



CARCASS CHARACTERISTICS OF RABBITS FED DIFFERENT FORAGES AS SUPPLEMENT

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Abstract

The experiment was carried out to determine the carcass characteristics of weaned rabbits fed selected forages as feed supplement. A total number of thirty six (36) weaned mixed breed of rabbits were allotted randomly to four (4) treatments with nine (9) rabbits and each treatment was replicated three (3) times with three rabbit per replicate and designated as Control (T1) concentrate plus (+) amaranthus, (T2) concentrate plus (+) tridax, (T3) concentrate plus (+) fig leaves, (T4) concentrate plus (+) water melon waste. The experiment lasted for eight (8) weeks. Data were obtained on carcass characteristics, internal organs, by-products. Results revealed that the value of carcass traits, internal organs and by-products were not significantly ($P>0.05$) different except in liver and lungs (internal organs) and pelts (skin) and hind legs (by-products) were not significantly different ($P>0.05$) for all the parameters obtained. Based on the findings, it can be recommended that T1 (Amaranthus), can be used as supplement to concentrate feed, because it was consumed more than other treatment groups.

Keywords: Rabbits, supplements, carcass, characteristics, forages

Introduction

Over the years, the world population has witnessed a drastic increase in human population especially in developing countries like Nigeria. This has led to an increased demand for food and protein of animal origin which is in short supply. FAO (2006) estimated the average protein consumption in Nigeria to stand at 8g/capita/day which is in sharp contrast to 38g/capita/day recommended for an individual per day (FAO, 2006). Feeding account for about 70 % total cost of production (Aduku and Olokoji, 2009). Hence the use of unconventional feedstuff is gaining ground in many developing countries and Nigeria in particular. The reduction of cost of using cheap and unconventional feed materials is an important aspect of commercial rabbit production (Muriu *et al.* 2002). This research work was aimed at evaluating the effects of different forage wastes as supplement on the carcass characteristics of rabbit meat.

Materials and methods

Location of the Experiment : The research work was carried out at the Rabbit Section of the Teaching and Research Farm of Ibrahim Badamasi Babangida University Lapai, Niger state.

Source of rabbits, test ingredient and management of rabbits

Thirty six weaned rabbits of mixed sexes and breeds were obtained from Sultan Veterinary Consult Farm No 2, Samaru Street Hayindogo Samaru Zaria, Kaduna state. Four different forage wastes namely tridax procumbens, amaranthus waste, fig leaves, and water melon wastes were collected from the surrounding environment in Lapai town, Lapai Local Government Area of Niger state, Nigeria. The rabbits were between 5-6 weeks and randomly allocated to four treatment groups with nine rabbits per treatment. Each treatment had three replicates of three rabbits per replicate. The same experimental diet was formulated with crude protein set at 23% for each. T1 was designated as concentrate with Amaranthus, T2 concentrate and Tridax procumbens waste, T3 concentrate with fig leaves waste and T4 concentrate and water melon peels/wastes. The rabbits were giving Ivermectin injection against both endo and ecto-parasite. Vitacox-plus and Neo-furaseryl-plus were adequately given as well. The cages were well clean and disinfected with



Dettol and equipped with drinkers and feeders. Prior to the experiment, the animals were allowed adjustment period of one week to enable them get used to their various cages and diets. Fresh clean water was provided *ad-libitum*. The experiment lasted for 8 weeks. Data generated were subjected to Analysis of Variance (ANOVA) using statistical package for social sciences (SPSS, 1998). The mean were separated using Duncan Multiple Range Test (DMRT) as described by Duncan, (1955).

Table 1: Composition of Experimental Diets

Ingradients	T ₁ :	T ₂ :	T ₃ :	T ₄ :
Maize	76.00	76.00	76.00	76.00
Fish meal	1.50	1.50	1.50	1.50
Groundnut cake	20.00	20.00	20.00	20.00
Limestone	1.00	1.00	1.00	1.00
Bone meal	1.00	1.00	1.00	1.00
Salt	0.25	0.25	0.25	0.25
Premix	0.25	0.25	0.25	0.25
Total	100	100	100	100

Results and Discussion

The mean value of the carcass traits of rabbit fed different forages as supplement are shown in Table 2. There were no significant ($P < 0.05$) differences in the parameters measured except for the dressing weight expressed as percentage live weight. The result appeared not to be in agreement with the observation by Taiwo *et al.* (2014) and Naandam *et al.* (2012) when rabbits were fed *stylothesis* and *sida acuta* as sole feed.

