

# Bovan White Chicken Growth Performance and Environmental Adaptability under Backyard Production System in Debre Tabor Town

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## Abstract

The study was conducted at Debre Tabor town using Bovan white chicken with a body weight of 34 gram. The objectives of the study were to assess growth performance and environmental adaptability of Bovan white chicken. Data for 66 days were collected using semi structure interview and then analyzed by using descriptive statistics. The average daily body weight gain of chickens was 5.24gram and mortality rate of chickens in the first two weeks was very high, which is about 540 chickens or 30% were died. This was probably associated due to management practice especially, due to lack of brooding system and multi vitamin intake. Then after one month's mortality rate was sharply decreases. Based on the result obtained it is recommended that management practice should be improved to decrease mortality rate especially in the early age of growth and to improve growth performance of chicken.

**Keywords:** Bovan white chicken, growth performance, environmental adaptability

## Introduction

Poultry production has an important economic, social and cultural benefit and plays a significant role in family nutrition in the developing countries, provides food (meat and egg) cash income and manure as fertilizer for crop production (Delgado *etal*, 1999). It has been estimated that 80% of the poultry population in Africa are found in traditional scavenging system (Gueye, 2000). In most tropical country it is based mainly on scavenging production system, which makes substantial contribution to household food security (Muchadeyi *etal*, 2007).

Ethiopia is one of the developing country contains a large poultry population in Africa, used as source of meat, egg, cash income and manure (Muchadeyi *etal*, 2007). However productivity is low and slow growth rate. The major causes of slow growth rate and low productivity are due to scarcity of feed and breed factor. Poultry feeding in most part of Ethiopia is based almost entirely on scavenging system, the quality and quantity of which is subject to great seasonal variation and the breeds are also poor in genotype. As a result, poor genotype of breed and and shortage of feed affects growth and decreases chicken output (ILCA, 1988).

Indigenous breeds are the main sources of meat and egg production in the country. According to (CSA, 2005) 97.8% of the total poultry population comprises indigenous birds. However the contribution of indigenous chicken to human nutrition and export earning is disproportionately small. All the available nutrition tends to indicate that the per capital poultry and poultry product consumption in Ethiopia is 57 eggs and 2.85kg of poultry meat per annum (Alemu, 1995). indigenous chicken are considered to be very poor in egg productive performance, attributed to the low genetic potential (slow growth and late sexual maturity). However exotic chickens are productive and grow faster (Tadele *etal*, 2003). In Ethiopia exotic chickens are crossed with local chickens in order to involve both adaptable and productive (Solomon, 2008).

Bovan white chickens are exotic chickens which are intensively introduced recently throughout the country mainly for egg production although environmental adaptability and growth performance of the breed has not studied. The study may be very important to serve at least as input to the government, non-governmental organization and also to the people in and around Debre tabor to engage on bovan white chicken. The objective of the present study were, therefore;

- ❖ To assess the growth performance of Bovan white chicken Debre Tabor town
- ❖ To assess environmental adaptability of Bovan white chicken in Debre Tabor town

## Materials and Methods

### Description of the Study Area

The study was conducted in Debre Tabor town of south Gondar zone of Amhara regional state. The town is located 666km and 105 km north of of Addis Ababa Bahridar respectively. The site is situated at 2706 m above sea level and has average annual temperature varies from 9 to 25°C and annual rainfall of 1599mm (DAO, 2006).

### Methods of Data Collection and Analysis

Semi structure interview was used to obtain information on growth performance and environmental adaptability of Bovan white chicken from the owner the farm. And we have used sesetive balance in our study to measure

growth( body weight change) of Bovan white chickens. The data were purposely collected from two poultry farms and then analyzed using descriptive statistics.

## Result and Discussion

### Growth Performance

The growth performance (body weight change) of Bovan white chickens is presented in table 1. Initial and final body weight of bovan white chicken were measured and recorded. Body weight gain of bovan white chicken was 346 gram in the first two months. the body weight gain of chicken in the two farm was exactly the same, this shows the same management was practiced in both farms. However, feed intake of individual chicken was unknown, because feed was given to chicken without weighed. so, feed intake was the gap of the study. The daily body weight gain of Bovan white chicken was in agreement with 6.54 gram which is reported by (Sorensen and Sswanyane, 2003) this was probably associated due to bad management (feeding, housing and brooding) and nutrition. During the first one week there was no brooding system and the chickens were highly suffered due to the absence of any means of brooding in the farm, so this may be one factor that chicken were not grow faster in the early age of growth. However, The daily body weight gain of bovan white chicken was by far greater than the average daily weight gain of most local chickens which is 4.85 gram reported by (Demeke, 2003).

Table1. body weight gain of bovan white chicken

Parameters	N=2		
	N1	N 2	Mean
IBW (gram)	34	34	34
FBW (gram)	380	380	380
BWG (gram)	346	346	346
DBWG (gram)	5.24	5.24	5.24

IBW=Initial body weight, FBW=Final body weight, BWG= Body weight gain, DBWG= daily body weight gain, N= Number of farms

### Environmental Adaptability

Environmental adaptability of Bovan white chicken was assessed by necked eye. That means by observing the response of chicken to environmental and mortality rate. Starting from the first week chickens were feeding actively and not dispersed when the environment was cold and hot respectively. This indicates chickens were adapted to environment. According to respondents chicken mortality was very high in the first two weeks about 540 chickens or 33% were died in the two farms and in the second two weeks 60 chickens were died. This was associated due to lack of appropriate brooding system and multivitamin intake. However from the first one month up to the end of the second month, chicken mortality was sharply decreases, this was because of chickens were adapted to new environment and appropriate management was practiced in the farm.

## Conclusions and Recommendations

### Conclusions

As the basis of result finding, it was concluded that growth performance of bovan white chickens was not fully exploited and the average body weight gain of bovan white chicken was 5.24 gram. In the first one month chicken mortality was very high and about 600 chickens or 33.3% were died. This was probably due to management system such as, housing system, feeding system in terms of quality and quantity and inappropriate brooding. However from one month's up to the second month chicken mortality was sharply decreases.

### 5.2. Recommendations

Based on the finding of the result it is recommended that

- ❖ To control the mortality by other than diseases, appropriate housing and brooding system Should also be explored.
- ❖ Giving great attention or emphasis for the health care , feed and feeding has to be considered to improve growth performance.
- ❖ Introduction of Bovan white breed is advocated, however, more work should be carried out to recommend it under varied environmental conditions.

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