

APR -07

Carcass Characteristics of Weaner Rabbits Fed Graded Levels of Palm Kernel Cake Based Diets

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Abstract

Sixteen weaner rabbits of mixed sexes and breeds with initial weight between 0.6-0.9kg were fed diets containing different levels of palm kernel cake (PKC) inclusion to determine their growth response, carcass characteristics and dressing percentage. The animals were allowed to acclimatize for one week and then randomly allotted to four dietary treatments; T1, T2, T3, and T4 to contain four rabbits per treatment; each having replicates of two animals per replicate. T1 diet served as control, having 0% level of PKC, while the remaining diets contained PKC at the following levels, 5, 10 and 15% respectively. At the end of the feeding trial, two rabbits were selected from each treatment, starved overnight and slaughtered by severing the Jugular vein. Final live weight, slaughter weight, carcass weight, dressing percentage and weight of other organs such as skin, head, forelimbs, hind limbs, intestine, heart, liver and kidney were determined. The result showed that there was no significant difference ($p>0.05$) across treatment means in all the parameters measured. It was therefore concluded that any of the experimental diets can be fed to weaner rabbits without any negative effects on their carcass characteristics.

Keywords: Rabbits, palm kernel cake, carcass weight, jugular vein, dressing percentage.

Introduction

Nutrition is of major importance to the general health and wellbeing of livestock. An animal which is not well fed cannot give its best. Increased rabbit production could bridge the animal protein gap. The rabbit is also the perfect size for home consumption; best known for being prolific and utilize fodder efficiently (Biobaku *et al.*, 2003). They are able to breed throughout the year, have a short generation interval which makes them poised to provide animal protein to large number of low income earners (McNitt *et al.*, 1996). In spite of its better attributes over other livestock, the cost of production of rabbits has become a nightmare to local farmers due to the ever increasing cost of concentrate feeds (Biobaku *et al.*, 2003). In view of this, the need to develop alternative feeding materials that are cheap, readily available and with great potentials in supporting livestock growth has become imperative. Consequently, a possible potential of dietary supplementation of palm kernel cake needs to be investigated. Palm kernel cake (PKC) is a by-product from the palm-oil industry. It is readily available and of low cost. The production is not seasonal as the oil palm tree produce fruit year round. However, the peak of production falls between the months of March and May when seasonal protein meal source are scarce and expensive (Aduku *et al.*, 1988). The purpose of evaluation of carcass content is to predict the end point value of a live animal. End value of a meat animal is based on two basic criteria of quantity and quality (Bolet *et al.*, 2000).

The objective of this study is to determine the extent to which PKC could be used to support nutrient utilization and carcass composition in the diet of weaner rabbits.

Materials and Methods

The experimental work was carried out at a private facility in Vom, Jos, Plateau State, with an altitude of about 4, 200ft (1280). The average rainfall is between 50 and 60 (1300 – 1500cm) and rainy season extends from late March to early October. The maximum daily temperature is 19.6, while the mean relative humidity at room varies between 14% and 74%. Sixteen (16) weaner rabbits of mixed breed and sexes were used for the experiment. The rabbits were housed in long wooden hutches partitioned into cages and were allowed an adjustment period of one week before the feeding trial commenced. They were given preventive dosages of antibiotics (Oxytetracycline) and dewormer (albendazole suspension) based on manufacturer's prescription. Proximate composition of the experimental diets was determined using the method described by AOAC (1995).

At the beginning of the feeding trial, the rabbits were randomly allotted to four (4) dietary treatments of 0, 5, 10 and 15% inclusion levels of palm kernel cake (oily PKC) given as T1, T2, T3 and T4 respectively. Each treatment consists of four rabbits replicated twice with two rabbits per replicate in a Completely Randomized Design (CRD). The rabbits were fed twice daily in the morning and evening and water was given ad-libitum. Feed stuff was obtained from feedstuff dealers in Bukuru, Jos South L.G.A of Plateau State, Nigeria. The rabbits were weighed weekly and data collected was used to compute the final weight gain. Two rabbits from each treatment that were closest to the treatment's mean weight were selected, starved overnight and thereafter bled by severing the jugular vein were used to determine the carcass characteristics.

