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Performance assessment of sedentary pastoral managed cattle in Yewa-Awori Axis, Ogun state, Nigeria

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Target Audience: Pastoralists, Researchers, Extension agents, Policy makers

Abstract

Performance assessment of sedentary pastoral managed cattle in Yewa Awori Axis, Ogun state, Nigeria was studied with 125 sedentary pastoralists in 5 Local Government Areas (Ado Odo/Ota, Ipokia, Imeko Afon, Yewa South and Yewa North) of Yewa Awori, Ogun State Nigeria. Direct observation and survey methods were used with the aid of structured questionnaires.Results show that 56% were within the activeage of 31-45 years old.Male, female, Muslim and married sedentary pastoralists were 95%, 5%, 100% and 80% respectively. The 52% and 48% had non formal education and First School Leaving Certificate, 6-10 years (32%) was the highestoccupational experience and crop farming (80%)was additional occupation. The 88% of the sedentary pastoralist reared cattle alone while 12% combined sheep and cattle together.White Fulani (Bunaji) is the common breed (44%), followed by N'Dama breed (28%). Sokoto Gudali and Black Bororo (8%) breeds of cattle were not common. Forages recorded highest (68.80%) feed resources, 79.20% involved in ethno veterinary and 56.00% sold the animal at farmgate. Milk off take (lit./day), lactating length (mth), pregnancy rate (%), calving rate (%), calving interval (mth), age at 1st calving (mth) and weaned calf crop (%) were 9.92, 4.84, 72.86, 63.86, 1.31, 7.78 and 63.44 respectively. Moreso, calf mortality in the 1st week of life, mortality between the 1st week of life and mortality between weaning and 1st year were 1.4, 0.12, 0.10, and 2.86 respectively. The majority (71.43%) of the respondents reported that calf mortality has no definite time while 28.57% agreed that calf mortality can occur at any time of the year. Conclusively, sedentary pastoral management of cattle has a great potential forcattle production in South West, Nigeria.

Key words: Sedentary pastoral, Cattle, Nomads, Management, Ogun State

Description of Problem

Livestock production is one of the major areas in agricultural sector that plays a veryimportant role in socio-economic development of people because it provides meat, milk and otherproducts (1) needed for good health. Cattle production in Nigeria is traditional with

90% of the cattle production being managed by the sedentary and transhuman Fulani pastoralists (2). Majority of cattle were managed in northern part of Nigeria due to availability of feed resources such as grass and low incidence of diseases, particularly trypanosomiasis transmitted by tsetse flies.

The Hausa-Fulani indisputably represent a significant component of the Nigerian economy especially Animal agriculture. They constitute the major breeders of cattle, the main source of meat, the most available cheap source of Animal proteins consumed by Nigerian (3). The Fulani own over 90% of the nation livestock population which accounts for one-third of agricultural GDP and 3.5% of the nation's GDP (4)

Sedentary pastoralists are herdsmen who migrate from a particular origin and settle in a place or location that will enhance the production of their herds. There are various reasons for migrating and settling in a particular place at a particular time.Sedentary pastoral practice might be a replacement for pastoral nomadic system of cattle production because of disadvantages of pastoral nomadism which is characterised with a communal conflicts due to total or partial destruction of farm land of the farmers (3), loss of energy or poor growth of the animals, loss of animal to death to mention but few. There is paucity of information on the sedentary pastoral management of cattle especially in Ogun state, south west, Nigeria. In lieu of this, this study tends to assess the production of cattle under the sedentary pastoral system.

Materials and Methods

The Yewa Division of Ogun State (7°15'N, 3°3'E) was used for this study. Yewa is one of the four ethnic/geo-political division in Ogun State of Nigeria. The other three divisions are Egba, Ijebu and Remo. Yewa comprises of five local government areas namely; Yewa north, Yewa south, Ipokia, Imeko-Afon and Ado-Odo/Ota. The annual rainfall, which normally spreads over eight (8) months between April and November, ranges between 100mm to 200mm, having bi – modal pattern with the peaks at May /June and September / October, **(5)**. The relative humidity is high all the year and generally above 80% during the wet season and ranges between 60 % and 8 0% during the dry season. The average maximum daily temperature varies from 28^0 C in the rainy season to 32^0 C in the dry season.

