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Evaluation of Feeding Graded Levels of Dried and Milled *Ficus thonningii* Leaves on Growth Performance, Carcass Characteristics and Organs of Weaner Rabbits

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Abstract: Twenty weaner rabbits of average initial weight of 535g were fed four diets containing milled *Ficus thonningii* leaf meal at 0% 5% 10% and 15% levels to evaluate its effect on their growth performance and carcass characteristics. Rabbits were randomly allotted to cages and four dietary treatments randomly allotted to cages. There were five replications of the four treatments in a randomized block design trial. The study lasted eleven weeks. Dietary treatments did not significantly ($P>0.05$) affect average daily feed intake, average daily weight gain, carcass and organ characteristics. However, feed to gain ratio was significantly ($P<0.05$) affected by level of feeding *Ficus thonningii*. It was concluded that *Ficus thonningii* leaf meal could be fed up to 15% level in rabbit diet.

Key words: Weaner rabbits, *Ficus thonningii* leaf meal, feed intake

Introduction

The feeding of browse forage to animals, especially in the dry season is essential when grass and herbaceous legume forages are scarce. *Ficus thonningii* tree remains green most of the year and provides protein, vitamins and minerals that are lacking in grassland pastures in the dry season.

Some workers (Adegbola and Oduozo, 1992; Alawa and Amadi, 1991) opined that some of the limiting factors associated with using browse plants as animal feeds include procurement, storage, high fibre content, toxic substances, poor feed intake, poor digestibility and consequent low performance of the animals. However, there is need to further investigate the use of these browse plants because of their relative availability as alternative feed resources to livestock.

Bamikole *et al.* (2001) indicated that the mean CP content of *Ficus* species was consistent with the reported CP of browse in tropical West Africa (Chichester Le Houerou, 1980). The authors also were of the view that the level of CP in *Ficus* is higher than the critical level of 7g / 100g DM at which feed intake of the animal is depressed (Minson, 1990). Bamikole *et al.* (2001) reported that *Ficus* species have good levels of nutrient, particularly protein for livestock feeding and that the level of anti-nutritional factors is low and a good acceptability level is guaranteed in *Ficus thonningii*, *Ficus religiosa* and *Ficus mucosa*.

This present trial was designed to evaluate the effect of feeding graded level of *Ficus* leaf meal on the performance and carcass characteristics of rabbits.

Materials and Methods

Preparation of *Ficus thonningii* leaf meal: Fresh leaves were harvested together with their petioles and dried

under shade to preserve their greenish colour. They were then milled after practical dryness was achieved.

Twenty healthy weaner rabbits were purchased locally from the local market and treated against endo- and ecto-parasites with Ivomec (Roche Nig. Ltd) at the rate of 0.2ml per rabbit as prophylactic treatment. Rabbits were individually housed and were randomly assigned to cages and treatments randomly allotted to cages. *Ficus* leaf meal was fed at 0, 5, 10 or 15% level in the ration (Table 1). There were 5 replications of the four treatments in a randomized block design trial.

Rabbits were fed weighed quantities of feed daily with one half offered in the morning at 8.00 am, and the other half at 4.00 p.m. Water was also available to rabbits and records of feed refusals and feed intake were taken throughout the experimental period. The animals were weighed weekly. At the end of the growth study (11 weeks), all the rabbits were fasted overnight, weighed and slaughtered to obtain the carcass parameters and organ weights.

Proximate chemical analysis of *Ficus thonningii* leafmeal and other ingredients were carried out according to the methods of A.O.A.C. (1975). Data Collected were statistically analyzed according to the method of Cochran and Cox (1957) and differences between treatment means compared using the Duncan's Multiple Range Test (Steel and Torrie, 1960). All analysis were facilitated using the SAS (1995).

Results and Discussion

Ficus thonningii has the following chemical analysis - Dry matter, 40.61; crude protein, 18.51; crude fibre, 19.41; ether extract, 5.57 and ash, 10.87. The proximate chemical composition of dried *Ficus thonningii* leaves is similar to the data reported by Bamikole *et al.* (2001).

