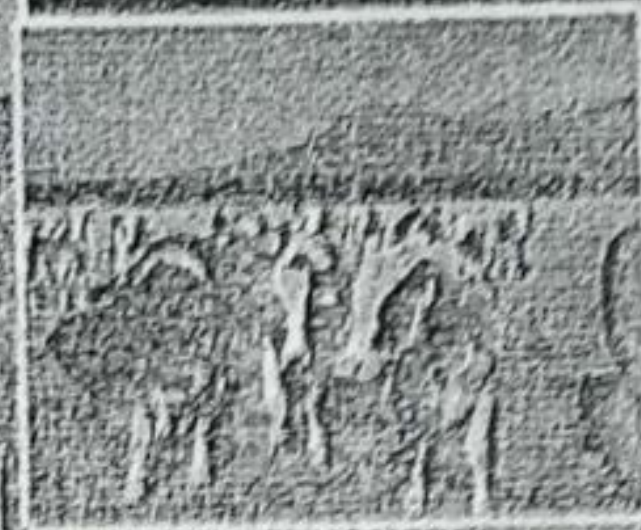
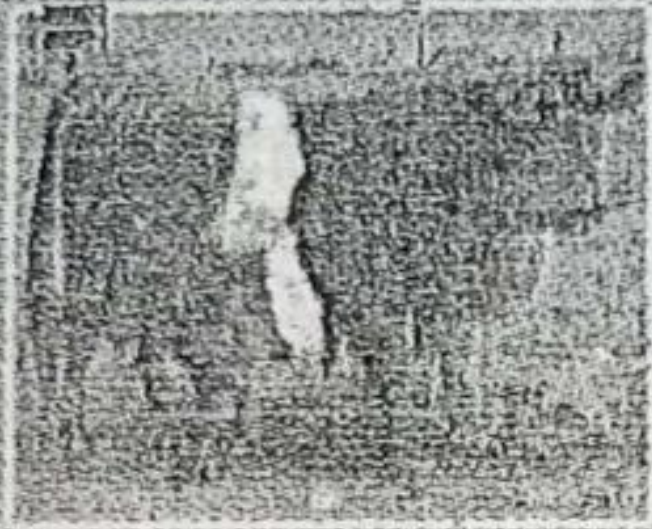


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**SUSTAINABLE ANIMAL PRODUCTION FOR
NATIONAL FOOD SECURITY AND
POVERTY ALLEVIATION**

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GROWTH PERFORMANCE OF GRASSCUTTER FED UNDER DIFFERENT FEEDING REGIMES

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Abstract

Twelve (12) Grasscutter of both sexes with an average initial weight of 0.870kg were randomly divided into three (03) treatments of four (04) animals each. T₁, T₂, T₃ were 100% Concentrate, 40% Elephant grass + 30% Sweet Cassava root + 30% Concentrate and 50% Elephant grass + 50% Sweet Cassava root respectively. They were fed 100g per head per day of the experimental diets and all the animals were given clean cooled water *ad libitum*. The experiment lasted for 70 days after a seven (07) day adjustment period. Completely, randomized experimental design was used. The final mean weight and total weight gain were both significant (P<0.05). The daily weight gain showed significant (P<0.05) difference. T₁ (7.86g) had the best, even though it was similar to T₂ (7.11g). Daily feed intake decreased linearly (P<0.05) from T₁ (66.64g) to T₃ (61.50g). Feed Conversion ratio also showed significant (P<0.05) differences. Based on this work, Concentrate feed can be fed solely to Grasscutter without any adverse effect. However, similar result could be achieved when grasscutter are fed with 40% Elephant grass + 30% Sweet Cassava root + 30% Concentrates.

Keywords: Concentrate, Elephant grass, Sweet Cassava root, Weight gain, Feed Conversion ratio

Introduction

Grasscutter is a wild animal which is socially and traditionally accepted in rural and urban settings in Africa. It serves as a good source of revenue, these days; it is reared by farmers, individuals, government and non-governmental organizations for commercial purpose.

Grasscutter farming in Nigeria has gained much popularity because of its low capital input. Ajayi and Tewe (1980) reported that acceptance of grasscutter (*Thryonomys Swinderious*) among ethnic groups of West African makes its rearing interesting. They reported further that the meat of grasscutter is acceptable to all social classes of both rural and urban areas. The acceptability cuts across either religion or cultural belief.

In Grasscutter production availability of feed is among the prime factors considered necessary for a successful result. Feed where account for over 70% of total cost of producing domesticated animals and birds (Atteh 2002). The quality and quantity of each feed ingredient in a diet determine the performance of the animals, that is whether a ration is balance or not which is a function of the active ingredient contained in the feedstuff.

Grasscutter is a herbivore and feed on sweet potato makes good use of roughages. Grasscutter also adapts to grasses like Elephant grass (*Pennisetium Purpureum*) and Sugar Cane (*Saccherium Officinarium*) and tubers.

