given by the respondents revealed that 79% of them keep their donkeys extensively, 20% practice the semi-intensive system while only 1% keep donkeys intensively. This is shown in figure 4.0 below. The animals

RESULTS AND DISCUSSIONS

Herd Structure

On average each farmer keeps two donkeys in the district. But the results showed that there was a significant difference among the communities in terms of number of donkeys farmers keep. Bamongu community varied significantly with all the communities except Nanyiar and Paknatiik.

The difference could be due to the location of the communities and the roles donkeys play in those communities. Donkeys' role in a form of carting of goods and water supply to households are still valued in Bamongu community unlike other communities where 'motor-king' and other mechanical power perform the roles that donkeys do. Potable water such as stand pipes and borehole have accounted for the differences in donkey population between some of the communities as donkeys no longer play significant role of supplying water to some household in the district.

Moreover, urbanisation cannot be left out as a factor influencing the differences in donkey population between the communities as some communities are far more developed than others. Jennets (Female donkey) population dominates that of jacks in the district. Male donkeys are used for most of the tedious works such as ploughing of land and carting of heavy freight while females are used for the minor works. Table 1.4 is an illustration of this discussion.

roam freely and fend for themselves and later return home. The higher percentage of the donkeys kept in extensive system of farming means that mating is not under control and this influences the breeding system in the district. There were no differences between the

communities as far as the system of keeping donkeys in the district was concerned. The 79% of those who practice extensive system was distributed throughout the district.

Coat Color

The distribution of coat color of donkeys in the district revealed that 80.5% of the donkeys have shades of grey color, 9% white, 8.3% ash color and 2.1% brown. The color of the animals was given by farmers or described in relation to objects and was confirmed by observation during measurement of the body parameters. The color was uniformly distributed throughout the district. No community recorded a specific color of donkeys in the district.

Housing and House Type

The survey showed that 44% of the respondents allow their donkey to freely roam without providing housing. Some farmers indicated that donkeys have good immune response and can survive both in cold and dry environments hence there was no need to provide housing. However, some said resource constrains caused their inability to provide housing for their animals. During wet season these farmers tether their donkeys in front of their houses.

This could be the reason for the associated flies attack and lumps on the skin during rainy season. Fifty six percent (56%) of the farmers provide houses for their donkeys. Over 95% of donkey keepers in northern Tanzania allow their donkeys to graze freely in the open pastures (Swai and Bwanga, 2008).

Factors to Consider During Selection of Donkeys for Breeding

The result showed that 82% of the farmers do not select males and female for breeding purpose. Two percent of the farmers based on disease resistance during selection, 8% considered strength of the animal, 3% considered hoof shape and size, 3% also considered growth rate while the remaining 2% were interested in the body size of the animal for selection. Seventy-nine percent of the respondents keep their donkeys under the extensive system. As the animals roam freely to graze, random mating occurs on pastures.

Reasons for Rearing Donkeys in the District

Out of the 100 respondents, about 56% of them use their donkeys principally to supply water to the household. Potable drinking water is still a

challenge in some of the communities as mechanized boreholes are not many and pipe borne water is absent in most of the communities. Donkeys are therefore, used to cart water from rivers to homes and wells usually drilled along river banks.

About 39% percent were found to use their donkeys for carting of farm implements, inputs and farm produces to and from the farm to their homes and to markets centres, whereas only 5% keep their donkeys for breeding young foals. Donkeys are kept in Africa for four reasons: work, breeding, milking and meat. Of these, work is by far the most important (Roger et al 2003).

Feeding of Donkeys in the District

The survey showed that 97% of the respondents tether their animal to graze on the grasses within the catchment area of the rope length during the rainy season whereas 3% supplement their donkeys with concentrate after a day's grazing. According to the farmers, donkeys can feed throughout the day without stopping and even all night if not confined.

During the dry seasons, 20% of farmers who practice the semi-intensive system said their animals are usually supplemented with hayed legumes leaves and vines, pito mash and brans of cereals while 30% depend solely on grasses.

Health Constraints

The most common diseases/conditions encountered in the study area were sores on the skin (usually legs), lumps in the skin, worms and foot rot. The analyses showed that 41% of the respondents recorded the incidents of sores on the skin especially on the back and legs. The owners indicated that the disease is rampant in the rainy season, a period conducive for breeding flies such as mosquitoes and houseflies. It is be worse on farms that the animals do not have rooms.

Foot rot recorded 14%, worm infestation 13% whereas lumps in the skin recorded 15%. However, seventeen percent (17%, n=100) of the owners said they do not encounter any diseases on their donkeys except weakness after work.

Problems Facing Donkey Production in the District

The surveyed indicated that 49% of the farmers experience feed shortages as the most pressing

challenge of their production. This could be attributed to increasing crop production and urbanization that make use of the pasture lands. The other challenges were; theft which recorded 15%, mortality 15%, diseases 2% while only 1% complained of urbanization. Each donkey would require about half an acre when kept at pastures and stable area of 3.3m²/donkey should be available year round (TDS, 2015). Theft was also reported by the respondents as challenge in the area. Donkey owners in Kanbauk, Kpentaung and Bunbuna communities were much affected by theft.

Use of Motor-King and Environmental Challenges (N=100, No. Of Farmers)

The introduction of mechanical power such as motor king in the area is viewed as a threat to the survival of donkeys in the area. Seventy-four percent (74%) of the respondents indicated that mechanical power has taken over the activities of donkeys in the area which has compelled some donkey owners to sell all their donkeys and others keep small number while 26% did not complain.

Thirty percent of the donkey owners indicated that the environment has not changed with regards to feed and water availability whereas 70% said it has changed. Of the majority who indicated that the environment has changed, much of the effect was attributed to low rainfall (84.3%), followed by heavy rainfall (11.4%) and excessive drought (4%). Only farmers in the Bunbuna community complained that excessive drought was the main factor that has influenced feed and water availability.

With regards to the effect that the environment has on food and production, most owners (57%) indicated that it does have effects whereas 43% indicated that it does not.

Average Linear Body Measurement of Donkeys

The average HG, HW, BL and NL of donkeys in the district were 116, 91.7, 99.1 and 33.7 respectively. There was no significant difference ($p > 0.05$) between the communities with regards to these body measurements. This could be due to the fact that the animals being measured were of same age and height during the research. Management system could also influence the body parameters but since there was no difference between communities in management practices, animals will have similar body measurements.

CONCLUSION

Feeding, watering, diseases and management are the same throughout the district. The research showed that there is random or no control mating of donkeys in the district. Feed scarcity, theft and foal mortality were some of the major challenges raised by the farmers in the district. The challenges were also the same except theft that was recorded in only five communities in the district. Inadequate veterinary service was also one of the challenges. Carting of goods, water supply and income generation are the roles donkeys play in the district but water supply is the most important.

IMPLICATIONS

Donkeys are likely to be extinct from the district as work animals considering the numerous challenges facing their owners and the animal itself.

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