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Feed and Feeding Practice of Village Chicken at Kafa and Bench Maji Zone, South West Ethiopia

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Abstract: The study was conducted to determine Feed and feeding practice of village chicken at Kafa and Bench Maji Zone, from four representative districts of Adeyo, chena, Gimbo and Guraferda by selecting a total of 150 households who involved in chicken production. The data were collected by questionnaire, personal observation and interviews. Mostly (19.33%) feed grain for village chicken is maize. Trained of purposeful feeding of supplementary feed is in the morning before they went out for scavenging and any time during the day (42.86%). Purpose of supplementary feed (39.33%) giving is for egg yield. Major green forage village chickens feed (42%) is different edible green grass like "keppo". About 70% of respondents use Household scraps for poultry feed. About 76% of respondents provide water for village chicken. Frequency of offering water for birds is adlib (50.33%). Source of water for village birds 41% is spring water. Type of container used to supply water is clay pot (45.33%). Trained of washing water supplying materials every times (25.33%) and 23.33% of respondents never.

Key words: Village chickens · Feeding · Kafa and Bench Maji Zone

INTRODUCTION

The total chicken population in the country is estimated at 51 million [1]. The majority (98%) of these chickens are maintained under traditional system with little or no input for feeding [2]. The primary objective in feeding poultry is to secure the most economical gains in weight during growth and fattening and the most economical production of eggs throughout the laying period [3].

The feed resource for rural chicken production in Ethiopia is scavenged and consists of household waste, anything edible found in the immediate environment and small amounts of grain supplements provided by the women [4]. Village chicken production fits quite well with the conditions of rural households due to small feed cost, space requirement and low price of the animals [5].

According to [6] about 99% of chicken owners of North-West Amhara provided supplementary feed to village birds once per day, mainly during feed shortage seasons. Study conducted [7] on village chickens shows the major feed is grains produced on-farm and feed availability is high during the dry season and harvesting period from December to March and from November to January.

According to [7] the major problem affecting chicken production is poor feeding practices. Similar constraints have been found elsewhere in the highlands of Ethiopia [8]. Due to poor agricultural extension service, however, there is no documented and enough information pertaining to the village chickens feed resource base management. Therefore this study was mainly designed to assess feed, feeding and watering practice of village chicken in Kaffa and Benchmaji Zone.

MATERIALS AND METHODS

Description of the Study Area: The study was conducted at south nation nationality and peoples region, kaffa and Benchmaji zone, Adeyo, Chana, Gimbo and Guraferda districts. The study area was selected considering agro-ecology, socio economic significance of chicken production and population of indigenous chickens.

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Table 1: Description of the study area.

No.	Measurements	Adeyo	Gimbo	Chena	Guraferda
1	Altitude	1800-2800	800-1800	1851-1900	750-1800
2	Main soil Type	Clay, loam, sandy	sandy clay loam	Clay, loam, clay loam	Sandy, sandy clay, clay
3	Mean annual rainfall	1150	1170	1190	1145
4	Mean annual Temperature	19.5	18.5	21.5	30.5
5	Average land size	2.75	1.7	1.8	2.1
6	Latitude (NS):	$07^0$17'316"	$07^0$26'71"	$07^0$21'69"	$06^0$48'66"
7	Longitude (EW):	$036^0$22'243"	$036^0$20'54"	$036^0$23'32"	$035^0$14'96"

Sampling Method and Sample Size: A Multi-stage sampling procedure (purposive & random) was applied for the study, hence the study area was divided in to three agro-ecologies based on altitude as; highland (>2500masl), mid-altitude (1500-2500masl) and low-land (<1500masl). Then two farmer kebeles (the lowest administrative structure in the country) (boka and butta of adiyo district at kaffa zone) from the highland, two farmer kebels from low-land (bifitu03 and kujja of guraferda district at benchmaji zone) and two farmer kebeles from mid-altitude (beyamo of gimbo district, wareta of chena district at Kaffa zone) were selected purposively. Therefore a total of six representative kebeles were selected.

