JWPR
Journal of World's Poultry Research

J. World's Poult. Res. 5(4): 104-108, December 25, 2015
Research Paper
PII: S2322455X1500015-5

Village Chicken Husbandry Practice, Marketing and Constraints in Eastern Ethiopia

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Received: 03 Nov. 2015
Accepted: 11 Dec. 2015

ABSTRACT

This experiment is designed to study the characteristics of village chicken husbandry practice, marketing and constraints in eastern Ethiopia. The study was conducted from July in four selected districts in the highlands of eastern Ethiopia (Haramaya, Kersa, Jarso and Meta). A total of 80 chicken owner households were randomly selected and interviewed using a structured questionnaire. Data on characteristics of village chicken production, feeds and feeding practices, housing, management of chicken and eggs, Marketing, diseases and constraints of village chicken production system were collected. Scavenging chicken production system is observed in all households of the districts. Average flock size of chickens in the study area was 9.4 birds and varied between 4 and 17 birds. In the present study, 82% of the households provide overnight housing within the family house for their chicken. Scavenging is the only feeding system encountered in all study districts with little grain supplementation. Most of the chicken are owned and managed by women (36.75%). Selling of unprocessed eggs and live chickens is mainly practiced. External parasites (mites), Coccidiosis and Newcastle disease were the most important and prevailing diseases in the study area with 39%, 38% and 34% incidence rates, respectively. The magnitude of occurrence of the parasites and diseases were higher in the wet season. Poor genetic quality, lack of extension service, inadequate veterinary service and poor management were the main constraints of village poultry production in the study area.

Key words: Constraints, Ethiopia, Poultry, Production System, Scavenging

INTRODUCTION

Village chickens are important in low-income and food deficit countries. They represent an appropriate system for supplying the fast growing human population with high quality protein and provide additional income to poor farmers, especially women. Although they require a low level of input, village chickens contribute significantly to food security, poverty alleviation and ecologically sound management of natural resources (Guéye, 2003). Family poultry is important for food security and poverty alleviation in developing countries (Gueye, 2005) where it is mainly under the traditional small-scale system. In Ethiopia, the agricultural sector is a cornerstone system known to possess desirable characteristics such as the economic and social life of the people (Tadesse et al., 2005). At national level in Ethiopia, 99% of the total, 56.5 million, estimated chickens are contributed by village poultry production while only 1% is from intensive exotic breed maintained under intensive management system (Tadesse et al., 2005). The Ethiopian indigenous chickens are none descriptive breeds closely related to the jungle fowl and vary in color, comb type, body conformation, weight and may or may not possess shank feather and broodiness is pronounced (Demeke, 2008). They are characterized by slow growth, late maturity and low production performance. The mean annual egg production of indigenous chickens is estimated to be at 60 small-size eggs per year with a thick shell and deep yellow yolk color (Yami and Dessie, 1997). Egg laying period and number of eggs laid per period were to some extent higher in urban than in rural areas (Central Agricultural Census Commission, 2003). The productivity of local scavenging hens was low, not only because of low egg production potential, but also due to high chick mortality which was about 40-60% mainly due to disease and predator attack (Hoyle, 1992; Tadele, 1996 and CACC, 2003). Despite the large contribution of village chicken production to food security in Ethiopian rural households and some towns, there were little

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Journal homepage: http://jwpr.science-line.com/

information on their husbandry practice and constraints in different regions of the country. The results presented in this study will provide some detailed information about village chicken husbandry, marketing and constraints at rural households in eastern Ethiopia.

MATERIAL AND METHODS

Description of study area

The study was conducted from July 2014 to June 2015 in four selected districts in the highlands of eastern Ethiopia (Haramaya, Kersa, Jarso and Meta). Average altitude of 1403 meters above sea level and the maximum and minimum annual temperature is 20°C and 15°C, respectively and an annual average rainfall of 1290 mm.

Data collection

A total of 80 poultry owner households (20 from each district) were randomly selected and interviewed using a structured questionnaire. Data on social characteristics of households involved in village chicken production, feeds and feeding practices, housing, management of chicken and eggs, marketing, diseases and constraints of village chicken production system were collected.

