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Characterization of Village Chicken Production Systems in East Shewa of Zone of Oromia region, Ethiopia

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Abstract

The study was conducted with objective of characterization of traditional chicken production systems in Adami Tullu Jido Kombolcha and Dugda districts of East Shewa zone of Oromia region, Ethiopia. A total of 120 randomly selected households were included in this study. The main source of chicken stock foundation in the study area was inherited. The overall chicken flock size in the study area was 11.8 ± 1.06 . Majority (91.7) of households had experiences of rearing indigenous chickens. Only nearly one-third (31.7%) of households had exotic chickens at time study or before. indigenous were dominated the flock in the study area. While only hen and cock of exotic breed was found in household's home at time of study. The majority of households were practiced supplementation of feed to their chickens. The majority of households in the study area were kept their chickens in free range in the day and in home (kitchen) during the night. Disease outbreak was occurred during summer from July to August. Almost more than half of the respondents were sold their chickens in village market. The majority of the households in the study area were mainly sold the chicken to get money to cover household basic needs. The majority of households were sold their chickens by walking with birds. Whereas, production system showed some better improved husbandry practices in terms of supplementary feed, housing and watering. However, farmers' lacks information on diseases, weak health managements and extension services was observed in the study area.

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indigenous chickens, Supplementary feed, body size, local breed, survival rate.

Introduction

Chickens are widely kept and make up the largest share in terms of numbers compared to other farm animal genetic resources. The majority of the Ethiopian poultry farming system was extensive or traditional, with little supplementary feeding practice (Alebachew *et al.*, 2022). The major challenges of the scavenging chicken production in Africa include high chicken mortality due to predation and regular outbreaks of diseases notably Newcastle disease; imbalanced nutrition due to poor

quality and quantity of feed materials; lack of organized marketing system and low performance related genetic potentials (Melesse, 2014). The traditional practices continue to dominate domestic poultry production in Ethiopia; industrial poultry production contributes only an insignificant proportion.

Most chicken in Ethiopia are indigenous distributed across different agro-ecological zones and mostly under a traditional family-based scavenging management system. The village chicken production system in

Ethiopia followed a scavenging type of production system using a majority of indigenous chicken ecotypes with only seasonal/conditional feed supplementation (Halima, 2007; Mekonnen, 2007; Fisseha, 2009). The village chicken production system was characterized as low input and output. Therefore, better understanding of major constraints and production characteristics and marketing system of village chicken production is an important aspect of improving chicken production.

Materials and Methods

Descriptions of the Study Area

The study was carried out in Adami-Tullu Jido Kombolcha and Dugda districts of East Shewa zone of Oromia region, Ethiopia. The study was conducted nearby the towns of both districts.

Adami Tullu Jido Kombolcha district (ATJK)

Adami Tullu town is located about 168 kilometers south of Addis Ababa in the East Shewa Zone. It has a latitude and longitude of 7°52'N 38°42'E with an elevation of 1636 meters above sea level. The most ATJK district ranges in altitude from 1500 to 2300 with an average of elevation of 1636 masl. The agro-ecological zone of the district is semi-arid and sub-humid in which 90% of the area is lowland while the remaining 10% is midland. The average annual temperature of district was 22 to 28°C and average annual rainfall of 760 to 1000 mm.

Dugda district

It is located 134 km from Addis Ababa, the capital city of Ethiopia. The district is located at 8°01'N latitude and 38°31'E longitude. The altitude of the district ranges from 1500 to 2300 masl. The average annual Rain fall of 650 to 750 mm. Agro ecologically, the area is categorized under the semi-arid, with temperature of ranges 22°C - 28°C with relative humidity of 60%.

Sample and sampling techniques

The study districts were selected purposively based on accessibility to main road for ease data collection and monitoring. From both districts, namely Adami Tullu Jido Kombolcha and Dugda six villages (three villages per district) were selected purposively considering potential of poultry production and possibility of accessibility of data collection. A total of 120 households (60 households from two districts) randomly households

were used in this study. From each six village 20 households were selected. During the selection lists of all headed households from each village were identified. Then studies households were selected randomly using Microsoft excel randomization method for each village separately.

The randomly selected household was retained in selection group that had chicken keeping experiences for at least 2 years; otherwise was replaced by another household fulfilling the criteria. This step was repeated until required numbers households were reached.