Agro ecology representation and chicken production potential were the main criterion considered in the selection of study sites. A simple random sampling technique was applied to choose 25 village chicken owner respondents in each of the selected kebeles of highland, mid-land and low-land which is 50 respondents from each agro-ecology which is a total of 150 respondents (chicken owner households) were interviewed using a pre-tested structured questionnaire for this study. Agro ecology representation, chicken production potential and market accessibility were the main criterion considered in the selection of study sites.

Data Analysis: The data was analyzed by using [9] statistical software through simple descriptive statistics like averageand percentage and presented in form of tabulation.

RESULTS AND DISCUSSION

Feeds and Feeding: Village chicken owners at Kafa and Bench Maji Zone supply little or nothing by the end of dry season when the feed resource is becoming scarce in the house. Most critical season of the year for provision of supplementary feed in the study area is from July to September which is a season most of cereals do not harvest from the farm and the available one also sow because of the season of rain which is favorable for cereal production.

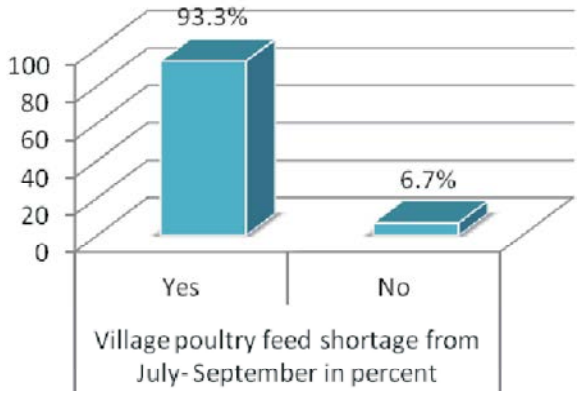

Fig. 1: Season of village chicken feed shortage.

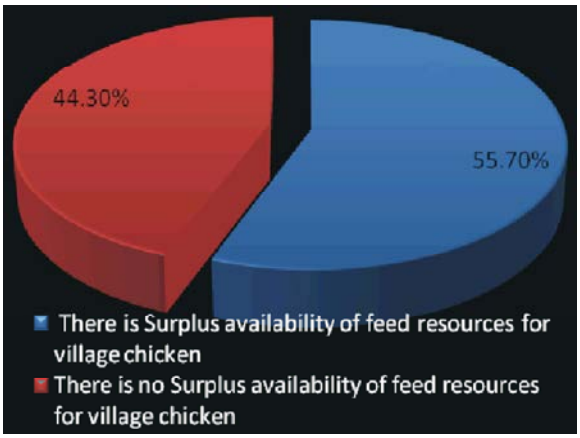

Fig. 2: Availability of feed resources for village chicken at the month of November.

This result is in line with [10] study result at Bure woreda, north-west Amhara. Furthermore 95% of the respondents indicated that major time of feed shortage is June to August [11].

According to the respondent availability of supplementary feed resources found surplus at the month of November were 55% whereas the rest (44.30%)

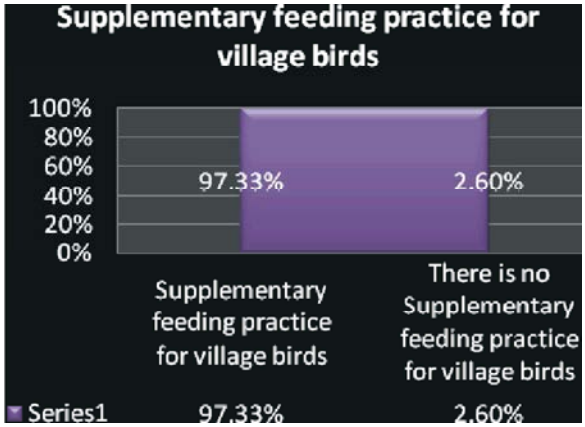

Fig. 3: Habit of Supplementary feeding practice for village chickens.

responded that supplementary feed was not found surplus which might found sufficiently or for some might shortage.

