

Study on Management Practice and Production Performance of Backyard Chicken in Afgoi District, Lower Shabelle, Somalia

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Abstract

This study was aimed to assess the management practice, production performance and common constrains of backyard poultry production in some villages in Afgoi district. Descriptive survey design was employed for describing management practices and production performance of backyard poultry in some selected villages in Afgoi district. The data was collected during the period from August, 2020 to February 2021. Data was collected by using semi-structured questionnaire and individual interview. The total sample sizes of the respondents were 92. The data was arranged in excel and analyzed by using SPSS 20.0. The study revealed that the majority of poultry farmers of the flock size were 11-20 birds. The majority of the farmers 92.40% reared local chicken with extensive system. The main purpose for chicken rearing was for home consumption 90.2%. The major supplementary ingredient was sorghum 66.3%. The average age at first egg in the study area was 6 months, egg weight was 41.40 grams and the hatchability % of incubated eggs per hen was 73%. The major constrains were disease outbreak 54(58.7%), followed by high mortality 10(10.9%), poor marketing 9(9.8%), lack of veterinary services 7(7.6%), predators 6(6.5%), feed shortage 2(2.2%), lack of vaccine 2(2.2%) and poor productivity 2(2.2%) in the study area. In conclusion, Backyard chicken has a potentiality to resist the harsh environmental conditions, parasites and diseases as well as shortage of feed in Afgoi district. However genetic improvement of local chicken and adopting best management practice of backyard chicken in Afgoi areas may increase production performance of the local breeds.

Keywords: Management, Production, performance, Backyard poultry

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I. Introduction

Backyard poultry provide a quack and cheap source of animal protein, generates income, and has a religious or cultural values amongst the majority of the rural communities (Alders *et al.*, 2009) backyard poultry keeping plays a major role in livelihood improvement and income generation in rural communities, women being the primary owners of the flock (Deka *et al.*, 2013). The backyard indigenous chickens provide a high quality meat and eggs as food and cash income for the majority of the people living in the rural areas (Njenga 2005).

According to Sonaiya (2004), 80 % of backyard poultry system practiced in Africa is extensive free range system. The birds reared as extensive production system are mainly indigenous chicken (Olwande *et al.*, 2010) and are found in rural areas. These indigenous chickens can survive under harsh environment with minimum inputs and get most of their feed from scavenging and may benefit from the kitchen waste (Kingori *et al.*, 2010). According to Barua, and Yoshimura, (1997) indigenous backyard chicken are excellent foragers and can tolerate the tropical conditions. Under scavenging system the birds are supplemented with 35 grams of grains (Obi and Sonaiya, 1995) and the main supplements are cereals grains such as millet, sorghum, maize, and rice in the form of whole and broken grains (FAO, 2004). The extensive production system is characterized with low input of capital investment and low out of egg and meat production (Kadigi and Maina, 1996; Olwande *et al.*, 2010). However, backyard chicken productivity is relatively very low (Kondombo, 2005).

In somalia, Livestock contributes about 40% of Somali Gross Domestic Products and about 60% of the rural population rely directly and indirectly on livestock activities (FAO, 2012). Poultry farming is on the rise

among poor households, for both home consumption and for sale. Small scale farmers started importing exotic commercial day old chicks and fertile eggs small scale local hatcheries. Commercial poultry farming is on the rise, particularly in urban areas, almost exclusively to supply eggs to nearby towns, as there is stiff competition in chicken meat from Brazilian frozen imports. The main constrains of poultry production in Somalia is lack of government support and high cost of skilled labor and farm inputs such as poultry feed, day old chicks and poultry vaccine and medicine. However, this study is aimed to survey the management practice, constraints and potentiality of backyard chicken production in some selected villages in Afgoi district, Somalia. Therefore, this study was attempted to find out the management system and production performance of indigenous backyard chicken.

II. Materials And Methods

Description of the study area

Afgoi (Somali: *Afgooye*) is a town in the southwestern Somalia Lower Shebelle region of Somalia. Afgoi district is the third largest city of Southwest State. It is one of the oldest towns on the lower Shebelle valley, 30 kilometers north of Mogadishu. Afgoi is an agro-pastoral area, where livelihoods depend mainly on agricultural activities. Afgoi district is a strategic city with a livestock market and it has a river called Shabelle River which is used for irrigation. The researchers visited five villages in Afgoi district to perform survey and data collection on backyard poultry production.