Data was collected from 25 different identified sedentary pastoralists from 5 local government areas namely Ado-Odo/Ota, Ipokia, Imeko-Afon, Yewa South and Yewa North total to 125 using the following methods; direct observation and survey method using an interview guide. Purposive and random sampling techniques were used to select the respondents based on their settlements. Data collected was analyzed with the use of Statistical Package for Social Science (SPSS) version 16.0. Descriptive statistics such as frequency counts and percentage used. Data collected from this study were presented in frequency tables.

Results

Table 1 shows the demographic features and management data of sedentary

pastoralist in Yewa-Awori axis of Ogun State, Nigeria. Majority (56%) of the sedentary pastoralist were in active age (31-45 years) old followed by 18-30 years (36%) while less than 17 and 46-65 years old were 4%, none of the respondent were above 66 years old. Male sedentary pastoralists were 95% while the female counterpart was 5%. One hundred percent(100%) were Muslim. Married and single respondents of the sedentary pastoral were 80% and 20% respectively. Educational qualification of the sedentary pastoralist shows that 52% of the respondents had no formal education, 48% had First School Learning Certificate. Occupational experience of the sedentary pastoralists shows that 32% had 10 years experience follow by 20 years and above (28%), 11-15 years and 16-20 years of experience were 16% each, while less than 5 years of occupational experience had the least percentage (8%). Additional occupation incorporated is crop farming while none of the respondents was involved in sole trading, 20% combined crop farming and trading.

Rearing of cattle alone was common (88%), while combination of sheep and cattle had 12%, none of the sedentary pastoralist reared goat and sheep alone. White Fulani (Bunaji) breeds of cattle were found to be prominent (44%) followedbyN'Dama (32%), Red Bororo (12%) while Black Bororo and Sokoto Gudali had 8% each. The number of animals in stock of sedentary pastoral system was 11-20 (44%), followed by 21-40 (40%) while 16% had a stock less than 5 and greater than 41.

Table 2 indicate the feeding, health management and marketing of cattle managed under sedentary pastoral system in the study area. Forages recorded highest (64.80%) followed by crop residues (26.40%), Agro-Industrial By-products (AIBPs) (6.40%) and commercial feeds recorded the least (2.40%) feed resources for the cattle. Majority (79.20%) involved in ethno-veterinary practices while 20.80% patronized veterinary services to manage the health issues of the animals. The marketing channels of the cattle were farmgate, organized market, commissioned agents and other means with 56.00%, 33.60%, 7.20% and 3.20% respectively.

Table 3 depicts average reproductive performance of cattle managed under sedentary pastoral system. The average milk off take was 9.92litter/day while the lactating length recorded was 4.84 mouth, pregnancy rate (%), calving rate (%), calving interval (mth), age at 1st calving (mth) and weaned calf crop (%) were 72.86, 63.86, 1.31, 7.78 and 63.44 respectively.

Table 1: Demo graphic features and management data of sedentary pastoralist in Yewa -Awori Area, Ogun State, Nigeria.

Parameters	Frequency	Percentage
Age		
<17	05	04
18-30	45	36
31-45	70	56
46-65	05	04
>66	-	-
Total	**125**	**100**
Sex		
Male	119	95
Female	006	05
Total	**125**	**100**
Religion		
Islam	125	100
Christianity	0	0
Total	**125**	**100**
Educational qualification		
Non-formal	65	52
Pry. Sch. Leaving certificate	60	48
O/L	-	-
OND/NCE	-	-
HND/B.Sc.	-	-
Total	**125**	**100**
Occupational experience		
< 5 yrs.	10	08
6-10 yrs.	40	32
11-15 yrs.	20	16
16-20 yrs.	20	16
>20 yrs.	35	28
Total	**125**	**100**
Additionaloccupation		
Crop farming	100	80
Trading	0	0
Crop farming and trading	25	20
Total	**125**	**100**
Types of ruminant animal managed		
Goat	**0**	0
Sheep	**0**	0
Cattle	110	88
Sheep and cattle	015	12
Total	**125**	**100**
Breeds of cattle managed		
N'Dama	35	28
White Fulani(Bunaji)	55	44
Red bororo	15	12
Black bororo	10	08
Sokoto gudali	10	08
Total	**125**	**100**
No. of stock		
< 5	20	16
6-10	20	16
11-20	55	44
21-40	50	40
Total	**125**	**100**