Lack of feed supplementation is one of the characteristics of free-ranging backyard poultry Production system [12]. However, in this study 97.33% of the respondents practiced Supplementary feeding. Another study in Awassa Zuria by [13] also indicated that 95% of the households offer supplementary feed. Study report at Dale, Wonsho and Lokaabaya *Weredas (*small administrative unit in Ethiopia*)* of Southern Ethiopia by [14], shows 98% of respondents practiced supplementary feeding.However, majority of the farmers 98% practiced supplementary feeding systems (Samson Leta and Endalew Bekana, 2010)

The major supplementary feed of the study area summarized in the above figure. The major supplementary feed in the surveyed area includes feed leftover in the house including "*Kocho*"(bakedenset) (60.67%), maize (18.67%),wheat (10.67%), other rains (5.33%), rice(3.33), rice and maize together (1.33%). In most cases, provision of feeds to chicken was seasonal. It also depends on the quantity and availability of the resources in the house.

Table 2:Grains feed for village chicken.

No.	Grains feed for village chicken	%
1	Maize	19.33
2	Sorgume	2
3	rice	6
4	Wheat	12.6
5	Maize and Sorgume	6
6	Maize and rice	7.33
7	Sorgume and rice	8
8	Maize and Wheat	9.33
9	All at different times	29.33

Table 3: Time of supplementary feed giving for village chickens.

No.	Time of supplementary feed giving for village birds	%
1	In the morning before they went out for scavenging	42.86
2	In the evening after scavenging	5.49
3	In the afternoon while scavenging	
4	Any time during the day time	42.86
5	In the morning before they went out for scavenging and In the evening after scavenging	4.4
6	In the morning before they went out for scavenging and In the afternoon while scavenging	2.43
7	In the morning before they went out for scavenging, In the evening after scavenging and In the afternoon while scavenging	1.96

Table 4: Purpose of supplementary feed giving

No.	Purpose of supplementary feed giving	%
1	Egg yield	39.33
2	Meat yield	22
3	Broodiness(during incubation)	0.67
4	Egg and meat yield	23.33
5	Age	2
6	All the above mentioned	12.67

Table 5: Major Green forage village chickens feed

No.	Major green forage village chickens feed	%
1	Cabbage	4
2	Different edible green grass like "keppo"	42
3	Different cereals leafe	7.33
4	Enset leafe	4.67
5	Weeds leafe	12
6	Different fruit leafe	6.67
7	All at different ways	23.33

According to respondents grains feed for village birds at Kaffa and Benchmaji Zone were: maize (19.33%), sorgum (2%), rice (6%), wheat (12.67%), maize and sorgum (6%), maize + rice (7.33%), sorghum + rice (8%), maize + wheat (9.33%), all these at different time (29.33%). This particular study agrees with Study conducted at central and western highlands of Ethiopia the major supplementary feeds are wheat and maize grains, but also include kitchen wastes and bone meal [7]. Study on Village Based Chicken production and utilization system in mid Rift valley of Oromia shows uses greater than 90% maize, wheat, sorghum and household waste products as the main supplement of chicken feed [11].

According to the respondent the trend of giving supplementary feed at Kaffa and benchmaji zone is in the morning before they go out for scavenging (42.86%), in

the evening after scavenging (5.49%),any time during day (42.86%), morning before they go out for scavenging and in the evening after scavenging (4.40%); morning before they go out for scavenging and in the afternoon while scavenging (2.2%), morning before they go out for scavenging, In the evening after scavenging and in the afternoon while scavenging (2.2%).

According to the respondents the basics of giving supplementary feed for village birds at Kaffa and benchmaji zone were for egg yield (39.33%), meat yield (22%), broodiness (during incubation) (0.67%), egg & meat yield(23.33%), age(2%), all of the above (12.67%).

