THE EFFECT OF FEEDING MULTI-NUTRIENT MINI BLOCKS AND PELLETED DIETS ON THE GROWTH OF RABBITS

W.O. BIOBAKU AND E.B. OGUNTONA

College of Animal Science and Livestock Production, University of Agriculture, P.M.B. 2240, Abeokuta.

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ABSTRACT

The effect of substituting pelleted diets with multinutrient blocks on the growth of weanling rabbits was studied. The pelleted diets and the multinutrient blocks contained crude protein 23.31% and 24.25%, crude fibre 21.65 and 23.00%, ether extract 10.44% and 10.97% respectively. The body weight gain (10.58g/day), feed intake (110.20g/day) and feed efficiency ratio (0.58) of rabbits fed multinutrient blocks were non- significantly higher by 8.50%, 10.65% and 10.34% respectively, than those rabbits fed with pelleted basal diet.

Keywords: Pellets, multi-nutrient blocks

INTRODUCTION

In the later part of this century, the manufacture and utilization of multi-nutrient blocks as supplements for animal increased considerably. The manufacutre of multi nutrient blocks for rabbits was suggested by Cheeke and Raharho (1988). One big advantage, particularly for the small farmers, of the miniblocks over rabbit marsh or pelleted diet, is that the miniblocks can be distributed on the ground, without the need for specialized feeders and without wastage. (Filippi, Amici and Machin, 1992). Dinh Van Binh, Bui Van Chich and Preston (1991) had shown that mini blocks containing 50% molasses have been successfully used as a substitute for cereal based concentrates in diets based on elephant grass for rabbits in all phases of production, the performances and economic results were better than the mash or pelleted diets.

The objective of this study was to evaluate the effect of feeding multi-nutrient mini blocks and pelleted diets on the growth of rabbits.

MATERIALS AND METHODS

Thirty-two New Zealand mixed breed, six-week old rabbits weighing 560 - 640g were obtained from Oyo State Dairy farm in Ibadan and were divided into two groups of sixteen animals each, with an average weight of 600g for each group. The sixteen animals in each of the groups were further sub-divided into two sub-groups, such that duplicate groups of eight rabbits each were obtained from each sub-group with two rabbits tagged A and B per cage. The experiment was carried out at the University Farm Abeokuta. The ingredients for the preparation of the pelleted diet and the multi-nutrient mini-block were purchased locally from Adeyemi Commercial Venture, Abeokuta.

Two rations consisting of the basal rabbit diet (Pelleted) and multi-nutrient miniblock diet as shown in Table 1 were given to 4 groups of 8 animals at 8.30a.m. daily. The feeding lasted eight weeks. Water was provided *ad libitum*. Orts were weighed during the last fourteen days of each collection period in order to calculate the feed intake over the 14-day period. Records of weekly body weight, body weight gain, feed intake, feed efficiency and protein efficiency ratio were obtained for eight weeks.

Statistical Analysis

The feeding trial was based on the completely randomised block design and data collected were subjected to one-way analysis of variance by method of Snedecor and Cochran (1967).Significant values were separated using Duncan's (1955) multiple range test.

RESULTS AND DISCUSSION

The dry matter, crude protein and fibre contents of multi-nutrient miniblocks were

TABLE 1: INGREDIENT COMPOSITION OF EXPERIMENTAL DIETS

Components	Pelleted Basal Diet	Multi-nutrient Block
Yellow Maize	42.90	-
Soybean meal	13.95	25.00
Fish meal	1.65	-
maize Offal	37.60	-
Molasses	-	45.00
Oyster shell	2.00	-
Bone meal	1.00	-
Min-Vit premix	0.25	10.00
Cement	-	8.00
Paw-paw leaves	-	10.00
Methionine	0.40	-
Salt	0.25	2.00
Calculated Analyses		
Protein (%)	15.59	15.86
Energy (KJ/gm)	10.30	10.52
Fibre (%)	16.44	20.46
Calcium (%)	1.84	2.25
Methionine (%)	0.70	0.64
Lysine (%)	0.54	0.58

TABLE 2: CHEMICAL COMPOSITION OF EXPERIMENTAL DIETS (% DRY MATTER BASIS)

Chemical Composition (% Dry Matter)	Pelleted Basall Diet	Multi-Nutrient Block
Dry matter	90.14	91.46
Moisture	9.94	7.46
Crude protein	20.34	21.48
Crude fibre	21.65	23.00
Ether Extract	10.44	10.97
Ash	5.05	5.59
Nitrogen free extract	29.92	28.37
Minerals		
Potassium (%)	0.54	0.66
Sodium (%)	0.36	0.58
Phosphorous (%)	0.30	0.48
Magnesium (%)	0.40	0.42
Calcium (%)	0.70	0.90
Zinc (ppm)	234	260
Manganese (ppm)	162	180
Iron (ppm)	184	240

significantly higher than these found in pelleted basal diet. (Table 2). The effects of the trial diets on growth, feed efficiency, and protein efficiency ratio are shown in Table 3. The performance data obtained from the trial showed no significant difference ($P > 0.05$) in body weight gain, feed efficiency and protein efficiency ratio, between rabbits fed multi-nutrient blocks when compared with those rabbits fed the pelletted basal diet.

Worthy of note, however were the marginally higher growth rate and feed utilization recorded for rabbits fed the multi-nutrient blocks over the other diet. The high levels of leaves and cement were thought to have been responsible for the improved performance of the rabbits fed the multi-nutrient blocks. This observation tends to supports that of Ricca and Combellos (1993) who showed that the presence of cement and leaves in blocks has a positive effect on the growth of animals.

However, other authors have shown that the high level of molasses that contained sulphur and trace elements may be responsible for the better performance of animals fed multinutrient blocks.

TABLE 3: GROWTH RESPONSE OF RABBITS FED WITH DIFFERENT DIETS

Performance Parameters	Pelleted Basal Diet	Multi-nutrient Block
Number of Rabbits	16	16
Initial Body weight (g)	600.00±2.40	600.00±1.61
Final body weight (g)	1142.20±9.64	1192.46±6.80
Daily Weight Gain (g/day)	9.68±0.92[a]	10.58±0.42[a]
Daily feed intake (g/day)	98.46±2.14[a]	110.20±4.14[a]
Feed efficiency ratio	0.52[a]	0.58[a]
Protein efficiency ratio	0.52[a]	0.58[a]
Mortality	0	0

Values are the means of sixteen analyses ±S. E. M.
Means denoted by different superscipts horizontally were significantly different ($P < 0.05$)

The multinutrient block in this trial contained high level of molasses which tend to have positive effect on the growth of the rabbits. This observation agrees with Hendranto, Nolan and Leng (1991) who reported that blocks with high level of molasses had positive effects on the growth and reproductive parameters of dairy goats. In particular, blocks increased the birth weigh and liveweight gain of kids by 15% and decreased the time between pregnancies by 5.3%. (Hendranto *et al*, 1991).

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