Ex-situ rearing of grasscutter has lead to the feeding of formulated concentrate as feed supplement to meet their nutritional requirement.

This study therefore looks into the growth performance of grasscutter fed under different feeding regime and to come out with recommendation of the best feeding regime for domesticated grasscutter.

Materials and Methods

The study was conducted at the Grasscutter domestication Unit, College of Agriculture, Livestock Teaching and Research Farm, Osun State University, Ejigbo Campus. Twelve (12) Weaners Grasscutter of both sexes with an average initial weight 0.870kg were allotted into three treatments of four animals each. The experiment lasted for 70 days after an adjustment period of 7 days. The grasscutters were housed in individual cages, fed 100g per head per day of the experimental diets which formed treatments 1, 2 and 3 respectively. All the grasscutter were served water *ad libitum*. All the ingredients were purchased from Ejigbo, Osun State. The Sweet Cassava roots were cut into pieces and Elephant grass were cut. Wilted and chopped before they fed to the animals. Dry matter intakes were calculated from differences between absolute feed served and left over. Weekly weight gains were taken in the morning before feeding.

Samples of the experimental diets were analysed for their proximate composition according to standard procedure (A.O.A.C, 2000). Completely randomized design was used and data were analysed by one way analysis of variance while significant means were compared using DMRT (Duncan, 1955). All analysis were done using SAS (1999).

Results and Discussion

Experiment Diets

T ₁	=	100% Concentrate
T ₂	=	30% Concentrate + 30% Sweet Cassava root + 40% Elephant grass
T ₃	=	50% Sweet Cassava root + 50% Elephant grass.

Table 1: Proximate Composition of the Experiment Diets

Proximate Composition	Experimental Diets			
	T ₁	T ₂	T ₃	
Dry Matter	94.15		92.25	91.00
Crude Protein	18.48		17.55	15.14
Crude Fibre	4.12		7.24	7.69
Ether Extract	5.09		3.50	2.34
Ash	5.11		6.09	6.34
Nitrogen Free Extractive	67.20		65.62	68.49

Table 2: Performance Characteristics of Experimental Animals

Parameters	Experimental Treatment			
	T ₁	T ₂	T ₃	SEM
Number of Grasscutters	4	4	4	-
Feeding Period (days)	70	70	70	-
Initial Mean Weight (g)	870	872	870	-
Final Mean Weight (g)	1420 ^a	1370 ^b	1289 ^c	35.29
Average Total Weight Gain (g)	550 ^a	498 ^b	419 ^c	23.21
Average Daily Weight Gain (g)	7.86 ^a	7.11 ^a	5.99 ^b	0.79
Average Daily Feed Intake (g)	66.64 ^a	62.50 ^b	61.50 ^b	0.70
Feed Conversion Ratio	8.48 ^b	8.79 ^b	10.23 ^a	0.08

a, b, c. Means in the same with different Superscripts are significantly different (P<0.05).

The daily weight gain showed significant difference (P<0.05) with T₁ (7.86g) having the best, even though it was statistically the same as T₂ (7.11g). The final mean weight and total weight gain were both significantly (P<0.05) different.

Average daily feed intake decreased steadily from T₁ (66.64g) to T₃ (61.50g) and was significantly (P<0.05) affected by treatment.

T₁ had the highest daily feed intake (66.64g). This could be due to the fact that T₁, which is the control diet,

Table 2: Percentage Composition of Concentrate (%)

Ingredients	
Maize	44.00
Soybean Meal	19.00
Wheat Offal	31.30
Fish Meal	1.00
Bone Meal	2.50
Oyster Shell	1.50
Premix (grower)	0.25
Salt	0.25
Lysine	0.10
Methionine	0.10
Total	100.00

Calculated Analysis

Crude protein	18.04
Crude fibre	15.00
Metabolisable Energy	11.05

was the most palatable and least fibrous therefore the grasscutters consumed more of it and best utilized it. The feed conversion ratio showed significant (P<0.05) difference with T₁ (8.48g) having the best. This could be meant that they best utilized the experimental diet. However, T₂ (8.79g) was statistically the same as T₁ (8.48g).

The superior performance of T₁ could be because they had the highest dry matter and crude protein intake.

Table 3: Proximate Composition of Sweet Cassava root (unpeeled) (%)

Dry Matter	-	31.94
Crude protein	-	2.38
Ether Extract	-	0.65
Crude Fibre	-	1.95
Ash	-	2.89
Nitrogen Free Extractive (NFE)	-	92.13

Oyenuga (1968)

This result agreed with the report of Adeloje (1994) that high dry matter and protein intake resulted in positive weight.

Conclusion And Recommendation

This result of this work showed that Concentrate Feed can be fed solely to Grasscutter without any adverse effect. However, similar result could be achieved when grasscutter are fed with 40% Elephant grass and 30% each of the Concentrate and Sweet Cassava root.

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