Major green forage village birds feed at Kaffa and benchmaji zone were: different edible green grass including *keppo* (42%), weeds leafe (12%), different cereals leafe (7.33%), different fruit leafs (6.67%), enset leafe(4.67%), cabbage (4%), all at different ways (23.33%). Similar research conducted at Awassa [14] also reported that in the dry season the chicken ate different parts of the *Ensete ventricosum*including the corn. Their study also shows *Enset (Ensete ventricosum)* and cabbage were among the major food crops grown in the surveyed area leading chickens to compete for the same food source with the family. Similarly, [7] reported that grass as source of scavenging for village chicken in Ethiopia.

According to the farmers respond, 70% of them use home human consumption leftovers feed as a source of village birds feed alone or with others feed simultaneously. Similarly, [7] reported that human feed leftover (house scrub) as source of scavenging for village chicken in Ethiopia. Thus, the smallholder chicken production goes eco-friendly because they convert insects and household leftovers to valuable cheap and quality animal protein to the family.

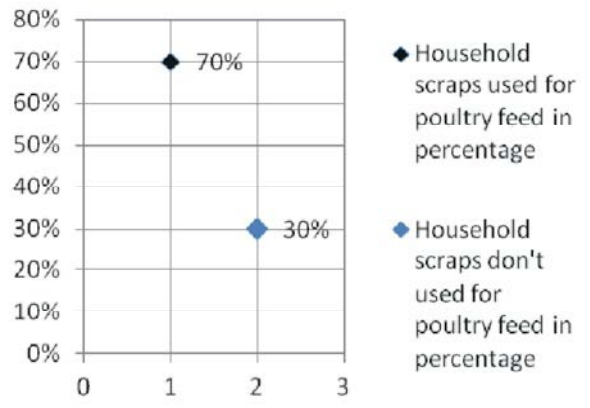

Fig. 4: Household scraps used for poultry feed in percent.

Watering

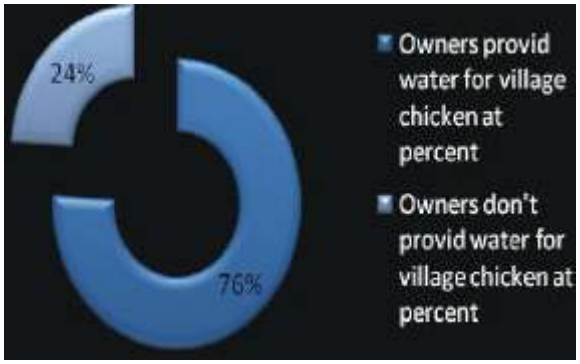

Fig. 5: Trained of providing water for village chicken at percent.

Table 6: Frequency of offering water for village chickens.

No.	Frequency of offering water	%
1	once	34.23
2	Twice	10.07
3	Three times	5.37
4	adlib	50.33

Table 7: Source of water for village chickens.

No.	Source of water for village	%
1	Rain water	14
2	River water	21
3	Spring water	41
4	Pipe water	2.67
5	Locally constructed underground water	3.33
6	Tap water	9.33
7	From all of the above at different times	8.67

Majority of village bird's owners (76%, 114 respondents) of the study area provided water to village birds.

Concerning the frequency of watering, most of bird producers (50.3%) used adlibtum type (making water available every time). [6] also reported that most of bird owners in North-West Amhara provided water to village birds. According to [11], 47% providing throughout the day, 14% once per day, 18% twice a day, 16% three times a day, 5% four times a day and the source of water is 66% tap, 15% river water, 6% bore hall and others 13%. During the dry season, tap water is provided to chickens every day in Homi village [7].