Data Collection

The data were collected from by trained enumerators through interviewing of randomly selected households using Open Data Kit (ODK) system using tablet computer. Then collected data were electronically transferred to a central server managed by International livestock Research Institution (ILRI). The data was collected by trained enumerators. The enumerators were supervised at time of data collection. The data were also checked before sent to server.

Statistical Analysis

The data were analyzed using SPSS version 20. The percentages of respondents were computed from analyzing qualitative data.

Results and Discussion

Sources of chicken foundation stock

In the study area majority (72.6%) of households reported the chicken foundation stock was inherited. This result was higher than findings of Letebrhan *et al.*, (2015) who reported 20.6% of households chicken foundation stock was inherited. The result in the current study was contrary to Fisseha *et al.*, (2010) who reported major (93.9%) respondents' source of chicken for parent stock was purchased from market.

Chicken flock structure

The overall mean chickens flock sizes in the study was 11.8 ±1.06. This result is similar with Yadessa *et al.*, (2017) and Letebrhan *et al.*, (2015) who reported average flock size of 11.22± 2.06 and 11.6 respectively. But, result of current finding was higher than (Tarekegn *et al.*, 2015) and (Adem and Teshome, 2016) who reported

average chickens flock size of 9.4 and 9.13 respectively. However, the result in this study was lower than (Fisseha *et al.*, 2010) and Abebe *et al.*, (2017) who reported 13 and 18.5 chickens, respectively. On the other hand, chicken flocks in the study area were dominated with chicks followed by hens. The higher numbers of chicks implies sustainability of chicken production through replacement flocks.

The result of this study was supported by Emebet *et al.*, (2013) who reported that farmers owned relatively higher proportion of hens and young chicks, indicating they purposively did so to ensure production of replacement flock in sustainable manner. On the contrary to this result (Yadessa *et al.*, 2017) reported hens were dominant in the flock structure followed by chickens (0-8) weeks of age.

The small numbers of cock and cockerels in this study might be only few of them were served several females otherwise they were sold. This result was similar to Meseret (2010) who reported lower proportion of the cockerels and cocks within the indigenous chicken population might be attributed to the selling.

According to Mtileni *et al.*, (2009) in any poultry set up, the proportion of mature hens in the flocks is used to estimate flock productivity. About 29.3% of the respondent owned 3-6 pullets (Table 2). Keeping a relatively higher number of pullets could be a copping mechanism to replace the number of adult chickens reduced by selling, consumption and loss due to various reasons.

Chicken keeping Experiences

In the study area majority (82.5%) of households were had indigenous chickens at time of the study. Only nearly around one-third (31.7%) of the households in the study area on average were owned exotic chickens at time of the study period or before.

Chicken breed composition

Household in the study were kept different breed of chickens with indigenous chicken were dominated the flock. This implies that small holder farmers used local chicken breed for sustainable breeding as result of local chicken was reproduced through natural hatching. The overall flock size of local chicken in the study area was 6.74 ± 1.2 followed by exotic and crossbred with flock size of 2.08 ± 0.65 and 1.64 ± 0.78 respectively. The flock

exotic and crossbred in this study was higher than Letebrhan *et al.*, (2015) who reported 0.11 and 0.19 overall flock size of exotic and crossbred respectively. On contrary Mekonnen *et al.*, (2017) reported exotic chicken breed flock size of 10.26 ± 8.83 in Asosa town which was much higher than current finding. This difference might be due to production environment as households living in town are easily access to get exotic chicken. In the study area only both cock and hens existed in this might be exotic breed was mainly used for immediate production purposes.

Chickens feeding and practices supplementary

In the study area majority (85.8%) of households were provided supplementary feed to their chickens. This implies that majority of households in the study area had awareness about importance of supplementary feed. The result of this study was relatively comparable with Abebe *et al.*, (2017); Yadessa *et al.*, (2017) and Adem and Teshome (2016) who reported 100%, 97% and 94.2% of respondents respectively provide supplementary feed to their chicken. The households did not supplement due to lack of awareness and giving no attention.

In the study area on average nearly more than half (52.5%) of households were supplemented both in morning and afternoon. This result is similar with Meseret (2010) who reported about 48.3% respondents offer supplement twice a day (morning and afternoon).

The majority of households in the study were throw supplementary feed on ground for collective feeding. This result was supported by finding of Adem and Tashome (2016) who reported Spreading of feed on the ground practiced by 93.3% of households was the dominant method of feed provision. On the other hand, some households were provided supplementary feed to their chicken by putting in container.

