
Performance of Broilers Fed Four Feed Types: A Source of Livelihood for Small Holder Farmers

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Abstract

Keyword:

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The experiment was conducted to determine the performance of broilers fed four commercial feed types as source of livelihood for small holder poultry farmers. The experiment was conducted at the Poultry and Research Farm, Federal College of Education (Technical), Bichi, Kano State, using 84 Obasanjo broiler chicks, 12 cages were used and 7 birds were allocated per cage. Four treatments were allocated at random as T1 = Livestock broiler supper starter, T2 = Chukun broiler supper starter, T3 = Vital broiler supper starter and T4 = Feggen fama broiler supper starter. All treatments were replicated trice. The experimental design was Completely Randomized Design (CRD). Generated data was analyzed using analysis of variance (ANOVA) by the use of SPSS version 20, were differences among means was separated using Tukey at 5% probability level. The result showed that, there was significant difference

(p<0.05) on the means of four commercial feed types fed to broilers. T1, T2, T3 and T4 at weeks 1, 2, 3, 4 and 5 was significantly different (p<0.05) on left over feeds (g) on broiler performance and there was also a significant difference on weight gain of broilers on T1, T2, T3 and T4 at weeks 1 to 5. In conclusion, T2 showed better performance with the highest value of 1,515.4g compared to other treatments and is hereby recommended for small holder poultry farmers to boost their source of livelihood.

Introduction

Poultry are widely acknowledged as the livestock of the poor, and poultry production is part of most smallholder farming systems. Guèye, (2000) writes that 85 percent of rural house-holds in sub-Saharan Africa including Nigeria keep chickens or other types of poultry. Poultry are equally important to smallholders in Asia (FAO, 2003; Islam and Jabbar, 2005) and Latin America (Mallia, 1999; Kyvsgaard, 2007).

The role and importance of poultry for rural livelihoods has emerged as a critical issue following the outbreaks of HPAI in Asia and Africa (WPSA, 2007; Baba, 2006; Traoré *et al.*, 2006; Akunzule, 2006). In developing countries, however, the majority of poultry are still kept by smallholders in less intensive systems. The advantages of these systems are the low levels of inputs that they require and the unique products they produce. These systems are practiced by people who have few other options and it is important that they survive as long as they are needed for social reasons, food security and livelihood support (Thomson, *et al* 2010). This paper utilizes four commercial feed types as source of livelihoods and framework to smallholder poultry farmers that lack the technical know-how on poultry feed formulation, to enjoy the best use of commercial feeds.

Aim and Objectives of the Study

1. To evaluate feed intake on broilers fed four commercial feed types
2. To evaluate weight gain of broilers fed four commercial feed types

Material and Methods

The study was carried out between April to May, 2018. Commercial broiler supper starter feeds were used as experimental samples purchased at different locations in Kano State Municipal. (Commercial Livestock broiler supper starter, Vital supper starter, Chukun supper starter and Faggen fama super starter) making a total of four (4) treatments and three (3) replication per treatment. Eighty four (84) Obasanjo broiler chicks were used for the experiment, using 12 cages, allocating 7 birds per cage. Birds were weighed weekly to ascertain weight gain, feeds were measured daily before feeding, and left over feeds was weighed to determine feed consumption and conversion.

Experimental location

Federal College of Education (Technical) Bichi, Kano State lies between the area (8°14'-12° 14'E and 12°14' 14° 13'N) in the Sudan Savannah ecological zone of North Western Nigeria. The zone is characterized by two distinct seasons namely, wet season (May-September) and dry season (October-April). Mean annual rainfall ranges from 500-1000 mm and temperature from 21-39°C.

Treatments Allocation

The four treatments were allocated by randomization as

T1 = Livestock broiler supper starter

T2 = Chukun broiler supper starter

T3 = Vital broiler supper starter

T4 = Feggen fama broiler supper starter

Experimental design

The [experimental design](#) was a completely randomized design (CRD).