The current study revealed that the major sources of water for village chicken in the study area were spring water (41.33%), river water (21.33%), rain water (14%), tap water (9.33%), pipe water (2.67%), locally constructed

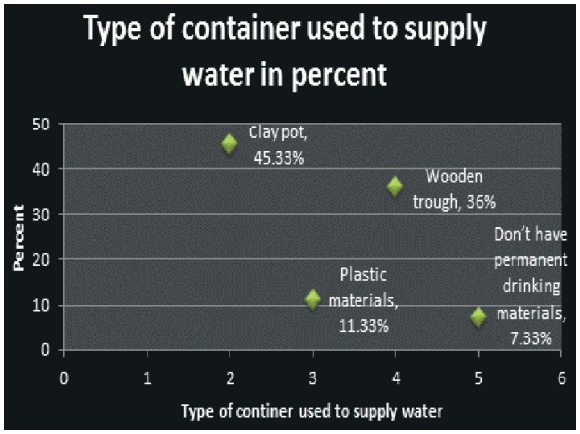

Fig. 6: Type of container used to supply water.

Table 8: Trained of washing water supplying materials.

No.	Trained of washing water supplying materials	%
1	Never	23.3
2	once	44
3	Twice	5.33
4	More than two times	2.33
5	Cleaned every times	25.33

underground water (2.67%), in different combinations of these (8.67%). The result is different from the report of [10] that most of village bird source of water is river water (30.4%) and spring water (28.5%). Results revealed that 92.5% of the households provide water for their chickens' regularly. The result is also different from the report of [15] Water sources used by the households in Metekel zone, Northwest Ethiopia were river (30.5%), spring (20.8%), tap water (19.5%), well water (12.3%) and in different combinations of these sources (16.9%). Water is freely available during the wet season from rainwater collected on the ground. In Dembel Gobeya village, water is in short supply during the dry season and the only source is spring water [7].

The current study indicated that majority of chicken owners (92.62%) had watering trough. Broken clay material, locally called "shekila", (45.33%), wooden trough (36%) and plastic made trough (11.33%) were the most widely used types of watering troughs in the study area. The result is in agreement with [10] study at Bure Woreda, North-west Amhara that broken clay material, locally called "shekila", wooden trough and plastic made trough at the order from the highest percent to lowest percent were the most widely used types of watering troughs in the study area. The result is contradict with the study report conducted at Dale, Wonsho and Lokaabaya Weredas of SNNPRS by [14] that plastic and clay dish containers, respectively at the order from the highest percent to lowest percent were the most widely used watering materials. In Dembel Gobeya village, only water is provided on feeders that are cleaned occasionally, while feed is provided on the ground [7].

Regarding the frequency of cleaning watering trough, 44% of respondents cleaned once per week, 23.33% never cleaned per week, 5.33% cleaned twice per week, 2% cleaned more than two times per week, 25.33% of village birds owners cleaned watering trough every day. The result is different from study result at Dale, Wonsho and Lokaabaya *Weredas (*small administrative unit in Ethiopia*)* of Southern Ethiopia by [14] that only 45.7% of the respondents wash the container regularly and the remaining 50% wash the container occasionally and 4.4% of the respondents never washed the container. The result is different from study result at bure *woreda* (small administrative unit in Ethiopia), north-west Amhara 50% of chicken owners cleaned sometimes when they remembered it and 23.9% cleaned every day. In Homi village, feed and water are provided on feeders that are cleaned every two to three days [7].

CONCLUSION AND RECOMMENDATION

Generally as in the other parts of the country, village chicken management practices on feed and feeding is poor. This factor has direct impact in productivity and decreasing the direct benefit of the farmers. Scavenging with occasional and seasonal supplementary feeding of homegrown grains and household scrubs (food refusals) is identified feed and feeding system in the study area.

It is suggested that feed, feeding and watering practice of village chicken producers can be improved through development strengthening of agricultural extension services, through trainings and advisory services. To transform the existing subsistence feed and feeding system to balanced and optimum one intervention options need to base on studied result of semi-commercial feeding system.

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