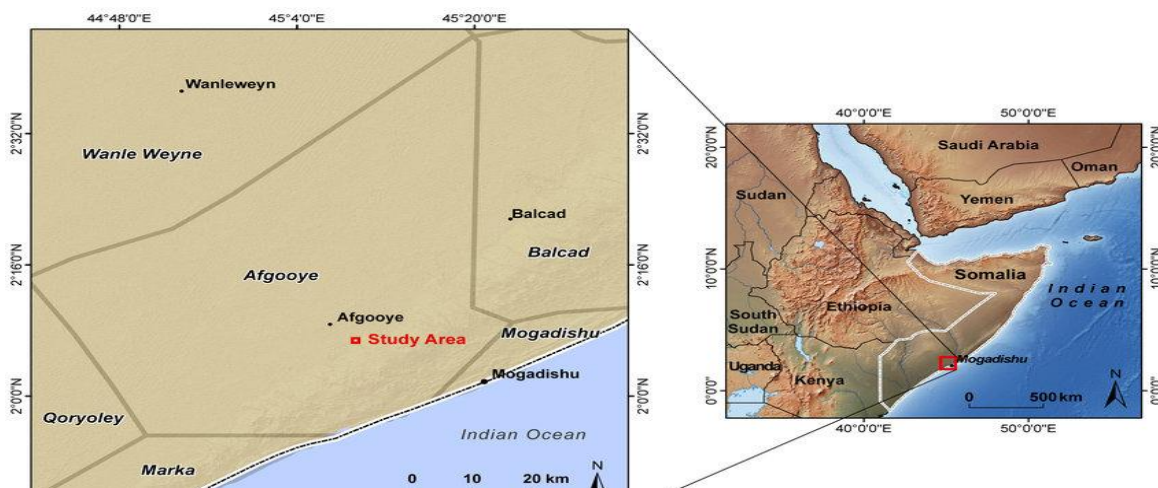


Figure 1: Afgoi map

Data collection

Primary data was collected from backyard poultry farmers in Afgoi District. The sample size was 92 farmers out of 120 respondents. The sample size was calculated by using Slovene's formula. Semi-structured questionnaire was used to collect information through individual interviews. The main data collected were about flock size and composition, purpose of keeping backyard chicken, housing system, and type of feed, egg production, and egg size, age at first egg and hatchability performance and common challenges in backyard poultry farming.

Statistical analysis

The data were collected from August, 2020 to February 2021. The data were entered using Microsoft excel spreadsheet and analyzed using SPSS (Version, 20). Descriptive statistics were used to present the management, production performance and challenges of backyard chicken in the study area.

III. Results

3.1 Household Characteristics of the respondents

The data on household characteristics of backyard poultry producers are presented in Table 1. The result showed that majority of the backyard farms were reared and owned by female 64(69.6%) followed by male 28(30.4%). Majority of the backyard poultry farmers were illiterate 69(75%). The age of the respondents ranged 31-40 years 44(47.83%). According to the occupation, majority of the respondents were unemployed 67(72.83%). Similar result was reported by Adele et al., (2019) who indicated that majority of the respondent were female (71.1%).

Table 1: Demographic data of respondents

Variable	Poultry farmer	Percent %
Gender		
Male	28	30.4
Female	64	69.6
Education Level		
Illiterate	69	75
Reading & writing	9	9.8
Primary Level	8	8.7
Secondary level	6	6.5
Age of respondents (years)		
20-30	32.00	34.78
31-40	44.00	47.83
41-50	16.00	17.39
Occupation of respondents		
Employed	25.00	27.17
Unemployed	67.00	72.83

3.2. Backyard chicken rearing system

The data on backyard chicken rearing system were presented in table 2. The result revealed that majority of the respondents practiced extensive or free range farming system 85(92.40%) followed by semi-intensive system 6(6.52%) and intensive system 1(1.08%) in the study area.

Table 2: Backyard chicken rearing system

Farming system	Poultry Farmer	Percentage %
Extensive system	85	92.40
Semi-intensive system	6	6.52
Intensive system	1	1.08
Total	92.0	100.0

3.2.1 Flock size

The data on the flock size were presented in table 3. The result revealed that the majority of the poultry farmers reared flock ranging 11-20 birds 36(39.1%) followed by 6-10 birds 18(19.6%), 21-40 birds 18(19.6%), 1-5 birds 14(15.2%) and 41-50 birds 6(6.5%) respectively.

Table 3: Flock size

Flock Size	Poultry Farmer	Percentage %
1-5	14	15.2
6-10	18	19.6
11-20	36	39.1
21-40	18	19.6
41-50	6	6.5
Total	92.0	100.0

3.2.2 Type of poultry shed and Housing Material

The data on type poultry house and housing material were presented in table 4. The result showed that the majority of the birds were housed in separate shed 80(87%) followed by share with other livestock 6(6.5%), share with human 5(5.4%) and No particular house 1(1.1%) respectively. on the other hand, the majority of the housing materials were house made of tin and wood 61(66.3%) followed by house made of tin and mud 19(20.7%) and house made of mud and wood 12(13%).