The majority (75%) of households in the study were supplemented all classes of chicken together. This result was similar with Emebet *et al.*, (2013) who reported almost all (96.3 %) farmers were provided supplementary feeding to their chickens and chickens of different age groups were fed together. In contrary to result of this Bosenu and Takele (2014) were reported all respondents given priority for chicks and layers in supplementary feeding. Meseret (2010) was reported broody hens were given priority in case of supplemental feed provision.

Table.1 Sources of Chickens foundation stock and keeping experiences in the study area

Sources of foundation stock	District		Overall (N=120)
	ATJK (N=60)	Dugda(N=60)	
Inherited	46 (76.7)	41(68.4)	97 (72.6)
Purchase	7 (11.6)	9 (15)	16 (13.2)
Inherited& Purchase	4 (6.7)	8 (13.3)	12 (10)
Hatch	3 (5)	2(3.3)	5(4.2)
Chicken keeping experiences			
Yes	56 (93.3)	54 (90)	109 (91.7)
No	4 (6.7)	6 (10)	14 (8.3)
Chickens keeping experiences by breed			
Local breed/indigenous/ at time of study	52(86.7)	47 (78.3)	99 (82.5)
Exotic breed	22 (36.6)	16 (26.6)	38 (31.7)

The figure outside and in the brackets were indicated Number of households and percentage

Table.2 Village chicken flock size Least squares means (\pm SE) different age in the study area

Chicken age group	District		Overall
	ATJK	Dugda	
Cock/Rooster	2.05 \pm 0.24	1.5 \pm 0.24	1.77 \pm 0.17
Cockerals	1.03 \pm 0.23	1.45 \pm 0.23	1.24 \pm 0.16
Hen/layers	3.42 \pm 0.29	2.67 \pm 3.67	3.05 \pm 0.28
Pullets /growers	1.32 \pm 0.25	2.80 \pm 0.39	2.06 \pm 0.24
chick	2.67 \pm 0.59	4.63 \pm 0.93	3.65 \pm 0.55
Flock size	10.5 \pm 0.19	13.1 \pm 1.76	11.8 \pm 1.06

Table.3 Households' experiences of chickens breed keeping in the study area

Breed type	keeping experiences	District		Overall
		ATJK (N=60)	Dugda (N=60)	
Local breed	At study time	52(86.7)	47 (78.3)	99 (82.5)
	In the past	4 (6.7)	7 (11.7)	11(9.17)
Overall		56 (93.3)	54 (90)	109 (91.7)
Local exotic	At time of study	5 (8.3)	13 (21.7)	18(15)
	In the past	17 (28.3)	3 (5)	20 (16.7)
Overall		22 (36.7)	16 (26.7)	38 (31.7)

Table.4 Chicken breed composition in the study area

Age category of chicken	Numbers of chicken (Mean \pm SE) by breeds		
	Local breed	Exotic breed	Crossbred
Cock	1.94 \pm 0.2	1.83 \pm 0.48	0.45 \pm 0.37
Cockerels	1.43 \pm 0.19	0.00	0.55 \pm 0.25
Hens	3. 45 \pm 0.31	2.33 \pm 0.67	0.45 \pm 0.45
Pullets	2.35 \pm 0.28	0.00	1.09 \pm 0.37
Chick	4.30 \pm 1.2	0.00	0.73 \pm 0.5
Overall	6.74 \pm 1.20	2.08 \pm 0.65	1.64 \pm 0.78

Table.5 Feeding and feed supplementing practices in the study area

Practice feed supplementation	District		Overall (N=120)
	ATJK (N=60)	Dugda(N=60)	
yes	48(80)	55(91.6)	103(85.8)
No	12(20)	5(8.4)	17(14.2)
Reason for not supplementing			
Lack awareness	10 (16.7)	5(8.3)	15(12.5)
Not giving attention	2(3.3)	-	2(1.7)
Time of Supplementation			
Morning	10 (16.7)	12(20)	22 (36.7)
Morning & Afternoon	25(46.6)	38(63.3)	63(52.5)
Morning, Afternoon, Evening	13(21.7)	5(8.3)	18(15)
Methods of feeding			
Put in container (locally made)	28(46.7)	8(13.7)	36(30)
Throw on ground	20(33.3)	47(78.3)	67(55.8)
Class chicken Supplemented			
All classes of chicken	46(76.6)	44(73.3)	90(75)
Some classes of chicken	2(3.4)	11(18.3)	13(10.8)