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Table 1: Ingredient composition of the experimental diets using graded levels of *Ficus thonningii*

Ingredients	Treatment (Inclusion of <i>thonningii</i> leaves)			
	0	5	10	15
Maize	39.48	36.03	32.61	29.25
Soyabean meal (Full fat)	31.77	30.22	28.64	27.00
<i>Ficus thonningii</i>	0	5.00	10.00	15.00
Maize offal	15.00	15.00	15.00	15.00
Rice offal	10.00	10.00	10.00	10.00
Bone meal	3.00	3.00	3.00	3.00
Salt	0.30	0.30	0.30	0.30
Vitamin and Mineral Premix	0.25	0.25	0.25	0.25
Lysine	0.10	0.10	0.10	0.10
Methionine	0.10	0.10	0.10	0.10
	100	100	100	100
Chemical Analysis				
ME (Kcal/kg)	2673.26	2503.71	2334.20	2164.76
CP	17.01	17.10	17.18	17.29
Calcium (%)	1.06	1.06	1.05	1.05
Phosphorus	0.70	0.68	0.66	0.64
Lysine	0.75	0.71	0.68	0.64
Methionine	0.55	0.64	0.52	0.51

Table 2: The effect of feeding graded level of *Ficus thonningii* on performance characteristics of rabbits

Items	Level of <i>thonningii</i> leaves				Mean	SE
	0	5	10	15		
Initial wt (average), g	540	530	530	530	532.5	NS
Final wt at slaughter, g	1484	1502	1450	1404	1460	NS
Average daily feed intake, g	49.61	51.87	59.13	58.95	59.89	0.17
Average daily gain.	12.26	12.63	11.95	11.35	12.05	0.63
Feed : gain	4.04 ^a	4.10 ^a	4.96 ^b	5.21 ^b	4.58	0.05

a.b means in the same row with different superscripts differ significantly (PO.05)

Table 3: The effect of feeding graded level of *Ficus thonningii* on carcass characteristics and organ weights of rabbits

Variables	Level of <i>thonningii</i> leaves				Mean	SE
	0	5	10	15		
Final wt at slaughter, g	1484	1502	1450	1404	1460	43.00
Carcass weight, g	807.40	794.20	748.20	716.40	832.95	94.42
Dressing percent %	54.14	53.01	51.56	51.13	52.46	0.94
Skin and feet weight, g	148.20	150.40	147.60	149.60	148.95	9.64
Full GIT weight	273.00	287.20	260.40	269.20	272.65	20.17
Empty GIT weight	145.00	149.00	141.10	141.50	144.15	7.02
Head, g	130.80	131.40	132.20	132.00	131.55	5.64
Kidney, g	12.80	10.80	11.00	12.50	11.80	1.74
Heart, g	4.60	4.30	4.10	4.00		4.24
Liver, g	44.80	48.20	46.80	45.40	46.25	4.72
Lung, g	9.20	12.00	10.80	12.80	11.35	1.74
Thigh	260.60	264.00	252.40	237.00	253.50	15.45
Loin	109.60	115.20	119.20	107.00	112.75	9.46
Rack	87.80	91.00	83.00	85.00	86.67	10.64
Shoulder	246.00	246.00	240.40	225.00	239.35	16.57

The crude protein content was reported to range from 13.09 to 18.02g/100g DM while in this study it is 18.51g/100g DM. The authors reported an ash content of *Ficus thonningii* leaves as 8.04 while in this study it is higher (10.87). The feeding of up to 15% *Ficus thonningii* leaf meal did not affect feed intake of rabbits significantly (P>0.05). The average daily weight gain of rabbits on all

the treatments were not significantly affected by the level of leaf meal in the diet (Table 2). Rabbits fed control diets and those with 5% and 10% *F. thonningii* leaf meal had a better feed conversion efficiency than rabbits fed on 15% *F. thonningii* leaf meal. This could be due to better efficiency of utilization of the available nutrients in diet containing low levels of *F. thonningii* leaf meal. Also

at the highest level of feeding the leafmeal, calculated ME of the diet was reduced.

Table 3 shows the carcass and organ weights. Dietary treatments had no significant ($P>0.05$) effect on live weight, slaughter weight, dressing percent, skin and feet weight, full and empty GIT weight. Also the weight of the head, kidney and other organs plus the thighs, loin, rack and shoulders were not significantly ($P>0.05$) affected by dietary treatments. However, the carcass weight was significantly ($P<0.05$) affected by dietary treatments as the carcass weight of rabbits on control diet was higher than of rabbits on the remaining dietary treatment.

Conclusively, this result indicates that *Ficus thonningii* leafmeal can be included at up to 15% level in rabbit diets without any debilitating effects on growth performance, organs and carcass characteristics.

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