Statistical analysis: Data were analyzed with the aid of Analysis of Variance (ANOVA) using SPSS version 20. Differences among means were separated using Tukey at 5% probability level.

Results and Discussion

The mean of four feed types fed (g) to broilers is shown in [Table 1](#). Feed fed T1, T2, T3 and T4 were significantly different ($p < 0.05$). The means ranges from 583.68 g to 657.84 g.

Table 1: Mean of Four Feed Types Fed (g) to Broilers

	TEUS DAY	WEDNE SDAY	THURS DAY	FRID AY	SARTU DAY	SUND AY	MON DAY
MEA	583.68	599.04	599.04	614.4	629.76	657.84	657.84
NS				0			
SEM	156.64	150.50	150.50	139.5	133.91	122.74	122.74
LS	*	*	*	1	*	*	*

SEM: Standard Error Mean, LS: Level of Significance

The left over feeds (g) on broiler performance is shown in [Table 2](#). Significant differences ($p < 0.05$) were observed among the different treatments T1, T2, T3 and T4 at weeks 1, 2, 3, 4, and 5. At week 1, T1 had the lowest value of 603.93g indicating highest feed intake, while T4 had the highest value of 867.33g indicating the lowest feed intake compared to T2 and T3. At week 2, T2 had the lowest value of 418.80g indicating highest feed intake, while T4 had the highest value of 534.03g indicating the lowest feed intake compared to T1 and T3. At weeks 3 and 4, T3 had the lowest values of 209.33g and 765.77g indicating highest feed intake, while T4 had the highest values of 443.30g and 1,207.33g indicating the lowest feed intake compared to T1 and T2. At week 5, T2 had the lowest value of 620.33g indicating highest feed intake, while T1 had the highest value of 1,362.67g indicating the lowest feed intake. The weight gain (g) of broilers fed four commercial feed types differed significantly ($p < 0.05$) among the treatments T1, T2, T3 and T4 at weeks 1, 2, 3, 4 and 5.

Table 2: Left Over Feeds (g) on Broiler Performance

TRT	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	SEM	LS
T1	603.93	482.23	213.27	792.27	1362.67	176.43	*
T2	756.70	418.80	392.30	799.17	620.33	89.96	*
T3	696.93	436.67	209.33	765.77	1240.00	165.78	*
T4	867.33	534.03	443.30	1207.33	1359.67	66.25	*

TRT: Treatment, SEM: Standard Error Mean, LS: Level of Significance

The weight gain (g) of broilers fed four commercial feed types is shown in [Table 2](#). Significant differences ($p < 0.05$) were observed among the different

treatments T1, T2, T3 and T4 at weeks 1, 2, 3, 4, and 5. T2 had the highest weight gain at weeks 1, 2, 3, 4 and 5 with the values 121.0g, 299.9g, 554.8g, 1,056.5g and 1,515.4g respectively, while T4 had the lowest weight gain at weeks 1, 3, 4 and 5 with the values 107.7g, 470.3g, 806.7g and 1,227.8g respectively. T1 had the lowest weight gain at week 2 with the value 247.7g

Table 3: Weight Gain (g) of Broilers Fed Four Commercial Feed Types

TREATMENT	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	LS
T1	117.6	247.7	552.0	994.3	1348.0	*
T2	121.0	299.9	554.8	1056.5	1515.4	*
T3	111.0	240.3	509.6	957.5	1345.8	*
T4	107.7	247.8	470.3	806.7	1227.8	*

LS: Level of Significance

Conclusion/Recommendation

Based on the result, it was therefore concluded that T2 gave better performance on Obasanjo broiler chicks having the highest weight gain with a moderate feed intake having a value 1,515.4g at five weeks, even though all treatments were able to attain table size at five weeks. T2 is therefore recommended for small holder broiler farmers without technical knowhow on broiler feed formulation.

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