

THE EFFECT OF SEX ON FEED CONVERSION EFFICIENCY OF BROILERS

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Abstract

The study was conducted to determine whether the sex of a broiler influenced its feed conversion efficiency since sex is known to affect a number of variables in animals. The difference between the mean weight gain of the male and female broilers was tested for significance using the student t-test at 0.05 level of significance. The study found no significant difference between the mean weights gained by the male and female broilers on attaining market weight. The null hypothesis was, therefore, accepted and the alternative hypothesis rejected.

Introduction

Poultry are mainly kept for egg and meat although they serve other important purposes. Chickens kept for meat which are fast growing are known as broilers. Birds which are kept for meat have to be fast growing with high feed conversion efficiency for the farmer to maximize profit. Hence, the suitability of any breed or type of chicken for commercial broiler production is a function of its feed conversion efficiency.

Feed conversion efficiency is an index of how efficiently feed given to animals is converted into the product for which the animal is being reared. In the case of poultry, it becomes an index in determining how efficiently the feed fed to the birds is converted into meat and eggs in excess of that needed for body maintenance. Ranjhan (1976) noted that feed conversion efficiency in broiler production could be expressed in three different ways;

- (a) Feed efficiency = $\frac{\text{weight gain}}{\text{feed in-take}}$
- (b) Efficiency of feed utilization = $\frac{\text{feed in-take}}{\text{weight gain}}$
- (c) Feed conversion = $\frac{\text{feed in-take}}{\text{body weight}}$

The rate at which an animal converts feed is a function of the genetic variables as well as the quality of the feed itself/other environmental variables. Animals would convert with minimum waste rations (feeds) that come closest to meeting or meet exactly the nutritional requirements of the animals. It is for this reason that the most reliable means of assessing feed quality is on the basis of its effect on the performance of the animal/bird (Oluyemi and Robers, 1981). Birds that grow faster than average usually consume more feed than average growing birds. Faster growth, therefore, means better feed conversion, or faster rate of gain since a greater proportion of feed consumed is used for production (Fisher and Boorman, 1986).

Breeds used for broiler production are heavy breeds. With good management they would attain market weight of about 1.5-2° kg between 8 and 12 weeks. Broilers or heavy strains consume more feed than egg laying or light strains. Etta (1982) observed that the rate of live weight gain is a very important parameter in broiler production. It is therefore, a good practice to weigh a sample of broiler flock about fortnightly. The weights obtained could be used to compare with established standards in order to determine how well the birds are growing, or otherwise.

Farmers, use broilers of both sexes for production. Sex is a factor that affects a number of variables in living organisms especially animals/birds. It is the objective of this paper, therefore, to determine whether the sex of the broiler affects its feed conversion efficiency.

Statement of Problem

Sex differences account for differences in animals/birds for a number of variables that have economic implications in livestock production. However, in poultry, while only female birds are used

for egg production, both male and female birds are used in broiler production. The effect of sex on feed conversion efficiency of broilers is worth investigating.

Research Questions

The following research questions have been put forward for the study. i. How does sex of chicken affect feed conversion efficiency in broilers? ii. What is the difference between the mean weight gain of male and female broilers on attaining market weights?

Hypothesis

HO: There is no significant difference between the mean weight gain of male and female broilers on attaining market weight.

Research Methodology and Design

The study is an experiment designed to determine the effect of sex on feed conversion in broilers.

Population of Study

The population of the study consists of all broiler chickens of Lohman Brown breed stock from which the sample was selected.

Sample of the Study

The sample for the study consisted of seventeen male broilers and eleven female broiler chickens randomly selected at day old.

Method of Data Collection

The data for the study was collected by weighing the chicks at day old and weighing them again at twelve weeks to determine the weight gain during the period. The feed given was equally weighed each time to determine the total quantity of feed consumed within the period.

Method of Data Analysis

The weight gain of individual birds was determined and the mean weight gain was calculated for each group (A=male, B = female) of broilers. The student t-test was used to test for significant difference between the mean weight gain of the two groups at 95% confidence level (0.05 level of significance).

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Data Analysis and Findings

Table I: Weight Gain of Male and Female Broilers at 12 Weeks in Kg

S/NO	MALE	FEMALE
1.	2.050	2.150
2.	2.000	2.100
3.	1.950	1.950
4.	2.200	2.100
5.	2.200	1.900
6.	2.150	2.150
7.	1.950	1.950
8.	1.950	1.950
9.	2.050	1.900
10	2.150	1.950
11.	2.100	2.000
12.	2.200	
13.	1.950	
14.	1.950	
15.	2.500	
16.	1.950	
17	2.050	

Table II: T-test Analysis of; significance of difference Between the Means of Groups A and B.

Groups	N	df	X	SD	Table t At 0.05-level	t-cal	Decision
A (Male) B (Female)	17	26	2.079	0.15	2.06	1.538	HO Accepted

Findings

The following findings were made by the study:

1. The sex of a broiler has no effect on the rate of its weight gain or feed conversion efficiency.
2. There is no significant difference between the feed conversion efficiency of male and female broilers.
3. Male and female broilers chicks are, therefore, equally good for raising a commercial broiler stock.

Discussion

The study has shown that sex does not influence feed conversion efficiency in broilers. The mean weight gain of female broilers within the rearing period of twelve weeks was 2.005 kilogrammes while that of male broilers was 2.079 kilogrammes. The difference between their mean weights was 0.074 kg. This difference was found to be insignificant at 95% confidence level and, therefore, arose by chance.

Feed conversion is an indicator of efficiency of feed utilization and forms a basis for quick check on the profitability of the farm (Kekeocha, 1984), and since male and female broilers have the same level of efficiency in feed utilization, it therefore, follows that female broilers are as good as male broilers in profitability in broiler business. The study concludes that the only innate factor that affects feed utilization is the genetic factor having established that sex is not a factor that affects feed utilization. The same level of performance recorded for both male and female broilers was obtained because they came from the same genetic source and received the same treatment (management). This is supported by Oluyemi and Roberts (1981), who observed that efficiency of feed utilization in the bird was partly genetic and partly environmental (management).

Recommendations

On the basis of the findings made by the study the following recommendations were made:

- (1) Farmers wishing to go into broiler production should obtain their day old chicks from hatcheries that can guarantee good stock that would attain market weight within twelve weeks. This means that stock, or the breed should have high feed conversion efficiency.
- (2) Farmers should not place emphasis on the sex of the broiler as both male and female broilers are equally good. The study, therefore, recommends that both male and female broilers should be used for commercial broiler production.
- (3) Considering the fact that the quality of the feed influences feed conversion efficiency, governments regulatory body, the Standard Organization of Nigeria (SON) should ensure strict compliance to quality standards by poultry and livestock feed manufacturers.

Conclusion

The efficiency of feed utilization is an indicator as to how profitable a stock of birds could be. The study found that sex does not influence efficiency of feed utilization (feed conversion efficiency). Hence, male and female broilers are equally good for commercial broiler production.

References

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