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ASSESSMENT OF LOCAL CHICKEN PRODUCTION IN KOGI STATE, NIGERIA

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ABSTRACT

The paper provides valuable guide in defining relevant issues for addressing local chicken production system and identifying constraints of production in the study area. The study was carried out in Ijumu Local Government Area of Kogi State. The study made use of primary data which were obtained through well-structured questionnaires and oral interview. Socioeconomic characteristics of the farmers showed that majority of the respondants were males within the risk taker age group (41 –45 yrs), married and either had primary education or no formal education at all. Main production characteristics included small-sized flock, poor feeding schedule, selection of eggs for hatching from existing flocks resulting in in-breeding and lack of proper vaccination against diseases. The production system was also constrained by low chick survival rate, high disease prevalence particularly Newcastle disease during harmattan, lack of veterinary assistance and marketing problems such as inadequate on-farm patronage. In spite of the constraints, most of the farmers expressed satisfaction with their production incomes. This shows that local chicken production plays a significant role in the life of the smallholder farmers in the study area. There is therefore no doubt that improvements in the areas of health and management practices will go a long way in improving the efficiency of the enterprise as well as the income of the farmers.

Key words: Farmers, health, management, production, village chicken

INTRODUCTION

Poultry production outnumbers all other forms of livestock production in Nigeria and it thrives well in any part of the country (FAO, 2018). It is an important source of animal protein, income generation, employment, industrial raw materials and financial security (Tasie *et al.*, 2020). Chicken population in Nigeria is about 155 million, of which 25% are commercially farmed whereas 60% are raised in backyards as family poultry (Unaeze and Akinola, 2016).Village chicken production represents the extensive/scavenging production system commonly found in rural areas and usually serves as reservoirs of indigenous chicken genotypes (Ajayi, 2010). Village chickens are the most common livestock types in rural areas, usually affordable by even poor rural households. Poultry production continues to be an integral part of farming systems and household economies (Thieme *et al.*, 2014). Village poultry contributes significantly to the consumption of animal protein in rural communities in the form of meat and eggs (Higenyi *et al.*, 2014). Chicken meat and eggs provide a readily available, high-quality source of proteins, vitamins and micronutrients and therefore contribute to a nutritious, balanced diet, which is especially important for children (Omer, 2020). Thus, production in rural settings is usually geared towards home consumption and sometimes little savings for small expenses. Although the products of village chickens are usually obtained with minimal inputs, production outputs such as weight gain and number of eggs/hen/year are also usually low

(Ahlers *et al*., 2009).This has placed the village poultry production system at a disadvantaged position relative to the commercial system in terms of improvement programmes (Tasie *et al*., 2020).

In past years, poultry improvement programmes in developing countries, including Nigeria, were usually directed towards introduction of exotic breeds, cross-breeding and management intensification (NAERLS, 2000). However, simple changes in the management of village chickens can significantly improve production with subsequent improvement in the living conditions of rural families, and can form an important vehicle for rural development. This is evidenced by the profound impact of the Southern Africa Newcastle disease control project which was funded by the Australian Agency for International Development (AusAID) from 2002 –2005 (Ahlers *et al*., 2009). Islam *et al*. (2015) similarly reported improved status of landless Bangladesh women through access to more food and income, when rural chicken production was improved. However, the knowledge of existing environment in which village chickens are raised as well as constraints to production will form very strong basis for any management improvement and disease control programs in an area/village. The present study is therefore aimed at evaluating local chicken production system in Ijumu Local Government Area of Kogi State, and identifying some of its management constraints. This will provide a baseline data on the performance potential of local chickens and constraints to productivity in the study area.

MATERIALS AND METHODS

Study area

This study was carried out in Ijumu Local Government Area of Kogi State, Nigeria (latitude 7°30′N, longitude 5° 45′E). The area, which is characterized by two distinct seasons (rainy and dry), has vegetation that is largely within the Guinea Savannah ecological zone. The mean annual temperature varies between 27 and 37°C whereas mean annual rainfall ranges between 1300 and 1500 mm. The people of the area are predominately farmers and the farming system practiced includes mixed farming and mixed cropping. Most households also keep livestock such as sheep, cow and goat which graze on rough pastures or uncultivated land.