Figure outside and inside brackets indicated numbers of respondents and percent respectively

Table.6 Housing of village chicken in the study area

Housing	District		Overall (N=120)
	ATJK (N=60)	Dugda (N=60)	
During day			
Free range	59 (98.3)	56(93.3)	115(98.5)
Chicken house	1(1.7)	4(6.7)	5(4.2)
During night			
In home/kitchen/	51(85)	45(75)	96(80)
Chicken house	9(15)	15(25)	24(20)

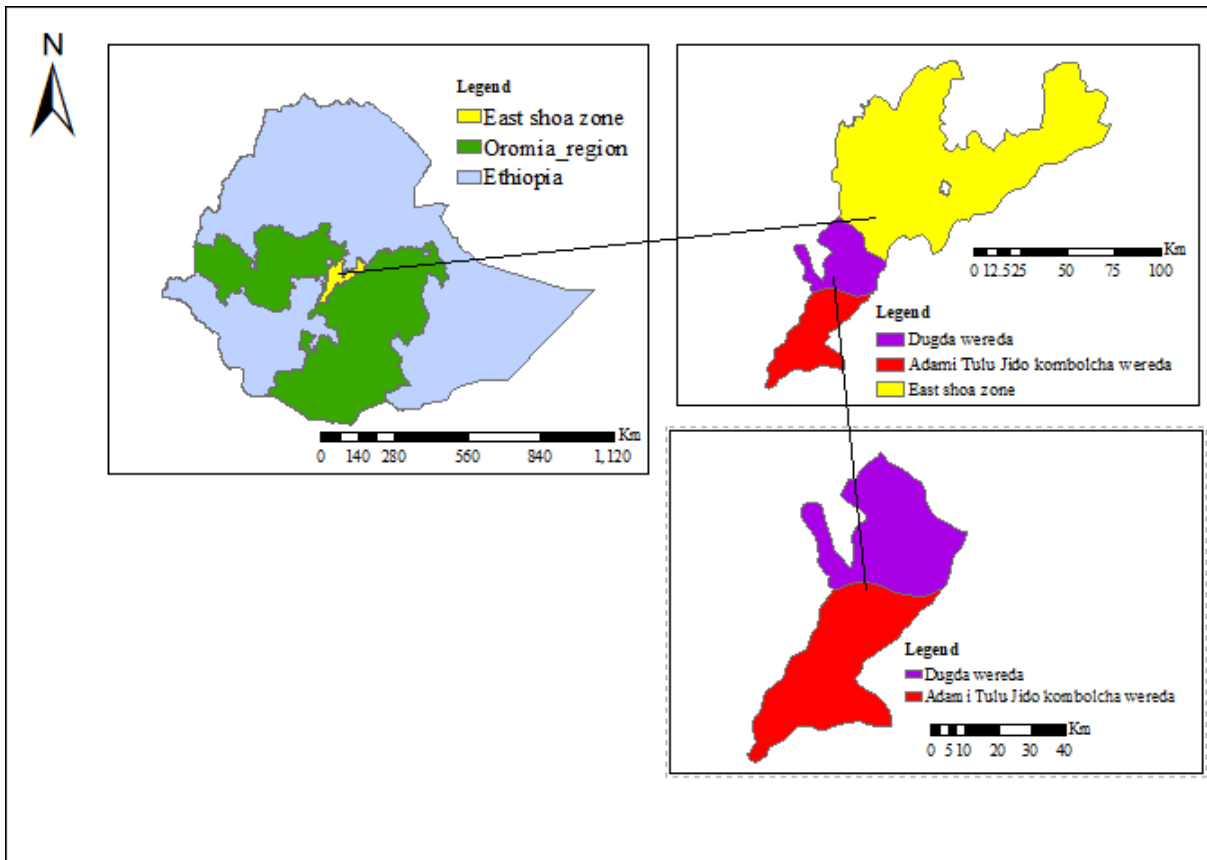
Table.7 Poultry Disease survey in the study area