Table 2: Feeding, health management and marketing of cattle managed und er sedentary pastoral system in Yewa -Awori Axis, Ogun state, Nigeria

Parameters	Frequency	Percentage (%)
Feeding		
Crop residues	33	26.40
Forages	81	64.80
Agro-Industrial By-Products (AIBPs)	08	6.40
Commercial feeds	03	2.40
Healthmanagement		
Ethno-veterinary practices	99	79.20
Veterinary medicine/services	26	20.80
Marketing channels		
Organized market	42	33.60
Farm gate	70	56.00
Commissioned agents	09	7.20
Others	04	3.20

Table 3: Average reproductive performance of cattle managed under sedentary pastoral system in Yewa -Awori axis of Ogun State, Nigeria

Reproductiveindices	Responses
Milk off take litter/day	9.92
Lactating length (mth)	4.84
Pregnancy rate (%)	72.86
Calving rate (%)	63.86
Calving interval (mth)	1.31
Age at 1st calving (mth)	7.78
Weaned calf crop (mth)	63.44

$$\text{Pregnancy rate} = \frac{\text{No of pregnant in a year}}{\text{No of breeding cow in year}} \times 100$$

$$\text{Calving rate} = \frac{\text{No of calves produced in a year}}{\text{No of breeding cow in the hard}} \times 100$$

$$\text{Calve crop} = \frac{\text{No of calves weaned in a year}}{\text{No of breeding the hard}} \times 100$$

Table 4 shows the calf mortality in the sedentary pastoral system of cattle management in the study area. The average of 12.92 total birth of calf was recorded, calf born alive, calf still birth, was 11.76 and 1.64 respectively. The calf mortality in the 1st week of life, mortality between the 1st week of life and mortality between weaning and 1st year were 1.4, 0.12, 0.10, and 2.86 respectively. The majority (71.43%) of the respondents agreed that calf mortality has no define time while 28.57% agreed that the calf mortality can occurred at any time of the year.

Table 4: Calf mortality under the sedentary pastoral system of cattle in Yewa -Awori axis of Ogun State, Nigeria

Parameters	Average
Total birth	12.92
Born alive	11.76
Still birth	1.64
Mortality in the 1st week of life	1.40
Mortality between the 1st week of life	0.12
Mortality between weaning and 1st year of age	0.12
Seasonmortality	**Percentage (%)**
Any time	28.57
Not specific	71.43

Discussions

The majority (56%) of the sedentary pastoralist were between 31-45 years old. This reflects that majority of them were in active age. Moreso, it shows that older people i.e. greater than 66 years old do not involve in sedentary pastoral farming. The findings of this study in respect of sex indicated that majority of sedentary pastoralists were male which agreed with the findings of (6) and (7)who reported that majority of ruminant farmers in the South West of Nigeria were male. This might be attributed to the fact that the production and management of livestock including the cattle were been handled by male while the female counterpart were actively involved in the processing, packaging, marketing and distribution of the animals and their products.

Marital status of the respondents shows that majority (80%) were married which makes them to be matured and responsible (7). The highest percentage recorded for married of sedentary pastoralist might be attributed to the fact that they were all Muslim/Islam is their faith, and the general principle to that all Muslim must married once they were matured. Low level of educational qualification recorded in this study was in agreement with the findings of (8)who stated that pastoralists in general have low level of education. This might result to low level of production, characterized with low and poor animal products, low investment capacity to mention but few(7). The low education background will also reflectnegatively in their perceptionand adoption of new innovations and technologies towards improving the performance of the animal in general.

