

Introduction and Demonstration of Commercial Broilers (Cobb-500) in and around Hawassa Town

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Abstract

This study was conducted at Hawassa zuria district with the aim of demonstrate full fledge poultry packages in and around urban areas to enhance meat production by introduction and demonstration of Commercial broilers (cobb-500) chicken breed. Totally 500 a day old chickens of Coob 500 broilers breed were purchase from Alema poultry multiplication and dissemination farm and 50 DOC's disseminated to each of the selected farmers with 50 kg of starter feed. Brooding was done using electrical brooder. The average weight old day old chicks was 41.1g. The average weight of birds at end of 1st, 2nd, 3rd, 4th, 5th, 6th and 7th weeks were 116.1, 209.4, 268.5, 546.7, 832.7, 981.3, 1233.6 respectively. The average final weight was 1264.7g (ranged 1106.4g–1264.7g). The total cumulative mortality was 5.6%. The result of the study signify that broiler producers requires high attention for all management issue particularly for feed, If they could not purchase and use commercial feed. Otherwise; it will not be an easy task to bring broilers in to marketable weight within seven weeks of growing period.

Key words: Broiler, Coob 500, Small Holder, Day old chicken, Producers, Hawassa

Introduction

Animal production in general and chickens in particular play important socioeconomic roles many poor rural households in developing countries (Alders, 2004; Salam, 2005). In sub Saharan Africa, 85% of all households keep chicken under free range system, with women owning 70% of it; providing cheap/affordable animal protein in the form of meat and eggs as well as being a reliable source of cash income (Ambali, 2007 and Akliluet al., 2007). Besides the sector significantly constitutes to human livelihood and food security of poor households and can be considered an initiative enterprise owing to its low cost (Abdelqader, 2007).

In spite of their great importance to the lives of most rural people, the contribution of village chicken is not proportion to the huge number. According to Singh (1990), low productivity of local breeds; prevalence of diseases; less availability and poor

quality of feeds; limited research and poor extension service; and lack of organized marketing and processing facilities are some of the most important constraints affecting the village chicken production system.

Distribution of a day-old and 3 months old improved chicken breeds, mainly RIR & WLH, has been some of the livestock extension packages implemented by the ministry of agriculture. The package is being implemented in many ways like; 5 pullets & 1 cockerel, 1 cock only, 15 pullets & 2 cocks and 50 day-old chicks. Despite such a large number of improved breeds distribution into the village system, the majority of the chicken population is still comprised of the local stock managed under the traditional production system. The contribution of improved chicken in the current production system is less than two percent (Mebratu, 1997).

A recent study on adoption of poultry breeds in the highlands of Ethiopia indicated that adoption has been limited by a set of factors such as, lack of strong extension follow up and complimentary inputs, diseases, unavailability of credit services and market problems. Besides, the numbers of breeds and birds included in the package were few (Hailemariam et al. 2006). This results to a huge gap between demand and supply of poultry products. According to Alemu and Tadelles (1997), the per capita egg and chicken meat consumption was estimated to be 57 eggs and 2.85 kg respectively. But in the current time it is less than one egg and a kilogram of chicken meat, which is very much less than a global average (153 eggs) (Smith and Wiseman, 2007).

A recent study by Nigussie et al, (2009), witnessed that the significance of enhancing institutional links and the need to transform the traditional piece meal approach of poultry technology transfer into promotion of carefully selected and packaged technologies. Therefore, to tackle the ever existing problem, different approaches of improved poultry technology packages dissemination should be followed on the basis of certain socio-economic and physical environments.

Objective

- To introduce and demonstrate meat type commercial chicken in urban/peri-urban area of Hawassa town.
- To demonstrate full-fledged poultry packages in and around urban areas
- To enhance meat production in urban areas.

Materials and Methods

Description of Study area, selection of participants and husbandry practices

The study was conducted at Hawassa Zuria woreda located Sidama Regional State of Ethiopia. Geographically it is located between 7.50 - 7.80 N latitude and between 38.180_ 38.250 E longitudes. The elevation area is ranges from 1680m to 2100m above sea level (a.s.l). After intensive discussion with agricultural experts of the town, 10 participants/farmers with higher willingness were selected. Then, after selected farmers and respective development agents were given an intensive training regarding management and health care of broilers coob-500. Participants were prepared shelters and two weeks earlier to arrival of day-old chicks, houses were cleaned and disinfected using formaldehyde solution. Deep litter housing system was used so that the floors of houses were bedded with 10 cm deep teff straw. Brooding of chicks was done by using 125 watt infra-red lamps and 24 hour light system to increase feed intake and other necessary equipment's like brooders, brooder guards and litter was prepared by farmers. Whereas equipment's like feeders and drinkers were supplied by the research centers. Chicken houses were equipped with well cleaned and disinfected feeders and drinkers. 500(five hundred) day-old broiler(Coob500) chicken breed purchased from Alema poultry multiplication and dissemination farm and 50(fifty) DOC's were disseminated to each of the farmer's with 50 kg commercial starter feed to feed only for the first 15 days, then locally prepared feed were allowed. Chickens were vaccinated for Mareks, NCD and Gumboro. At arrival to town, day-old chickens were given a solution of sugars in order to replace energy losses due to transportation of long journey. Feeding, watering and health care of chickens managed according to the guide of the breed.

