

Performance Characteristics of Broiler Starter Fed Whole Millet on Sequential Basis

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Abstract:- A study was carried out to determine the performance characteristics of broiler starter fed whole millet on sequential basis. A total of 150-day old broiler chicks were used for this study. The chicks were divided in to 10 groups of 15 chicks each. Five groups were randomly allocated to each of the two-feeding method as replicate. The feeding methods formed the treatments; treatment I whole millet was fed in whole while treatment II consists of millet at balancer feed in the afternoon while other ingredients (Loose mix) was fed in the morning. Results of the study indicated that chicks on diet I (whole feeding method) ($p < 0.05$) had better weight gain, feed conversion, and cost benefit. Results indicated better income from chicks on diet I. It was concluded that millet is better fed as whole than in separate form.

I. INTRODUCTION

The importance of poultry to the national economy cannot be over emphasized as it makes great contribution to the economy of the country. The sector has a greater role in generating employment opportunity and improving animal production in Nigeria (Mbanasor *et al.*, 2002). Poultry is regarded as an important source of protein and its production has been recognized as an important enterprise in national economies of developing countries. Its role in improving income, nutritional status and standard of living of many small farmers and landless communities has been recognized by various scholars and rural development agencies (FAO, 2006). The nutritional status of many Nigerians is characterized by low protein intake (ILO *et al* 1981; Apantaku *et al* 1998; Sanya *et al* 2014). Poultry production have been described as one the fastest means of mitigating the problems of low animal protein intake in Nigeria. (Apantakun *et al* 1998; Pwaveno, 2013).

This research was aimed at determining the performance characteristics of broilers starter fed millet on sequential basis.

II. MATERIALS AND METHODS LOCATION OF EXPERIMENT:

This study was conducted at the Teaching and Research Unit of Animal Science Department, Faculty of Agriculture, Usmanu Danfodiyo University Sokoto located at Veterinary Clinic, Aliyu Jodi Road, Sokoto. Sokoto is located in the Sudan Savannah Zone in the extreme North Western part of Nigeria, and lies between latitudes 12°N to 13°N and longitudes 40 and 60°E (Mamman *et al.*, 2000) Sokoto has low humidity and high solar radiation. Maximum and minimum temperature of 42°C and 13°C was reported in May and January respectively.

➤ Experimental Procedure:

A total of one hundred and fifty (150) day old broiler chicks were divided in to 10 groups of 15 chicks each. Five groups were allocated to two feeding systems as treatment I and II. The feeding system are: Treatment I, Complete whole diet with both loose mix and balancer diet offered at the same time. Treatment II consists of the same diet as I but given to chicks as loose mix in the morning and balancer in the afternoon. Standard routine operation for broilers was followed as reported by

(smith, 1990). Weight was carried out at first time, before the commencement of the experiment to obtained initial weight and then on weekly basis to calculate for the final weight. Feed conversion ratio (FCR) was calculated from the records of feed intake and body weight gain.

Table 1: Gross composition of the experimental diets

Ingredients (%)	Millet based diet
Millet	47.00
Wheat offal	10.00
GNC	37.00
Bone meal	2.00
Blood meal	1.25
Limestone	2.00
Premix	0.25
Salt	0.25
Methionine	0.15
Lysine	0.10
Total	100

Table 2: Calculated chemical composition of the experimental diet

Energy (kcal/kg)	2826.23
CP (%)	23.05
Lysine (%)	0.84
Methionine (%)	0.25
Calcium (%)	1.20
Phosphorous	0.57
Crude fibre (%)	5.31
Other extract	4.45

III. DATA ANALYSIS

The data collected was subjected to analysis of variance (AVOVA) using the STAT VIEW (SAS, 1998) Statistical package.

IV. RESULTS AND DISCUSSION

Table 3: Performance Characteristics of Broiler stater

Parameters	Diet I	Diet II	SEM
initial body weight/g/b	63.81	62.58	0.96
final body weight/g/b	624.00	547.45	44.05
Average weight gain /g/b	560.19	484.84	43.97
Total feed intake/g/b	1072.64 ^a	921.68 ^b	132.22
Average feed intake/g/b/day	38.31 ^a	32.92 ^b	-77
Total water intake ml/b	2533.16 ^a	2002.56 ^b	34.16
Average water intake ml/b/day	90.47 ^a	71.52 ^b	1.21
Feed Conversion Ratio	2.40	1.96	0.21
Mortality	0.00% ^a	1.33% ^b	

ab= Means bearing different superscript along the same column differed (P<0.05)

From the result of the experiment (Table 3), the initial weight, final weight and feed conversion ratio of bird did not differ (P>0.05 between the treatment) However, average feed and water intake of bird fed both loose mix and balancer diet at the same recorded significantly higher (P<0.05) Values compared to those fed in separate forms (loose meal in the morning balancer in the afternoon). This result suggest that bird may likely consume less feed if

given in fraction forms without necessarily affecting weight of the birds. The non-significant feed conversion ratio of chicks for all feeding methods could be attributed to the average weight gain where by all birds for all the treatment had similar weight gain of about 500g. The high mortality recorded by chicks for diet II could not be attributed to the feeding method but due to outbreak of coccidiosis during the experiment.

Table 4: Cost Benefit Analysis

Item	Diet I	Diet II
Cost of day-old chicks (₦)/b	180.00	180.00
Cost of feed consumed (₦)/b	71.67	61.62
Cost of medication (₦)/b	35.9	35.9
Cost of feed (₦)/b	66.98	66.98
Total cost (₦)/b	287.57	277.52
Revenue from sale of birds (₦)/b	312	277.52
Net Income(₦)/b	24.24	-3.8

From the Table 4 above, the cost analysis, it is clear that it cost about N287.57 to raise broiler starter chicks from day old to 4 weeks of age when they are fed millet as whole (Loose mix and balancer together) While cost slightly reduce N277.52 for those chicks fed millet base diet on sequential basis (loose mix and balancer) on separate form at the end of the trial. The chicks for diet (I) could be sold at a value of N312 while those of diet II was sold at N273 the different could be raised as a result differences in their final body weight of the chicks at the starter phase of the experiment. The net income that could be realized negative on chicks in the diet (II) of N-3.8

V. CONCLUSION

The study established that sequential feeding using whole millet do not improve weight gain of broiler starters. It could also be seen from the results that feeding whole millet gave better income when compared with separate feeding. A lot of time could also be wasted if feeding is separated.

RECOMMENDATIONS

In an area where the price of millet is lower than that of maize, millet can replace maize in the diets of broiler starter. ii. This study recommended that millet should be fed to broiler starter as a whole and not (both loose mix and balancer diet) but rather in separate form (loose mix in the morning and balancer in the afternoon). iii. Further studies should be carried out to look at the effects of the feed particle sizes and systems of whole millet feeding on the performance of broiler starter.

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