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PERFORMANCE AND ECONOMICS OF FINISHER BROILER CHICKENS FED DIFFERENT COMMERCIAL FEEDS

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ABSTRACT

The increased proliferation of substandard commercial poultry feeds has continued to be a threat to the progress of poultry production in Nigeria. An experiment was conducted to evaluate the utilization of four different commercial broiler finisher feeds sold in Bauchi town. Two hundred and forty (240) broiler chickens weighing between 1060.00 and 198.33g were randomly assigned to four commercial grade broiler: starter or finisher in replicates of four containing 15 birds each in a completely randomized design. Feed and water were supplied ad libitum and the feeding trial lasted for 3 weeks. Results for growth performance showed that except for feed conversion ratio, no parameter was significantly (P<0.05) affected. Final weight of birds which ranged between 1950.00 and 2200.96g, daily feed intake (124.26 – 157.39g) and daily weight gain (37.98 – 54.29g) were not significantly affected. However, feed conversion ratio (FCR) significantly (p<0.05) better on diet 2 (2.33) and 3 (3.06) and poorer on diets 4 (3.30) and 1 (4.79). Feed cost per kg was numerically lower on diet 4 (₦140.00) and higher on diets 1 and 2 (₦149.00). Feed cost per kg body weight gain wasnumerically lower on diet 2 (₦341.13) and higherr on diet 1 (₦599.77). It was therefore concluded that diets 2 and 3 which gave better feed conversion ratios had better quality than other diets and hence recommended for broiler chicken farmers.

Key words: Finisher, Economics, Commercial diets, Broiler Chicken, performance.

INTRODUCTION

Poultry production is an important rapid growing enterprise in Nigeria. According to CBN (2019). The sector is the most commercialized of all Nigeria's agricultural sub-sector, representing about 25% of the agricultural GDP. In developing countries, many studies have documented that the major constraint on livestock production is the availability and quality of feeds (ILRI, 2021). The intensification of animal production in developing countries, coupled with improved genetics, requires feed to be of sufficient quantity and quality to exploit the full potential of these animals. Previous studies have shown that some commercial poultry feeds sold across Nigerian markets do not meet the standards established by the standard organisation of Nigeria thus significant variation in performance of birds fed different commercial brands do exist (Sogunle *et al.*, 2009; Sanusi *et al.*, 2015; Akintomide *et al.*, 2021). Evaluation of feeds quality can be carried out either using a laboratory method or a feeding trial. The aim of this study was therefore to assess the quality of four different commercial broiler finisher feeds sold in Bauchi town through a feeding trial technique.

MATERIALS AND METHODS

Study Area

The experiment was conducted at the Teaching and Research Farm, Abubakar Tafawa Balewa University,(ATBU), Bauchi.

Experimental Diets

Four different commercial broiler finisher feeds were procured from poultry feed vendors in Bauchi town and designated as 1, 2, 3 and 4.

Experimental Birds and Management

Two hundred and forty finisher broiler chickens weighing between 1060.00 and 1198.33g were randomly allotted to four (4) different commercial feeds designated as 1, 2, 3 and 4 in replicates of 4 containing 15 birds each. Feed and water were served *ad libitum* and the study lasted for 3 weeks.

Data Collection

Data was collected for initial weight, daily feed intake, daily weight gain,mortality,while final weight and feed conversion ratio was calculated using a formulae. Similarly, data for feed cost per kg and feed cost per kg body weight gain were collected for economic analysis. Daily feed intake was obtained by difference between quantity of feed offered and the left-over collected the following morning. Weight gain was determined by the difference between two consecutive weighing carried out on weekly basis. The valueobtained was divided by 7 to obtain daily feed intake (DFI), whilefeed conversion ratio(FCR was obtained by dividing DFI bydaily weight gain(DWG). Mortality was recorded as it occurred.

Data Analysis

Except for mortality, all data collected was subjected to Analysis of Variance using the SPSS ver. 25 statistical software. Where there were significant differences among means Duncan Multiple Range Test (DMRT) was used to separate them.

RESULTS AND DISCUSSION

Results for growth performance of finisher broiler chickens fed four different commercial feeds is presented in Table 1. Except for feed conversion ratio, no parameter was significantly affected Final weight ranged from 1950.00g on diet 1 to 2200.96g on diet 2. Daily feed intake (g) was from 124.26g on diet 2 to 157.39g on diet 3. The daily feed intake was higher than 59.52 – 94.50g reported by Onigemo*et al.* (2020 in a similar trial. Daily weight gain which was also not significantly affected, ranged between 37.98g on diet 1 and 54.29g on diet 2. These values are comparable with those reported by Yisa *et al.* (2021) using graded levels of ginge in the feeds at starter(2 to 4 weeks)and finisher 4 to 8 weeks Ssignificant ($P<0.05$) effect of diet was recorded in feed conversion ratio with birds on feeds 2 (2.33) and 3 (3.06), which were the same, having better values than those on feeds4 (3.30) and 1 (4.79) which also did not differ. The better values obtained on these diets might be attributed to their better nutrient densities compared to the other diets. Research findings have shown that if dietary energy and essential amino acids of a diet are in the required quantities and proportion, feed conversion ratio will be enhanced (ROSS, 2011). Mortality of 1 bird was recorded for each of feeds1 and 2.

Results for economics of finisher broiler chickens fed different commercial diets are presented in Table 2. Total feed intake was higher in birds fed feed 3 (3.30kg), followed by those on feed 1 (3.18kg), feed 4 (2.83kg) and feed2 (2.61kg) in that order.

CONCLUSION AND RECOMMENDATION

Based on the daily weight gain, final weight gain, feed conversion ratio and feed cost in naira/kg body weight gain, diet 2 with the highest cost saving ₦258.64 is recommended for feeding broiler chicken in the study area.

Table 1: Performance of Finisher Broiler Chickens Fed Four Different Commercial Feeds (5-7 weeks)

	DIETS				
Parameter	1	2	3	4	SEM
Initial Weight(g)	1061.50	1060.00	1196.00	1198.33	22.10 ^{NS}
Final weight (g)	1950.00	2200.96	2139.64	2075.00	50.22 ^{NS}
Daily Feed intake (g)	151.50	124.26	157.39	134.86	9.78^{NS}
Daily weight gain (g)	37.98	54.29	53.51	41.75	6.42 ^{NS}
Feed Conversion ratio	4.79^{a}	2.33^{b}	3.06^{b}	3.30^{a}	0.73*
Mortality (%)	1	1	0	0	

alb Means within row with different superscripts differed significantly. * = (P<0.05) SEM = Standard Error of the Means, NS = Not significant

Table 2: Economics of Finisher Broiler Chickens Fed Four Different Commercial Feeds

Parameters	**1**	**2**	**3**	**4**
Total feed intake (kg)	3.18	2.61	3.30	2.83
Feed cost (N/kg)	149.00	149.00	143.00	140.00
Total feed cost (₦/bird)	473.82	388.89	471.90	396.20
Total weight gain (kg)	0.79	1.14	1.12	0.88
Cost Feed (₦/kg) weight(kg)	599.77	341.13	421.34	450.23
Cost Saving(₦)	-	258.64	178.43	149.54

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