Parameters measured included final live weight, slaughter weight, carcass weight and dressing percentage. Internal organs such as lungs, liver, kidney and heart were removed and weighed. Drumsticks and shoulder were removed from the carcass. All these parts were weighed separately and recorded. Data collected were subjected to analysis of variance using

SPSS (16th version) and means were separated using Fisher method. The experiment was conducted from May-July 2017 and lasted for four (4) weeks.

Table 1: Percentage composition of experimental diets

Ingredients	T1	T2	T3	T4
Maize	55.00	45.00	40.00	35.00
PKC	0.00	10.00	15.00	20.00
GNC	17.00	17.00	17.00	17.00
Wheat offal	12.00	12.00	12.00	12.00
Fish meal	2.00	2.00	2.00	2.00
Soya bean cake	10.0	10.0	10.0	10.0
Limestone	1.50	1.50	1.50	1.50
Bone meal	0.25	0.25	0.25	0.25
Premix	0.25	0.25	0.25	0.25
Salt	0.25	0.25	0.25	0.25
Total	100	100	100	100

Results and Discussion

Table 2 shows the proximate analysis of the experimental diets used for the feeding trial for the period of four (4) weeks. It can be seen that the composition of crude protein ranges from 20.05 – 21.15%. This is within the range reported by Aduku, *et al.* (1988), when they did a comparative evaluation of palm kernel meal, peanut and sunflower meal in diets of weaner rabbits. Results of different carcass traits and meat cuts shown in Table 3 indicated no significant difference ($p>0.05$) for all the parameters measured across all dietary treatments. It is believed that if there was any major effect of anti-nutritional factors, organs like liver and kidney should be affected being the major detoxification organs as reported by Akinmutini (2008). This may likely mean that the anti-nutritional factors if any, in the ingredients are within a tolerable level. The result of this study support results obtained by Hernandez *et al.* (1998) where most carcass traits evaluated did not differ significantly except for fat percentage and dressing percentage.

Table 2: Proximate composition of the experimental diets

Parameter	T1	T2	T3	T4
Dry matter	90.74	90.11	90.65	90.83
Crude protein	21.6	21.01	21.15	20.05
Ether extract	2.73	2.77	2.88	3.07
Ash	5.22	4.66	4.74	4.11

Table 3: Carcass characteristics of weaner rabbits fed diets containing graded levels of palm kernel cake

Parameters (g)	T1	T2	T3	T4	SEM	LS
Final Live-weight	1050.00	1200.00	1200.00	950.00	70.70	NS
Slaughter weight	877.40	942.30	900.10	650.60	81.1	NS
Carcass weight	402.10	440.80	526.20	303.00	47.00	NS
Dressing Percentage	45.82	46.78	58.46	46.57	57.95	NS
Skin	63.35	70.90	72.30	54.00	6.31	NS
Head	98.45	99.00	100.50	83.00	4.310	NS
Fore limbs	35.45	36.90	51.00	25.00	3.55	NS
Hind limbs	59.20	60.95	60.95	44.00	5.41	NS
Intestine	250.90	249.40	282.00	187.00	17.3	NS
Heart	2.90	4.25	4.25	2.90	0.465	NS
Liver	32.50	36.80	29.75	34.00	1.71	NS
Lungs;	10.25	7.10	5.65	7.00	0.936	NS
Kidney	4.35	2.80	2.80	4.00	0.413	NS

SEM = Standard error of the mean

Conclusion

The findings of this study showed that there was no significant difference ($p>0.05$) among treatment means in all the parameters measured. It can therefore be concluded that any of the experimental diets can be fed to weaner rabbits without any negative effects on their growth and carcass characteristics.

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