Less than 5 years occupational experience had least percentage of 8% while 16% recorded for 11-15 and 16-20 years of experience (28%) while majority 6-10 years was (32%). Additional occupation engaged by the sedentary pastoralist were crop faming.None of them was involved in sole trading, combination of trading and crop faming had 20% with this, it can be inferred that integrated system of farming might be adopted by the pastoralist in the study area.

Majority (88%) of the sedentary pastoralists in the study area reared cattle alone while 22% reared sheep and cattle together, this finding corroborates the previous research findings which

reported that pastoralists preferred rearing of cattle compared to other ruminant animals. A White Fulani (Bunaji) breed of cattle was prominent among the breeds of cattle in the study areawith this finding it means that White Fulani (Bunaji)is the most populous/prominent breed of cattle found in the South West of Nigeria. This might be attributed to the special attribute of White Fulani breeds, been an indigenous dairy breed and ability to resist trypanosomiasis, adaptive capability and docile ability of this breed.

Majority of the sedentary pastoralist operated on a small medium scale level considering the number of stock 11-20 animal/farmer (44%) and 20-40 animal/farmer (40%) available on the farm, none of the respondent had a stock less than 5 or greater than 41 animals. The small medium scale level of management adopted by sedentary pastoralist agreed with the general assertion that livestock productions in Nigeria are operated on the low level (7).

The highest percentage (64.50%) recorded for forage as the major feed resources for cattle production under sedentary pastoral system against other feed resources (crop residues, AIBPs and commercial feeds) corroborate the assertion of Muraina *etal*. (9) that natural pasture and rangeland has been the cheapest form of ruminant feed available in Nigeria. Utilization level of crop residues in this study might be as a result of supplementary occupation of crop farming (Table 1). Meanwhile, low percentage of commercial feeds, low patronage of veterinary services, non-organized market were the indications that sedentary pastoral cattle management in Yewa-Awori axis, Ogun State was still operating as small scale enterprise.

Reproductive performance of cattle managed under sedentary pastoral system indicated that milk off take 9.92 liter/day per herd is far below the milk off take in well managed cattle in developed nations. Moreso, the value obtained in this study is also less than the values reported for Holstein-Friesian cows in the country (10). The low milk production is reasoned to be a reflection of the genetic potentials of the available breeds of cattle which have not been specially selected for milk production and are traditionally managed without paying attention to needs of the animals. (11)had earlier reported that the agro-pastoral system of cattle production in Nigeria provides nourishment for stock only on range which is unable to provide quality and sustainable diets all year round.

Meanwhile, thelactating length 4.84 mth, the pregnancy rate of 72.86%, calving rate 63.86% and weaned calf crop of 63.44% shows that the cattle has a reproductive performance potential because all the reproductive yard stick considered were above average. Calf mortality in the small holder revealed that the mortality at different stages were less than 2 which revealed that the management practices adopted by the farmers were averagely perfect, this might be attributed to the long years of occupational experiences (6-10years, 32%; 16-20 years 28%) noticed, Table 1.

Conclusion and Applications

The results of this study shows that

1. Sedentary pastoralists were managed by the farmers that were within the active age of their life, occupational experience of majority were more than five years, cattle were solely managed and crops farming were incorporated into the system.
2. White Fulani breed of cattle were prominent followed by N'Dama breed.Majority of pastoralist operated on small scale level.
3. Sedentary pastoral system has a potential of sustainable management of cattle in the South-West Nigeria, which will eventually improve the protein intake and consequently improve the standard of living of the pastoralist.Also reduce the communal conflicts frequently occur between the Fulani herdsmen and the arable farmers in the host community.
4. Intensive breeding programmes couple with comprehensive extension programme should be package in other to improve herdsmen production. Marketing and distribution of dairy products among the sedentary pastoralist must be improved upon.

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