

COMPARATIVE EVALUATION OF THE GROWTH PERFORMANCE AND CARCASS CHARACTERISTICS OF WEANED RABBITS FED SELECTED FORAGE LEAVES

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Abstract

A 77 day feeding trial was conducted to comparatively evaluate some selected forages in combination with concentrate diet on the growth performance and carcass characteristics of weaner rabbits. A total of 36 weaner rabbits with an initial weight of 600-700g of mixed breeds and sexes, aged between 5-6 weeks, were randomly allotted to 4 dietary treatments with 9 rabbits per treatment and 3 rabbits per replicate in a completely randomised design. The rabbits were ratio 1:2 in their sex distribution (1 male and 2 female). Rabbits in T1 were fed with *Tridax procumbens* (coat buttons) which served as the control, T2, *Senna occidentalis* (Negro coffee), T3, *Mangifera indica* (mango) leaf and T4 with *Luffa aegyptiaca* (sponge gourd). The forages were fed dried and all the treatment rabbits were also fed the same concentrate diet. Growth performance result showed that final weight, weight gain, and feed conversion ratio were not significantly affected by the treatments. The carcass characteristics of the rabbits showed no significant differences among the treatment means.

It was concluded that the selected forages had no detrimental effect on the growth performance and carcass characteristics of rabbits.

Keywords: rabbit, forages, concentrate, performance, carcass

Introduction

The search for a novel, nutritionally viable, cheap and readily available source of plant nutrients, especially protein, to supplement the highly competed and demanding grains like soybeans is now a major concern in livestock production (Adeniji *et al.*, 2005; Obun and Ayanwale, 2006). Gueye and Branckaert (2002) observed that in low-income food-deficit countries, surpluses of cereals are generally not available and therefore, not advisable to develop wholly grain based feeding system. They however, recommended a policy to identify and use locally available feed resources such as forages as supplements in rabbit diets with high nutritive value as an alternative and cheap source of protein for rabbits which could reduce total dependence on concentrate feeding thereby keeping the cost of rabbit production low and sustain growing interest in rabbit production (Omolade, 2016).

Forages are cheap and in abundance in tropical countries during rainy season and can be harvested and stored for use as feed materials during off seasons. Rabbits perform better when fed with a mixture of forage and concentrate (Adeyemo *et al.*, 2014). Forages such as *Panicum maximum* (guinea grass) and *Tridax procumbens* are acceptable by rabbits (Abu *et al.*, 2008). The under-utilization of some forages due to inadequate information of their nutritive values and their effects on rabbit necessitated this research with the aim of comparing the performance of rabbits fed with different forage leaves as well as possibility of reducing total dependent on the conventional feed materials and the total cost of production for the small scale rabbit producers.

Materials and Methods

A total of 36 weaned rabbits of mixed sexes aged between 5-6 weeks with initial weight of 600-700g were weighed individually and randomly assigned to the 4 experimental treatments with each housing 9 rabbits and replicated 3 times with 3 rabbits in a completely randomized design (CRD). On arrival, the rabbits were given anti- stress drugs and multivitamins. Dewormer, coccidiostat and antibiotics were also administered for a healthy start. Weighed amounts of the experimental diets were given to the animals for a period of 11 weeks. Concentrate and forage were fed separately at different time interval. The concentrate diet was served between 8.00a.m–6.00p.m while the forage leaves were served between 6.00p.m–8.00a.m of the following day. The forage leaves were collected from the Poultry Production Unit premises, Minna, Niger state. They were cleaned, dried under room temperature of 35°C and stored for use. A portion of the forage leaves were milled using 1mm sieve

and used for chemical analysis. Data was collected on growth performance (weight gain, feed intake, and feed conversion ratio) and carcass characteristics. The data collected were statistically analysed using SAS (2008).

Proximate composition: The dry matter, crude protein, ether extract and ash contents of the forage samples and the concentrate diet were determined according to A.O.A.C. (2000).

