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PERFORMANCE OF BROILER CHICKENS AT THE FINISHER STAGE FED ON CASSAVE PEELS AND RICE BRAN AS ENERGY SUBSTITUTE TO MAIZE

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ABSTRACT
This study was carried out to evaluate the use of rice bran and cassava peels for efficient and sustainable broiler production. Rice Bran and Dried Cassava Peels were collected from Gboko and were further dried to minimum moisture less than 4 % and analyzed for their proximate nutritive content. The dried rice bran and cassava peels were used to formulate the rations and fed to a total of 90 chickens aged 30 days and weighing an average of 639 g. In a complete randomized design, the birds were distributed in 3 treatments of 30 chickens and each with 03 replicates of 10 birds. Animals fed T2 diets consumed more feed than those fed on T0 and T1. Meanwhile, the final weight of chickens fed on the control diet was higher than the birds fed on T1 and T2 while the consumption index was higher in animals fed T1 and T2. At the end of this study, it was found that: The dried cassava peels and rice bran can substitute maize as energy source for sustainable broiler production. Their energy levels are comparable to that of maize. However, higher levels above 15% except fermented, would lead to a decrease in the performance of Broiler birds.
Keywords: Dried Cassava Peels; Rice Bran; Agro – Industrial By Products; Broiler Chicken

INTRODUCTION

Processing of cassava produces large quantities of waste and is generally considered to contribute significantly to environmental pollution [12]. Cassava starch production unit processing 100 tons of tubers per day has a production of 47 tons of fresh by-products, which can cause environmental problems when left in the vicinity of plant treatment or negligently disposed of [2]. In Nigeria, for example, cassava waste is generally left to rot or burned to create space for the accumulation of even more heaps. The clusters emit carbon dioxide and produce a strong offensive odor [1, 2]. Cassava peels (large quantities of cyanogenic glucosides) and corks (large amounts of biodegradable organic matter) can cause surface water pollution, especially if stored in the rain or simply thrown into surface waters [7, 4]. The variability of rice bran, and in particular its fiber content, has a very high effect on its nutritional value for poultry [6]. High-lysine rice bran and the content of methionine [13]. Nigeria, like many African countries, is experiencing significant population growth. Ensuring food security depends on intensifying livestock production in general and poultry production in particular. However, this sector faces several constraints, as is the high cost of the ingredients used in the rations. These ingredients account for approximately 60-70% of the cost of poultry production.Hence the study of the effect of cassava peels and rice bran on the growth performance of broiler chickens at the finisher stage.

MATERIAL AND METHODS

Rice Bran and Dried Cassava Peels were collected from Gboko. The rice bran and dried cassava peels were further dried to minimum moisture of less than 4% and analysed for their proximate nutritive content. The study was carried out at the experimental farm of the Akprean Orshi Polytechnic, Yandev.

Gboko LGA of Benue State. A total of 90 chickens aged 30 days and weighing an average of 640 g were distributed in 3 treatments of 30 chickens each and replicate of 10 birds per replicate. They were reared on deep litter at a density of 10 chickens / m2. Each of the experimental rations T0 (free from rice bran and cassava bark), T1 (containing 5% rice bran) and T2 (containing 4% cassava bark) were assigned to these experimental units completely randomized (Table 1, 2). The test was completed when the chickens were 46 days old. Food and water were served ad libitum.Data was collected on performance indicators such as feed intake, growth rate, from which feed efficiency and feed conversion ratrion will be collected ; mortality and cost efficiency

Proximate analysis of the feed ingredients

Table 1: Proximate composition of Dried cassava peel and Rice bran (% dry weight)

Sample	Ash	Moisture	Protein	Fat	Crude Fibre	Carbohydrate
Cassava peels	9.82b ± 0.4	90.01c ± 0.3	18.49c ± 0.1	3.43a ± 0.4	6.5a ± 0.2	316 0.3
Rice bran	7.76 ± 04	90.33 ± 02	18.95 ± 03	4.42 ± 02	6.84 ± 04	326 8.1

Values with the same alphabet along the same c olumn are not significantly different (P > 0.05).Values are mean ± S.E (n = 3).

Table 2: Formulated Rations for the study using rice bran and dried cassava peels as energy substitute for maize

Ingredient/ Level of inclusion	To	T1- PRB	T2 - PDCP
Maïs	55.68	51,68	52,68
Rice Bran	0	5	0
Dried Cassava peels	0	0	4
Soyabean meal	22	23	23
Groundnut cake	7	7	7
Fishmeal	5	5	5
Oyster shell	2	2	2
Bone ash	1	1	1
Methionine	0,15	0,15	0,15
Lysine	0,15	0,15	0,15
CMAV 5 %1	5	5	5
Iron sulphate	0,02	0,02	0,02
TOTALS	98	100	100
CP - %	21.45	21.82	21.84
CF-%	7	7	7
Energy – K.Cal/g	2834	2808	2772

The previously weighed feed was distributed to the birds and at the end of each week, the remains were weighed. Weekly food consumption was assessed by distinguishing between the quantities served and the

rejections collected in each experimental unit. At the beginning of the test and every 7 days thereafter, the chicks from each experimental unit were weighed. The weekly weight gain was obtained by making the difference between 2 consecutive weekly weights. The consumption index was obtained by comparing the amount of food consumed and the weight gain during the same week:

Results and discussion

In general, food consumption has been affected significantly by the different treatments, but it appears to be higher in T2. Animals fed T2 food consumed more food than those subjected to T0 and T1 treatment. This high consumption could be due to the fact that the 4 % level of skin incorporation was far from the incorporation limits obtained by Which was 15 %. More interesting results have been obtained with the feeding of fresh cassava peels to slow-growing chickens [19] (Table 3).

Table 3 : Effect of Cassava peels and Rice bran on growth parameters

Growth Parameters	Treatments		
	T0	T1	T2
Average feed consumption (g)	3768	3714	3801
Initial average live weight (g)	604	645	668
Final average weight (g)	2082	1701	1795
Weight gain (g)	1472	1056	1105
Consumption Indix	2,71	3,55	3,50

The final weight of chickens fed by the control treatment was higher than the birds fed on T1 and T2 test treatments. This would mean that cassava peels and rice bran would lead to a decrease in weight gain during growth with respect to the control. weight gain is higher (P> 0.05) for animals that consumed the food T0 control. Consumption Index (CI) is higher in animals fed T1 and T2. This higher consumption index is due to the high feed consumption of T1 and T2 treatments and the low weight gain of the animals fed with the granulated feed. These results corroborate those of Egbunike et al., 2009 which observed a decrease in growth performance has for a diet 5 % rate of incorporation of manioc peel flour [9]. In broiler chickens, rice bran can become rancid and reduce the growth and stability of meat lipids [8]. However, in contrast to authors such as El-Full *et al*., 2000, which states that rice bran can replace up to 25 % of maize in the diet and be economically effective in broiler chickens [11].

Conclusion and Recommendation

At the end of this study, which evaluated the effect of cassava peels and rice bran on the performance of finished broiler chickens, it was found that: The cassava and rice husk peels can substitute maize as energy source for sustainable broiler production. Their energy levels are comparable to that of maize. However, higher levels above 15 % except fermented, would lead to a decrease in the performance of Broiler growths in the respective finishes. Though the cassava peels used were not too friendly on the performance of the animals due to poor processing method. However, for subsequent and effective usage, the cassava peels should come from good and edible variety of cassava, which upon peeling should be washed and dried to minimum moisture (lessthan 4 %) and included up to 15 – 25 % in the finisher die

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