The result of internal organs (liver, kidney, lungs, intestine, heart and caecum) of rabbits fed different forages as supplements are presented in Table 3. There were no significant ($p > 0.05$) differences in all the parameters considered. The result coincides with the finding of Esiegwu *et al.* (2013) who observed non significant effects on internal organs weight when rabbits were fed with *Garcina kola* seed meal, but disagree with the findings of (Naandam *et al.*, 2012), where gut characteristics were affected by types of forages used.

The result of by-products (Blood weight, Pelt/skin, Head weight, Tail weight, Fore leg and Hind leg) of rabbits fed different forages as supplements are presented in Table 4. There were no significant ($p > 0.05$) differences in the parameters determined except for pelt/skin and hind leg weight. This could probably suggests that the dietary treatments result in negative metabolic reactions or disorders that could affect muscles growth, lipogenesis / lipolysis or osteolastic activity. (Taylor *et al.*, 2003). Moreover, Aduku *et al.* (1986) reported that, skin, feet and some offals are not consumed in Europe and U.S.A; they only increased the dressing percentages of rabbit from 60-62 % and 50 % respectively and that head, skin and feet contributed about 18, 11 and 3 % respectively to the skinned carcass

Table 2: Carcass characteristics of rabbits fed different forages as supplements

Parameters	T1	T2	T3	T4	SED	LSD
Thoracic (%lw)	46.20	47.13	49.93	38.63	6.98	NS
Fore limb	42.93	43.53	42.30	41.10	6.41	NS
Hind limb	86.97	91.57	76.60	62.66	13.12	NS
Dressing wt(%Lw)	533.33	501.67 ^b	533.33 ^b	500.00 ^b	84.16	*



Slaughter wt(g)	1066.67	1156.67	1050.00	1033.33	128.6	NS
Lumber sacral(%Lw)	102.47	110.60	106.13	94.07	18.62	NS
Neck weight(%Lw)	13.40	15.27	15.47	13.00	3.51	NS

abc= means within the same row bearing different superscript differ significantly ($p < 0.05$) $\pm$ = standard error of means (SEM) least significant difference (LSD)

Key T₁ = Concentrate plus Ammarathus(100g) T₂ = Concrtrate plus Tridaxprocumbens(100g)

T₃ = Concentrate plus Fig leaves(ficuscarpensis) (100g) T₄ = Concentrate plus Water Melon Waste(100g)

Table 3: Internal organs of rabbits fed different forages as supplements.

Parameters	T1	T2	T3	T4	SED	LSD
Liver	15.87	17.23	15.13		13.20	1.04 NS
Kidney	4.70	5.47	4.70		4.33	0.29 NS
Lungs	3.53	3.97	4.70		2.80	0.240 NS
Intestine	79.80	82.07	71.60		80.87	5.69 NS
Heart	1.73	1.90	1.43		1.27	0.10 NS
Ceacum	26.53	32.07	29.87		34.30	2.11 NS

abc = means within the same row bearing different superscript differ significantly ($p < 0.05$) NS= not significant difference ($P > 0.05$) *=significant ($P < 0.05$) SEM= standard error of means. least significant difference (LSD)

Key: T₁ = Concentrate plus Amaranthus(100g) T₂ = Concentrate plus Tridaxprocumbens(100g) T₃ = Concentrate plus Fig leaves (ficuscarpensis) T₄ = Concentrate plus Water Melon Waste

Table4: Table 4: By-products of rabbits fed different forages as supplements

Parameters	Treatments					
% live weight	T ₁	T ₂	T ₃	T ₄	SEM	LSD
Blood weight	16.47	15.33	16.20	14.33	1.44	NS
Pelt/skin	75.33 ^a	73.03 ^a	52.60 ^b	48.77 ^c	4.48	*
Head weight	53.87	58.50	56.93	56.97	2.18	NS
Tail weight	2.63	2.83	2.17	2.20	0.12	NS
Fore leg	4.00	4.73	3.87	3.80	0.24	NS
Hind leg	9.13 ^a	8.73 ^b	8.13 ^c	7.73 ^c	0.65	*

abc = means within the same row bearing different superscript differ significantly ($p < 0.05$) NS= not significant difference ($P > 0.05$) *=significant ($P < 0.05$) SEM= standard error of means. least significant difference (LSD)

Key: T₁ = Concentrate plus Ammarathus (100g) T₂ = Concentrate plustridaxprocumbens (100g)



T₃ = Concentrate plus Fig leave (*fiscus carpensis*) (100g) T₄ = Concentrate plus Water Melon Waste (100g)

Conclusion: The result of experiment showed that forages which are cheaply available in all parts of the country can be successfully used to supplement rabbits diet up to 100g without any side effect on carcass characteristics of growing rabbits.

Recommendation: Based on the findings, it can be recommended that T₂ (Tridax), can be used as supplement to concentrate feed, because it was consumed more than other treatment groups.

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