Table 1: Composition of the concentrate diet

Ingredient	(%)
Maize	50.0
Soybean meal	5.0
Maize offal	27.0
Ground nut cake	12.0
Fish meal	2.0
Bone meal	3.0
Salt	0.25
Methionine	0.25
Lysine	0.25
Vit/Min premix	0.25
Total	100

Table 2: Proximate composition of the selected forages

Parameters	T1	T2	T3	T4
Dry matter (%)	93.00	92.80	95.80	93.80
Crude protein (%)	18.38	19.85	10.85	11.62
Crude fibre (%)	18.50	14.50	27.00	13.00
Ether extract (%)	1.82	2.81	1.46	2.00
Ash (%)	19.50	16.50	13.00	25.50
NFE (%)	34.80	39.14	43.49	41.68
ME (Kcal/kg)	2062.03	2351.53	2063.61	2071.58

Means on the same row were not significantly ($P>0.05$) different: ME= metabolisable energy; NFE = nitrogen free extract; T1= tridax procumbens; T2= senna occidentalis; T3= manifera indica; T4= luffa aegyptiaca

Results and discussions

The result of growth performance of rabbits fed some selected forages shown in table 3 were not significantly different among the treatment means. This result was in line with the report of Adeyemo *et al* (2014). The authors concluded in their research that rabbits perform better when fed combinations of concentrates and forages. The selected forages compared well with the conventional one using *Tridax procumbens* as control. The result of carcass characteristics of rabbits fed some selected forages shown in Table 4 revealed no significant differences among the treatment means.

Table 2: Growth performance of rabbit fed concentrate supplemented with forages

Parameters	T ₁	T ₂	T ₃	T ₄	SEM	LOS
Initial weight (g)	677.78	670.00	672.22	666.67	6.34	NS
final weight (g)	1334.00	1282.67	1275.33	1291.89	59.12	NS
Total weight gain(g)	656.22	612.67	603.11	625.22	55.86	NS
weight gain/day (g)	8.52	8.96	8.50	8.85	0.65	NS
Feed intake/day (g)	41.96	41.67	44.58	43.83	1.37	NS
FCR	5.30	4.78	5.48	5.19	0.31	NS
Mortality (%)	11.11	11.11	11.11	11.11	1.98	NS

Means on the same row were not significantly ($P>0.05$) different; SEM = standard error of mean; LOS= level of significance; NS= not significantly different ($P>0.05$); T1= tridax procumbens; T2= senna occidentalis; T3= mangifera indica; T4= luffa aegyptiaca

Table 3: carcass characteristics of rabbits fed concentrate supplemented with forages

Parameters (%)	T ₁	T ₂	T ₃	T ₄	SEM	LOS
live weight (g)	1418.00	1364.00	1371.33	1358.33	24.89	NS
Dressed weight %	798.00	826.33	782.67	749.33	27.15	NS
Dressing %	55.97	60.47	57.00	55.03	0.69	NS
CTR	16.85	17.60	18.72	19.34	0.69	NS
LSR	26.61	22.14	27.27	25.83	1.34	NS
hind limb	26.15	23.71	25.48	25.04	0.69	NS
fore limb	16.71	15.60	16.64	16.93	0.48	NS
Liver	3.29	2.83	2.87	3.11	0.09	NS
Lungs	0.57	0.66	0.60	0.67	0.04	NS
Heart	0.21	0.24	0.25	0.24	0.02	NS
Kidney	0.78	0.90	0.61	0.81	0.04	NS
abd fat	0.49	1.18	1.03	0.91	0.19	NS
Intestine	14.59	13.94	11.76	14.25	0.60	NS
Head	9.38	9.26	9.32	9.00	0.11	NS
Tail	0.98	0.86	0.63	0.82	0.06	NS
Pelt	11.72	11.20	11.62	11.03	0.19	NS

Means in the same row were not significantly ($P>0.05$) different. SEM=standard error of mean; ; LOS= level of significance; NS= not significantly different ($P>0.05$) T1= tridax procumbens; T2= senna occidentalis; T3= mangifera indica; T4= luffa aegyptiaca; CTR= Cervico-thoracic region; LSR= lumbosacral region

Conclusion

It was concluded that the selected forages had no detrimental effect on the growth performance and carcass characteristics of rabbits, and that any of the selected forages could be used to feed rabbits.

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