Table 4: Type of poultry shed and Housing material

Type of poultry House	Poultry Farmer	Percentage %
Separate shed	80	87
Share with other livestock	6	6.5
Share with the human	5	5.4
No particular shed	1	1.1
Total	92	100
Housing Materials	Poultry Farmer	Percentage %
House of tin and wood	61	66.3
House of tin and mud	19	20.7
Mud and wood house	12	13
Total	92	100

3.2.3 Feed supplement

The data on type of feed supplement were presented in table 5. The result revealed that the majority of the backyard poultry farmers supplemented their birds with sorghum 61(66.3%) followed by maize 20(21.7%), sesame seed 5(5.4%), rice 3(3.3%), wheat 2(2.2%) and beans 1(1.1%) in the study area.

Table 5: Type of feed supplement

Feed type	Poultry Farmer	Percentage %
Sorghum	61	66.3
Maize	20	21.7
Sesame seed	5	5.4
Rice	3	3.3
Wheat	2	2.2
Beans	1	1.1
Total	92.0	100 .0

3.2.4 Reasons for Backyard poultry farming

The data on reasons of poultry keeping were presented in table 6. The result revealed that the majority of the backyard poultry farmers reared poultry for own consumption 83(90.2%) followed by for source of income 9(9.8%) in the study area.

Table 6: Reasons for Backyard poultry farming

Reason	Poultry Farmer	Percentage %
Source of income	9	9.8
Own consumption	83	90.2
Total	92	100

3.3. Production Performance of backyard chicken

The data on backyard poultry production performance were presented in table 7. the result showed that the average age at first egg, average egg production per hen/clutch, number of clutches/hen/year, average egg laid/hen/year, average egg weight, No. of eggs set/hen and hatchability percentage per hen were (6.0 months, 12.0 eggs, 5.1, 63.4 eggs, 41.1 grams, 10.6 eggs and 73.0%, respectively) in the study area.

Table 7: Production performance of backyard chicken

Parameter	Mean	SD
Age at first egg production (months)	6.0	0.85
Average egg production per hen per clutch	12.0	2.30
Number of clutch per hen/year	5.1	0.55
Average egg laid per hen/year	63.4	16.3

Average egg weight in a gram	41.4	5.80
Number of eggs set per hen	10.6	1.60
Hatchability %	73.0	1.30

SD= standard deviation.

3.4. Constrains of backyard chicken farming

The data on the challenges of backyard poultry farming were presented in table 8. The result revealed that the majority of the farmers suffered from disease outbreak 54(58.7%), followed by high mortality 10(10.9%), poor marketing 9(9.8%), lack of veterinary services 7(7.6%), predators 6(6.5%), feed shortage 2(2.2%), lack of vaccine 2(2.2%) and poor productivity 2(2.2%) in the study area.

Table 8: Challenges of backyard chicken farming

Challenges	Poultry Farmer	Percentage %
Disease outbreak	54	58.7
High mortality	10	10.9
Poor Marketing	9	9.8
Lack of veterinary service	7	7.6
Predators	6	6.5
Feed shortage	2	2.2
lack of vaccine	2	2.2
Poor productivity	2	2.2
Total	92	100.0

IV. Discussion

The majority of the small holder backyard farms were owned by female 64(69.6%) who invest their free time for caring chicken and majority were illiterate 69(75%). This may be due to the fact that the rural poultry farmers' communities did not have access to education. Similar result was reported by Adele et al., (2019) who found that majority of the respondent were female (71.1%). Different result was reported Fisseha, (2009), who reported that majority were males. The majority of the respondents practiced free range/extensive farming system 85(92.40%). The majority of backyard poultry farmers kept size flock ranging 11-20 birds 36(39.1%). This result is similar of that (Assefa, et al., 2019) who reported mean flock size of 13.2 per bird. The result revealed that majority of the poultry farmers housed their birds in separate poultry shed 80(87%). Different result was found by Kitaly (1998) who reported that poultry shared same room with people in Ethiopia. The majority of the backyard poultry farmers supplemented their birds with sorghum 61(66.3%). Different result was found by Molla (2010) who indicated that maize, and maize and sorghum were the major feed supplement for chicken in Ethiopia. The average age at first egg was found 6.0 months. Less result was reported by Hunde Weyuma et al., (2015) who found an average age of first egg to be 5.49 months in backyard chicken. However, higher result was reported by Molla (2010) who found the average age at first egg to be 6.33 months in Ethiopia. The average egg size was 41.40 grams. This result is higher the one found by Alam et al., (2014) reported average egg weight of local chicken to be 39.2 g in Bangladesh. The main challenges face by the local backyard poultry production were different but the most common constrained were disease outbreak 54(58.7%), poor marketing 10(10.9%), and high mortality 9(9.8%).

V. Conclusion

In conclusion, the backyard poultry production has a potential role in providing cheap source of protein for low income and rural communities however, feed scarcity, poor management, poor marketing, shortage of balanced feed, high mortality, disease outbreak, lack veterinary service, and poor genetic potentiality are the main challenges constraining the production performance of native chicken in the study area.

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