Disease outbreak	ATJK (N=60)	Dugda (N=60)	Overall (N=120)
Yes	18(30)	14(23.3)	32(26.7)
No	42(70)	46 (76.7)	88(73.3)
Time of outbreak			
August	6(10)	2(3.3)	8(6.7)
July	12(20)	2(3.3)	14(11.7)
September	0	10(16.7)	10(8.3)
Disease vaccinated			
Newcastle	14(23.3)	7(11.7)	21(17.5)
Gumborro	0	10(16.7)	10(8.3)
Coccidiosis	6(10)	0	6(5)
Disease occurred			
Not known	16(26.7)	3(5)	19 (15.9)
Newcastle	2(3.3)	6(10)	8 (6.7)
Gumborro	0	5(8.3)	5(4.2)

Table.8 Village chicken and eggs marketing in the study area

Marketing character	District		Overall (N=120)
Reason for selling			
Households needs	45(75)	46(76.7)	91(75.8)
As business	15(25)	14(23.3)	29(24.2)
Market			
Village market	50(83.4)	19(31.7)	69(57.5)
City market	5(8.3)	19(31.7)	24(20)
Fellow farmer/individual	5(8.3)	-	5(4.2)
Trader	-	22(36.6)	22(18.3)
Who decided selling			
Owners	50(83.3)	15(25)	65(54.2)
Female household	10(16.7)	18(30)	28(23.3)
Male household	-	27(45)	27(22.5)
Mode of payment			
cash	60(100)	57(95)	117(97.5)
Credit-delayed payment	-	3(5)	3(2.5)
Mode of transport			
Walking (with bird)	55(91.7)	46(76.7)	101(84.2)
By transport (cart)	5(8.3)	14(23.3)	19(15.8)

Figure.1 Map of the study area



Chicken watering

Almost all households in the study area were provided water to their chickens all time. Among which 95% were brought water to their chickens in locally made container from wood or broken clay. This result was similar with Fisseha *et al.*, (2010) who reported majority of chicken owners (98.2%) had watering trough such as broken clay material, locally called “*shekila*”, wooden trough and plastic made trough were the most widely used.

Chickens housing

Majority of the respondents in the study area were kept their chickens in free range in the day in both dry and wet season. On the other hand, during the night of both dry and wet season majority of the respondents were kept their chickens in home (kitchen). The result of this study was similar with Emebet *et al.*, (2013) who reported there are no separate poultry houses in the study areas in most of the cases and village chickens spent most of their time scavenging in the vicinity of human dwellings. In contrary to the current study Waktole *et al.*, (2018); Yadessa *et al.*, (2017) who both reported majority of the respondent use separate house construction. The majority of farmers were housed their chickens by sharing the same room with perch. The remaining were used perch in kitchen, perch in the Veranda and separate shelter (Kibreab *et al.*, 2016).

Health management

Vaccination and diseases outbreak

The result of this study was indicated that, all households in the study area were not reported disease outbreak problems as study under taken during winter/dry season. Though some households in the study were reported disease outbreak during summer (July to August). The chicken owners experienced the highest chicken death rate during the rainy season. The major causes of death were seasonal outbreaks of chicken diseases, particularly Newcastle disease (locally known as ‘fengele’) (Alebachew *et al.*, 2022). This implies that majority of chicken diseases were occurred during summer season as compared to winter. The current result was not in agreement with Fisseha *et al.*, (2010) who reported that, majority of the respondents in Bure district were experienced chicken disease problems. However, there was a problem in identifying the real causes and the type of diseases that led to chicken deaths since most of the veterinary services given to the farmers were not

supported with laboratory investigation Alebachew *et al.*, (2022). The high incidence of diseases occurred at mid and end of summer season was most of devastated village chicken in the study area (Group Discussion). Newcastle disease was the most prevalent and economically important in North Wollo (Addisu, 2013) and Bure districts (Fisseha, 2010a). Newcastle disease was believed to be the most devastating chicken disease in free-range systems and the main cause of the high chicken mortality irrespective of age and sex, which occurs any time of the year in central Ethiopia (Serkalem Tadesse *et al.*, 2005).

In study area the majority of the respondents were not vaccinated their chickens in the study area. This might be because of most of the farmers do not access to vaccines for small flocks at farmers’ level and farmers did not give attention to the healthcare of their chickens before the disease outbreak, some households in the study were reported vaccination for few viral diseases (Newcastle and Gumborro) and Coccidiosis. In contrary few households were reported occurrences disease for vaccinated chicken in the study. This might be knowledge gap of households either vaccines or type of diseases or disease’s high incidences. This implies that disease type should be supported or based on laboratory results.