Data collection

Data collection was done through the use of structured questionnaires which were distributed to farmers as well as oral interview. A total of seventy (70) questionnaires were administered randomly to local farmers in selected villages of the study area, out of which sixty-one (61) were completed and returned. Information about the socioeconomic status of the farmers were obtained through the farmer's oral responses whereas data on management of flock health and product marketing challenges were extracted from the completed questionnaires as well as oral interview. Data analysis was done using descriptive percentage of SPSS (SPSS 10.0 for windows, SPSS Chicago, IL, USA).

RESULTS AND DISCUSSION

Socio-economic characteristics of local chicken farmers in the study area are shown in Table 1. The age distribution reveals that farmers within the age group of 41 - 45 years were highest in percentage (32.79%) compared with other age groups in accordance with the reports of Abanigbe *et al*. (2018). The age distribution observed in this study is an indication that interest in local chicken production may be more within the age group of 41 –45 years who are also likely to be risk-takers. Majority of the respondents were males (73.80%) and most of the farmers (77%) were married. The gender distribution noted in this study contradicts the observations of Abanigbe *et al*. (2018) and Sule *et al*. (2019) who reported higher percentage of females among sampled farmers in Ogun and

Bauchi States of Nigeria respectively. The gender distribution and marital status of the farmers suggests that married couples were more likely to engage in local chicken farming than the singles. It is not unlikely therefore that the males will generally own the chickens but utilize family labour for routine management activities in accordance with previous reports (Sule *et al*., 2019). The obvious reasons might not be unconnected to their need to cater for the family member's basic needs. For example, family poultry generated about 53% of the family's total income in Bangladesh and this was used for food, school fees, etc. (Sonaiya and Swan, 2004). Furthermore, the respondents were mostly full-time farmers (55.70%) who mainly had either primary education (45.90%) or no formal education at all (24.60%), in agreement with the reports of Sule *et al*. (2019) in Bauchi and contrary to the observations of Hailemichael *et al*. (2016) in Ethiopia.

Table 1: **Socio-economic characteristics of local chicken farmers in the study area**

Characteristics	Frequency	Percentage (%)
Age range		
25 –30	8	13.11
31 –35	12	19.67
36 –40	14	22.95
41 –45	20	32.79
Above 46	7	11.48
Marital Status		
Married	7	77.00
Single	5	8.20
Widowed	8	13.10
Divorced	1	1.60
Sex		
Male	45	73.80
Female	16	26.20
Level of Education		
Non-formal education	15	24.60
Primary education	28	45.90
Secondary education	10	16.40
Post- secondary education	8	13.10
Occupation		
Civil servant	18	29.50
Full time farmer	34	55.70
Other occupations	9	14.80

The farmers in the current study may not have bothered about acquiring post-primary education due to the fact that local chicken production is based mainly on free range system, requiring little or no skills/managerial acumen (Abdelqader *et al*., 2007). However, education may provide farmers with knowledge and skills that will ensure efficient utilization of resources for the improvement of productivity and income, particularly in the current situation where most of the respondents are full-time farmers.

In terms of management practices (Table 2), about 73.80% of the farmers indicated lack of constraints in getting feeds since flocks were

usually small-sized, in agreement with the observations of Yemane *et al*. (2013). It is possible that birds are not provided with supplementary feed at all since production is basically extensive, or the farmers make use of household leftovers and readily available grains to feed their flocks.

Table 2: **Flock management in local chicken production**

Variables	Frequency	Percentages (%)
Constraints in getting feed		
Yes	16	26.20
No	45	73.80
Number of eggs per clutch		
1 –5	7	11.50
6 –10	30	49.20
11 –15	20	32.80
16 –20	4	6.60
Method of hatching		
Natural incubation	47	77.05
Artificial incubation	14	22.95
Chick survival (%)		
0 - 40	38	62.30
50 and above	23	37.70
Feeding system used		
By hand	36	59.00
Feeding trough	17	27.90
Mash box	8	13.10
Feeding per day		
Once	41	67.20
Twice	17	27.90
Three times	3	4.90
Type of feed used		
Guinea corn	22	36.00
Maize	35	57.40
Millet	4	6.60
Commercial feed	0	0

Majority of the farmers (59.00%) therefore find it convenient to feed their flocks freely by hand, preferring mainly to feed them with maize (57.40%) compared with other grains since maize is one of the staple crops usually cultivated in the area, and therefore readily available than other grains. This is contrary to some of the reports from other countries (Dessie and Ogle, 2001) and can be as a result of different agricultural practices. The popular feeding schedule in the current study was once daily (67.20%) and none of the farmers use commercially prepared feed. Lack of adequate supplementary feeding coupled with improper housing and poor breeding practices could contribute to poor flock performance.