Data Analysis

Data were analyzed using Statistical Package for Social Sciences Inc. (SPSS 2001). Descriptive statistics such as mean, range, frequency and percentage were used to summarize and present the results.

RESULTS AND DISCUSSION

General Characteristics of village poultry production in eastern Ethiopia

Scavenging chicken production system was observed in all households of the districts. All of the households kept only chicken and no other species of birds are observed. The chickens were left to scavenge for their own food, scratching and picking on the ground with little or no provision of grains. Such a system of traditional poultry rearing is widely practiced in the villages of all the districts. Average flock size of chickens in the study area was 9.4 birds and varied between 4 and 17 birds.

The average hen to cock ratio in the study area was 3.9: 1. In the present study the chicken raised by house-holds are low producing dual-purpose chicken. About 61.2% of the flocks are mature chickens and therefore chicken did not keep mainly for meat production.

About 46% of eggs laid by chickens were used by the households as food and sold, and the rest (54%) was incubated. The average clutches recorded per hen per year were 2.7 and ranged between 1 and 4. Average eggs per clutch were 9 and varied between 6 and 14 which agree with Habte et al. (2013) that reported 11.2 eggs per clutches for indigenous chickens at Nole Kaba Ethiopia. But this result varied from the report of Merga (2013) that average eggs per clutch were 5.56. The hatchability of incubated eggs was 61% and an average chick survival was 51%.

Housing

Data on the pattern of housing is presented on figure 1. One of the characteristics of backyard scavenging poultry production system is the absence of proper housing. In the present study 82% of the households provided overnight housing within the family house in which the chicken stayed the night on wooden perches fixed on the wall of the households' house. About 13.5% of the households provided separate housing for their chicken. These houses were made-up of locally available materials (wood, mesh wire and roofing with grass or iron sheet). The rest 4.5% of the households did not provide any housing for the chicken. In this case the birds perched in trees and on roofs.

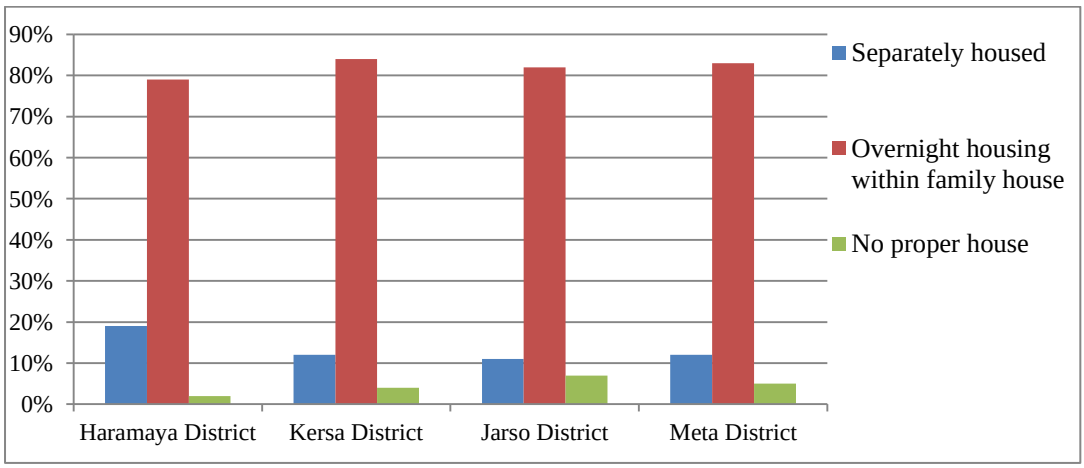

Figure 1. Chicken housing in village poultry production at different districts of east Hararghe, Ethiopia

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Source of water and feed

Scavenging is the only feeding system observed in all study districts. Chickens fed on worms, insects, grass, vegetables, and kitchen wastes. Insects and kitchen wastes comprised the majority of feed scavenged by chickens. The proportions of the main types of supplementary feedstuffs are presented in table 1. Almost all of the households provide supplementary feeds to their chickens. Cereals were the most dominant feed supplements (Table 1). However, some provided wheat bran and in one occasion a formulated layer diet was given. Either tap water or well water was given to the birds (Table 1). Surface water is the main source of water (47%). The households fetch water from streams, ponds and lakes. Lack of clean water is one of the main constraints in these areas.