Marketing of chickens and eggs

Majority (75.8%) of the households in the study area were sold chickens and eggs for household basic needs. This result was in line with the finding of Fisseha *et al.*, (2010) who reported that the respondents often sale their chicken in Bure district of western Amhara region mainly to fulfill instant cash need of the household.

The result of this study were also comparable with finding of Adem and Teshome (2016) who reported earnings from the sale of chickens and eggs were used to purchase food items, cover educational expense for children’s and to purchase clothes. On the other hand, more than half (57.5%) of the respondents in the study area were sold their chickens in village market. Moges *et al.*, (2010b) reported urban markets followed by nearest market local market and farm gate are in order of importance outlets for egg marketing by producers. The cash paying was the common mode of payment during marketing of the chickens and eggs in the study area (Table 9). This result was revealed that the main objective of keeping chicken in the study area for income generation.

In the study area more half households were reported that chicken and egg selling was decided by owners. This was indicated chicken producers had kept and sold chicken for target purpose and use. This result was similar with finding of Meseret (2010) who reported that the ownership pattern was usually related to decision making in selling and consumption of chicken and eggs. In the study area 84.2% of households were sold chicken by walking on foot with birds. Bosenu and Takele (2014) were reported about 100% of respondent entire carries their chickens to market places either on foot or using public transportations.

References

- Abebe, H., M. Manaye, and A. F. Abrahm. 2017. On-farm phenotypic characterization of indigenous chicken populations in Guji Zone of Oromia National Regional state, Ethiopia. *International Journal of Development Research*, 7 (11):16652-16661.
- Aberra M. (2014). The significance of scavenging chicken production in the rural community of Africa for enhanced food security. *World's Poultry Science Journal*, 70, 593-606.
- Abiyu Tadele, Aberra Melesse, Mestawet Taye (2019). Indigenous Chicken Production Environments, Reproductive and Productive Performances and Constraints in Kaffa Zone, South Western Ethiopia. *International journals of agricultural Extension Vol. 7, no 1.*: 89-98.
- Addis Getu and Kafyalew Alemayehu. 2017. Review on the Status, Characterization and Conservation Methods of Local chicken Ecotypes, Ethiopia. *Online Journal of Animal and Research*, 7(3): 43-50.
- Addis Getu and Malede Birhan. 2014. Chicken Production Systems, Performance and Associated Constraints in North Gondar Zone, Ethiopia. *World Journal of Agricultural Sciences*, 10 (1): 25-33.
- Addisu Hailu, Zewdu Wuletaw and Hailu Mazengia. 2013. Breeding practice and objective of indigenous chicken in North Wollo, Amhara regional State, Ethiopia. *International Journal of Livestock production*, 5(1):191-198.
- Addisu, H., Hailu, M. & Zewdu, W. 2013. Indigenous chicken production system and breeding practice in North Wollo, Amhara Region, Ethiopia. *Poultry, Fisheries & Wildlife Sciences*.
- Adem, A., and G. Teshome. 2016. Indigenous chicken production system and their productive performance in Yeki Woreda, southwestern Ethiopia. *Agriculture and Biology Journal of North America*, 7 (5): 266-274
- Ahmedin Abdurrahman. 2014. Study of production practices, Fertility, Hatchability and egg quality of rural chicken in Gorogutu district Eastern Hararghe, Ethiopia. Msc. Thesis
- Alebachew G W1 *, Ejigu A K1, Adnie L Y1 and Gebeyehu S T. 2002. Poultry Production and Marketing Systems in Ethiopia: A Review. *Annals of agricultural and crop science*
- Asmelash Bruh, Dawit Mahlet and Kebede Ewonetu. 2018. Characterization of Village Chicken Production and Breeding Practices of Smallholders in Eastern Ethiopia. *Journal of Veterinary Science & Technology*, 9 (1).
- Bosenu, A., and G. Takele. 2014. Study on Challenges and Opportunities of Village Chicken Production in Haramaya District, Eastern, Ethiopia. *International Journal of Scientific and Research Publications*, 4(12).
- Chencha, Ch., and N. Hailemikael. 2016. Performances, Breeding Practices and Trait Preferences of Local Chicken Ecotypes in Southern Zone of Tigray, Northern Ethiopia. *Asian Journal of Poultry Science*, 10 (3): 158-164.
- Emebet, M., S. Harpal., A. Johansson., S. Tasfaye, and Z. Sahile. 2013. Characteristics of Indigenous Chicken Production System in South West and South Part of Ethiopia. *British Journal of Poultry Sciences*, 2 (3):25-32.
- Fisseha Moges, Abera Mellese and Tadelle Dessie. Assessment of village chicken production system and evaluation of the productive and reproductive performance of local chicken ecotype in Bure district, Northwest Ethiopia. *African Journal of Agricultural Research*. 2010a; 5: 1739-1748.
- Fisseha, M., M. Aberra, and D. Tadelle. 2010. Assessment of Indigenous chicken production system and evaluation of production and reproduction performance of indigenous chicken in Bure districts, North West Ethiopia. *African Journal of Agriculture Research*, 5 (13):1739-1748.
- Fitsum, M. 2017. Production Objectives, Breeding Practices and Selection Criteria of Indigenous Chicken in Central Zone of Tigray, Northern Ethiopia. *Academic Research Journal Agricultural Sciences Research*, 5(7):521-528.
- Halima Hassen Mogesse. 2007. Phenotypic and genetic characterization of indigenous chicken