During production, the number of eggs laid per

clutch usually ranged between 6 –10 eggs (49.20%) although some farmers reported clutch sizes of up to 16 –20 eggs (6.60%). This observation corroborates the reports of Yemane *et al*. (2013) who characterized village chicken production in Southern Ethiopia. In addition, farmers in the current study area selected eggs for hatching from their flocks, with 77.05% of them using natural incubation method as also noted by Muchadeyi *et al*. (2005). Unfortunately, under scavenging conditions, more than 40% of the hatched chicks were lost at early age to predation, disease and adverse weather in agreement with Abanigbe *et al*. (2018).

Analysis of the health management practices (Table 3) showed that 78.70% of the farmers prevented disease by sanitation only whereas about 16.40% of them vaccinated their birds. Even among the farmers that vaccinated their flocks, frequency of vaccination was either once (18.00%) or twice (13.10%) throughout the entire production period. This observation agrees with the reports of Sule *et al*. (2019) who noted that sweeping of premises is one major health care practice adopted by farmers in Bauchi State. In contrary, Abanigbe *et al*. (2018) in their study in Ogun State, affirmed that farmers spend money on medicines and veterinary services for their chickens. The farmers in the current study however, usually experienced a high disease incidence (62.30%) particularly Newcastle disease (59.01%) during harmathan period (62.30%) compared with other seasons of the year (18.00% for dry and 19.70% for rainy seasons). This was further compounded by lack of veterinary assistance (73.80%).

Table 3: Flock health management in local chicken production

Variables	Frequency	Percentage (%)
Disease prevention		
By Sanitation	48	78.70
By Vaccination	10	16.40
Others	3	4.90
Frequency of vaccination		
Once only	11	18.00
Twice only	8	13.10
Period of disease prevalence		
Dry season	11	18.00
Wet season	12	19.70
Harmattan	38	62.30
Most devastating disease		
Newcastle disease	36	59.01
Gumboro disease	18	29.51
Others	7	11.48
Disease control		
By killing	43	70.50
By culling	16	26.20
Other	2	3.30
Veterinary assistance		
Yes	16	26.20
No	45	73.80
Total	**61**	**100**

During these periods of crisis, most farmers (70.50%) killed the affected birds to salvage them and a limited number of the farmers (26.20%) culled the sick birds. Inadequate access of the farmers to veterinary service may be a contributing factor to the frequency of vaccination and hence the health management practice adopted by the farmers.

Though 42.60% of the farmers reported inadequate patronage as one of the major challenges in marketing (Table 4), analysis of the result showed that patronage is better at the market place (83.60%) than the farm (16.40%) in agreement with the reports of Assefa *et al*. (2016).

In spite of all the challenges of production and marketing, most of the farmers (73.80%) expressed satisfaction with the income they earned from local chicken production.

Table 4: Marketing challenges in local chicken production

Variable	Frequency	Percentage (%)
Marketing problems		
Lack of transportation	12	19.70
Inadequate patronage	26	42.60
Lack of awareness of production	22	36.10
Sales of product		
Carried to market	51	83.60
On-farm patronage	10	16.40
Income satisfaction		
Yes	45	73.80
No	16	26.02

CONCLUSION

It can therefore be concluded from this study that local chicken production plays a significant role in the life of the smallholder farmers in the study area, being a production activity that involves very minimal input. This can serve as a tool for rural development. It is therefore recommended that rural development programmes conceived by the government or other agencies be designed in such a way that they will address the various health and management constraints that is plaguing the enterprise. Improvements in these areas will definitely go a long way in improving the efficiency of the enterprise.

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