Data collection

The following data were collected from the trial: weight of day old chicks (g), weekly and cumulative mortality percentages (as occurred due to either disease, predator, mechanical or others), weekly and total body weight gain/bird (g), final weight of chicks (g).

Data management and analysis:

The qualitative and quantitative data-sets were analyzed using appropriate statistical analysis software (SPSS, 20). More specifically descriptive statistics and General Linear Model (GLM) were used for this study. The following linear model was used during analysis of quantitative data:

Model statement regarding the effect of age on mortality:

$$Y_{ij} = \mu + m_i + \epsilon_{ij}$$

- Y_{ij} - is the chicken performance parameter estimate for bird j in age i , μ - is the overall mean
- m_i - is the fixed effect of age in weeks ($i=7$; week1, week 2, week 3, week 4, week 5, week 6, week 7) and
- ϵ_{ij} - is the residual error

Result and Discussion

Mortality and survivability of birds

As shown in the Tables 1 below, the total number of birds died from all participants in the entire period of study was 26. Due to the hardy nature of the breed there was no mortality during transportation and distribution. The maximum numbers of birds that means 2.2% died at 1st week where as minimum death 0% was recorded at 5th weeks. The average cumulative mortality percentage of birds recorded in this trial was 5.6%. This was higher than the result (1.7%) and (3.9%) that was presented by (Moges F,2014) and in contrast 7.8% of mortality was presented by (Dessie Abera,2017) on the same breed. Mortality level up to 5% was expected in big poultry farms and accepted as normal. But in case of this study 5.6% of mortality rate were recorded due to disease and predator. Majority of the chickens were died by mechanical damage and suffocation in the first week of study period. This was caused by poor housing system with uncontrolled environment and less follow up. This infers that broiler farmers should implement good and proper management practices, as these will ensure the optimum performance of broilers by reducing mortality that might occur due to poor management practices.

Table1: Mortality of birds and cumulative mortality recorded in each week of study conducted at Hawassa zuria district.

HH code	No of Do c's given	Mortality at 1st week	Mortality at 2nd week	Mortality at 3rd week	Mortality at 4th week	Mortality at 5th week	Mortality at 6th week	Mortality at 7th week	Total number of birds died at entire period
1	50	2	0	0	1	0	0	0	3
2	50	3	0	0	0	0	0	0	3
3	50	0	0	0	6	0	0	0	6
4	50	2	0	0	0	0	0	1	3
5	50	0	0	4	0	0	1	0	5
6	50	2	0	0	0	0	0	0	2
7	50	0	3	0	0	0	0	0	3
8	50	0	0	0	4	0	0	0	4
9	50	2	0	0	0	0	0	2	4
10	50	0	0	4	0	0	1	0	5
Mean ±sd		1.1 ±1.2a	0.3 ±0.95c	0.8 ±1.7b	0.1 ±2.1a	0.0 ±0	0.2 ±0.42	0.3 ±0.67c	2.8 ±1.23
Mortality		2.2 %	0.6 %	1.6 %	0.2 %	0%	0.4 %	0.6 %	5.6 %

2	Electricity cost	600
3	Litter /straw cost	700
4	Day old chicken price per head	6300
5	Vaccination and medication cost	600
6	Feed and chicken transport cost	6000
7	Total variable cost	40450
8	Total cost per head of chicken	77
9	Average selling price per chick	94
10	Total selling price	49350
	Net profit per chick	17

In table 4 above, day old chicks of broiler Cobb-500 were purchased from Alema farm and after disseminated to farmers all labor afforded by chicken producers and the cost was not considered in the analysis. Finished broilers were sold in live weight (per head) after 47 days of growing period. The result in the partial budget analysis indicates that smallholder broiler production was profitable with a net benefit of 17 ETB /head.

Conclusion

Cobb 500 commercial broiler showed good performance on survival, live weight gain and withstand environment under small scale production. The higher mortality rate was recorded in the first week of age infers that broiler growers need strict follow up at this stage and it's also important to implement good and proper management practices to reduce the overall mortality rate. The result of the trial showed that boiler producers should give a due attention for the preparation of good quality feed the producer could not purchase and use commercial feed to bring broilers in to marketable weight within seven weeks of growing period. Finally, the study indicated that broiler production is worthwhile given that appropriate management was followed as per the breed's management guideline.

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