- populations in northwest Ethiopia. PhD. Thesis, Free State, Bloemfontein, South Africa.
- Kibreab, Y., A. Zelalem, and T. Kassa. 2016. Village Chickens Housing System in Kaffa and Benchmaji Zone, Ethiopia. *European Journal of Applied Sciences*, 8 (4): 200-202.
- Letebrhan G/Slassie, Aberra Melesse¹, Sandip Banerjee¹ and Gebremedhn Beyene.2015. Characterization of village chicken production system under traditional management in Gantaafeshum district of Eastern Tigray, Ethiopia. *Livestock research for rural development* 27(9).
- Mekonnen, N., F. Begna, and S. Abraha. 2017. Husbandry practices and Egg production performances Exotic Chicken Breeds in Asosa Town, Benihangul Gumuze Region, Ethiopia. *Advances Journal of Multidisciplinary Discoveries*, 18 (1): 72-80.
- Meseret, M. 2010. Characterization of village chicken production and marketing system in Gomma Wereda, Jimma zone, Ethiopia. M.Sc. Thesis, Jimma University, Ethiopia.
- Moges, F., T. Azage, and D. Tadelle. 2010b. indigenous chicken production and Marketing systems in Ethiopia: Characteristics and opportunities for market oriented development. IMPS (Improving Productivity and Market Success) of Ethiopia Farmers Project Working Paper 24: Nairobi, Kenya, IRLI.
- Nigussie Dana. 2011. Breeding programs for indigenous chicken in Ethiopia. Ph D dissertation, Wageningen University, the Netherland.
- Samson Leta and Endalew Bekana. 2010. Survey on Village Based Chicken Production and Utilization System in Mid Rift Valley of Oromia, Ethiopia. *Global Veterinaria*, 5 (4):198-203.
- Serkalem Tadesse, Hagos Ashenafi and Zeleke Aschalew. Sero-prevalence study of Newcastle disease in local chickens in central Ethiopia. *International Journal of Applied Research. Vet. Med.* 2005; 3.
- Tadele A., Melesse A. & Taye M. (2018). Phenotypic and morphological characterizations of Indigenous chicken populations in Kaffa Zone, South Western Ethiopia. *Animal Husbandry, Dairy and Veterinary Science*, 2(1): 1-9.
- Tarekegn Getachew, Ewonetu Kebede, Negassi Ameha and Aemro Terefe Terefe. 2015. Village Chicken Husbandry Practice, Marketing and Constraints in Eastern Ethiopia. *Journal of world poultry Research*. 5(4): 104-108.
- Waktole. H., M. Almaw., D. Taweya., B. Wakjira, M. Kiflom., H. Ashenafi, and D. Ayana. 2018. Opportunities and challenges of indigenous chicken in Asella district, Arsi zone, Oromia, Ethiopia: implications for designing improved productivity schemes. *Journal of Bacteriology & Mycology*, 6(3): 229–235.
- Yadessa, E., D.Tulu., A. Bogale., G. Mengistu., M. Aleme., S. Shiferawul, W. Esatu., A. Amare. 2017. Characterization of smallholder poultry production systems in Mezhenger, Sheka and Benchi –Maji zones of south western Ethiopia. *Academic Research: Journal of Agricultural Sciences Research*. 5(1): 10-19.

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