Flock ownership and management profile

The pattern of flock ownership on study areas is shown in Figure 2. Most of chicken are owned and managed by women and men are not interested to raise chicken due to chicken being considered as a side business practiced by women to support family income. In the village poultry production sector, women are the primary owners and managers of chickens (36.75%). Rural women raise poultry for income generation in order to purchase basic commodities such as salt, cooking oil and sugar.

Marketing

Market chain of egg and chicken is presented in figure 3. Chickens were mostly purchased from local markets in the same district and government multiplication centers. Selling of eggs and live chickens were done in most cases to consumers in towns and only in a few cases to traders. The informal marketing of poultry and poultry products at open markets was common throughout the study areas and both live birds and eggs sold on road-side stops. Almost every little shop or kiosk sells table eggs. There is seasonality of poultry and egg demand. The demand decreases during fasting period for Orthodox Christians and demand increase during holiday festivities. Eggs were sold without processing and birds sold live. The market chain indicated that supermarkets were not involved in the marketing of the eggs and chicken.

Table 1. Various feed supplements and source of drinking water given to village chickens in eastern Ethiopia from July, 2014 to June, 2105.

Name of District	Supplemental feed				Source of water		
	Maize (%)	Sorghum (%)	Wheat (%)	Pulses (%)	Tap (%)	Surface water (%)	Well (%)
Haramaya	36	39	18	7	18	67	16
Kersa	34	39	21	6	16	44	40
Jarso	35	40	19	6	14	40	46
Meta	34	38	21	7	15	37	48

Figure 2. Flock ownership at different districts of east Hararghe, Ethiopia July, 2014 to June, 2105.

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Animal health

About 81% of surveyed households had experienced disease problems in the previous year. External parasites (mites), coccidiosis and Newcastle disease were the most important and prevailing diseases in the study area with 39%, 38% and 34% incidence rates, respectively. The magnitude of occurrence of the parasites and diseases was higher in wet season than the dry season (Figure 4).

The difference in the number of chicken present during the dry and wet season is shown in Figure 4. A reduction in the number of chicken available occurred during the wet season with an average chicken number 295 which is less than the number of chicken in the dry season (356) in the households surveyed. The reduction was relatively higher in the growers than in chicks, hens or cocks. The main reason for the reduction was mortality due to outbreaks of Newcastle disease.

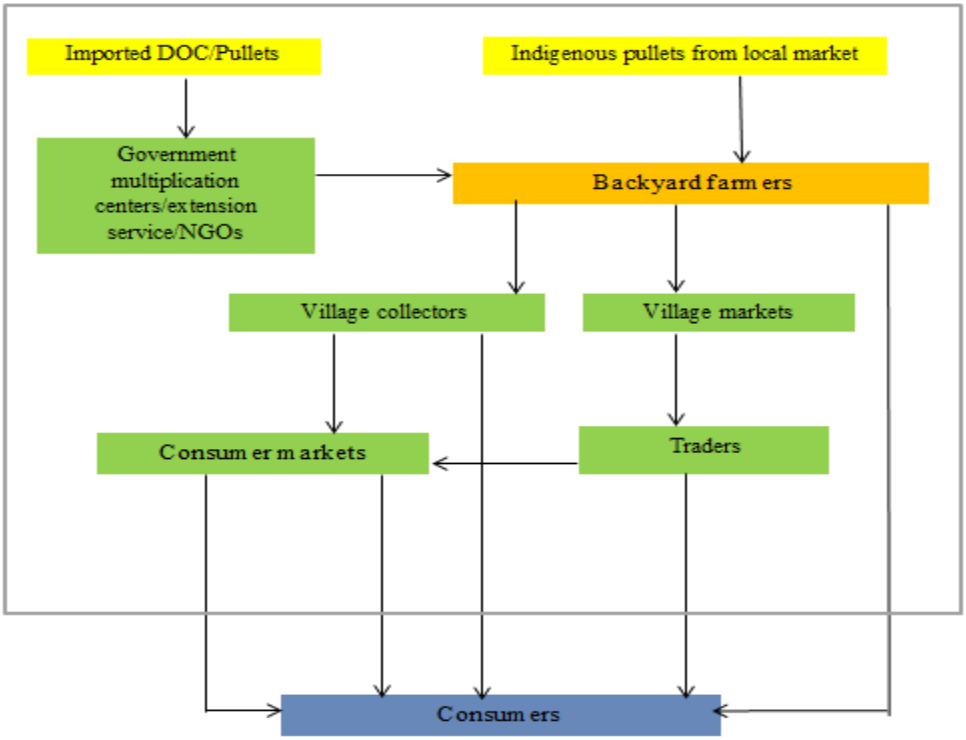

Figure 3. Poultry marketing in Eastern Ethiopia [DOC: day-old chick, NGOs: Non-governmental Organizations]

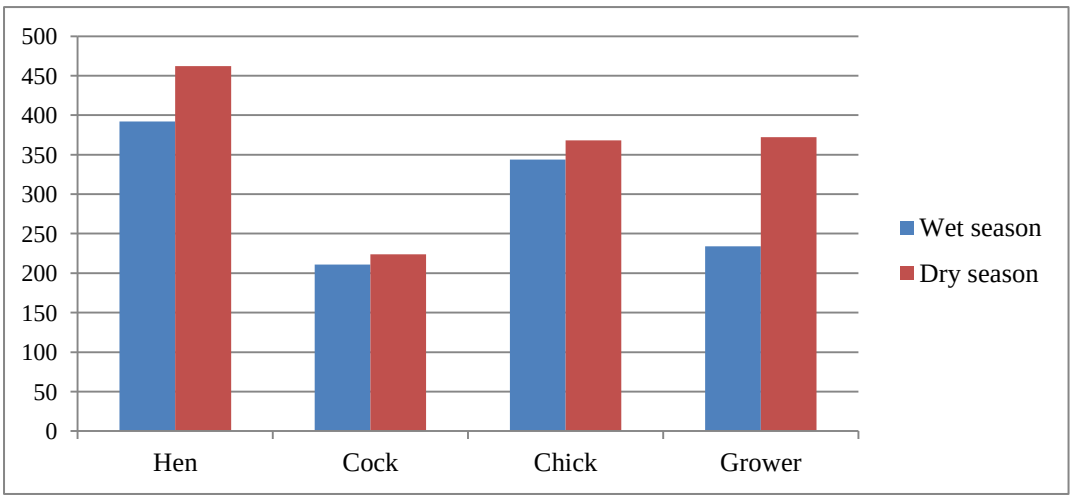

Figure 4. Number of chicken by age and sex groups present during the dry and wet season in eastern Ethiopia July, 2014 to June, 2105

Constraints of village chicken production in east Hararghe, Ethiopia

Genetic quality: Farmers in these studied areas used indigenous non-characterized chicken types. These birds showed highly pronounced broodiness, low egg productivity and slow growth rate. The present study showed that productivity of village chickens under the scavenging system in eastern Hararghe was very low.

This is in agreement with previous studies (Hoyle, 1992 and Tadele. 1996). However, the indigenous breeds were more adapted to harsh environmental conditions, particularly the extreme heat.

Extension service: There was low extension support from responsible bodies and this is in agreement with (Bikila, 2013) low supply of exotic breed and limited credit for poultry production, lack of appropriate chicken and egg marketing information to producer farmer and lack of enough space for chicken marketing in urban markets.

Veterinary Service: One of the major problems of the village poultry production system in Ethiopia is the high incidence of Newcastle disease and coccidiosis. Therefore, these diseases are primary constraint to the village scavenging poultry production in eastern Hararghe. The frequent epidemics of these diseases cause great economic loss to the poultry farmers. The availability of vaccines or veterinary services to farmers was generally poor.

Management: More than half of the surveyed households did not provide housing or shelter for their chickens. Consequently, birds were subject to predation and theft. In addition, there is little or no supplementary feed and clean water supply for the chicken.

CONCLUSION

The survey results indicated that, chicken are one of the most important farming activities in rural areas of eastern Hararghe. Women are responsible for most of the management aspects related to chickens. Rural women lack sufficient educational background necessary for successful poultry management and had no access to veterinary extension services. Improper housing, lack of extension and veterinary services, disorganized market chain on poultry products and poor genetic quality of existing chicken types were the main constraints encountered in this study.

Acknowledgement

The authors are grateful to Haramaya University for the study grant.

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