GROWTH PERFORMANCE AND CARCASS CHARACTERISTIC OF WEANER RABBITS FED WITH DIETS CONTAINING AFRICAN PEAR (*Dacryodes edulis*) SEED MEAL

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Abstract
The effect of replacing maize with African pear seed meal (APSM) on the growth and carcass characteristics of weaned rabbits was investigated for fifty six days in completely randomized design experiment. Four dietary treatments that comprise APSM included at 0%, 20%, 40% and 60% in the diet as partial/total replacement for maize, were fed to twenty four weaned rabbits of average initial weight 847.25±4.11g. Data collected included average feed intake, average weight gain, carcass characteristics as well as weight of some specific organs. Results revealed that increasing levels of APSM significantly (P<0.05) increased the liver weight expressed as percentage of live weight, while the growth and other carcass characteristic variables investigated were not significantly (P>0.05) influenced by the dietary treatments. Therefore APSM can replace maize in the diets of growing rabbits.

Key words: African pear seed, Growth, Carcass characteristics, Rabbits.

Introduction

Rabbit production is gaining popularity in Nigeria because of it low cost, ability to supply the protein needs of an average family and is suitable and cheaper alternative to poultry (Bamikole *et al.*, 2005). Rabbit is highly fecund, posses' short generation interval, and can utilize diverse forages (Taiwo *et al.*, 2004). The initial capital and cost of production is relatively low when compared to other livestock enterprises. Oseni, (2012) observed that rabbits are particularly favoured for poverty reduction programmes on account of their low investment and early benefits, and subsistence on renewable resources for feeding, housing and general management. These potentials of rabbits have made it a good and cheaper source of animal protein for human beings (Amaefule *et al.*, 2004). The high costs of conventional protein and energy ingredient have grossly undermined the potentials of rabbit production (Ogunbameru *et al.*, 2004). Feed alone account for about 70% of the total cost of production (Akinmutimi and Ezea, 2006). Hence research efforts should be geared towards reducing the cost of feeding by exploiting underutilized feed resources which are not competitively use by human (Onigemo and Anjola, 2013). African Native pear, *Dacryodes edulis* is widely found in many sub-Saharan countries including Nigeria, Liberia, Cameroon's and Zaire (Boungou *et al.*, 1991). The seeds of Africa pear are often discarded after the flesh mesocarp are consumed by human, are usually available in large quantities during the fruiting season (May to October) in Nigeria and can be picked up and collected in large quantities at little or no cost (Bratte *et al.*, 2010). This seeds have been reported to contain substantial amount of nutrients majorly carbohydrates and lipids (Obasi and Okolie, 1993). However, there is dearth of information on the use of African pear seeds in practical livestock feeding (Bratte *et al.*, 2010). This project was therefore designed and executed to evaluate the effect of replacing maize with Africa pear seed meal on the carcass characteristics of growing rabbits so as to establish its' potential as an alternative livestock feed resources.

Materials and Methods

The *Dacryodes edulis* seeds were collected from Ayedere fruit market, Ketu, Lagos, The seeds were de-husked and sun dried to reduce the moisture content. The sun dried seeds were mixed with sharp sand roasted on the gari fryer with continuous stirring for 15 minutes and thereafter milled using hammer mill at the feed mill of the department of Animal production technology to produce roasted African pear seed meal (APSM). African pear seed meals were included at 0%, 20%, 40% and 60% in the diet as partial/total replacement for maize, mixed with other ingredients as shown in Table 1, and thereafter pelleted with screwed pelleted fitted with dice of 2mm diameter and fed to twenty-four 8 weeks old weaned rabbits of average weight of 847.25 ± 4.11g in a completely randomized design experiment. Each level of inclusion constitutes a treatment and each treatment was replicate three times. Before the arrival of the Rabbits, the cages and the environment of the mini-livestock unit

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were well swept, washed disinfected and fumigated to make it diseases free. The legs of the cage were placed inside a container filled with some quantity used engine oil to prevent predators suchas Ants, Termites. The rabbits were placed in the hutch and were fed with commercial growers mash and *Tridax procumbense* for two week in order to acclimatize to the environment before the commencement of the project. Thereafter, the rabbit were fed the experimental diets *ad libitum* with a liberal provision of water. They are fed at 7.00 and 18.00 hour of the day. All obligatory management practice was strictly observed throughout the fifty six days of study. At the end of the study one Rabbit per replicate was slaughtered for carcass evaluation. Data on feed intake were collected daily, weight gain were determined on a weekly basis. Carcass characteristics and weight of specific organs were collected at the 56th day of the study. All data collected were subjected analysis of variance test and all means were separated with Duncan multiple range test using Assitat 7.6 beta software developed by Silva and Alzevedo, (2009).

Results and Discussions

The varying levels of APSM did not significantly ($P>0.05$) affected the feed intake, weight gain and final weight of the rabbits. Feed intake do not follow any particular trend, the feeds were well consumed and acceptable to the rabbits probably because the feed are fed as pellets. Rabbits have been reported to prefer pellets to all mash diets (Çaliskaner *et al.*, 1996). The weight gain and final weight tend to decrease as the level of inclusion of APSM was increased; hence, rabbits on diets containing APSM had relatively low weight gain and final weight compared to those on the control diets. The lower weight gain observed among rabbits fed APSM might be attributed to the relatively low protein content of the diets. Since Protein intake influence the growth rate of farmed animals (Miller, 2002). Statistical analysis revealed that there was no significant ($P>0.05$) difference in all the variables investigated in the carcass characteristics of the rabbits (Table: 3) except the weight of liver expressed as a percentage of the live weight. Generally the weights of liver of rabbits on APSM diets are significantly higher than those on the maize control diets. The high liver weight observed in rabbits fed the APSM diets might be due to the relatively high fat content of African pear seeds when compared to maize. Animal fed with High-fat diet have been reported to possess more total liver weight, compared with those on the standard-fat diet (Milagro *et al.*, 2006). Thus prolonged feeding of APSM may result in liver stress arising from excessive fat consumption.

Conclusion

The results of this study indicate that APSM did not influence the growth and carcass yield of rabbits. Hence, APSM can be used to replace maize in the diet of growing rabbits.

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Table 1: Composition of Experimental Diets

Ingredients	T_1	T_2	T_3	T_4
Maize	60	40	20	0
APM	0	20	40	60
Wheat offal	14	14	14	14
G.N.C.	15	15	15	15
Blood meal	5	5	5	5
Palm oil	2	2	2	2
Bone meal	2	2	2	2
Oyster shell	1.1	1.1	1.1	1.1
Salt	0.25	0.25	0.25	0.25
Premix	0.25	0.25	0.25	0.25
Lysine	0.1	0.1	0.1	0.1
Methionine	0.3	0.3	0.3	0.3
	100	100	100	100
Calculated Analysis				
Protein %	18.53	18.126	17.722	17.318
M.E. kcal/Kg	3019.2	3006.408	2993.616	2980.824

Table 2: Growth performance of Rabbits Fed APSM

Variables	T1	T2	T3	T4	SEM
Average Feed Intake	46.59	43.93	55.01	53.33	5.30
Average Initial Weight	842	851	846	850	4.11
Average Weight Gain	13.84	12.86	12.23	9.63	1.80
Average Final Weight	1656.04	1601.16	1565.88	1467.09	79.49

Table 3: Carcass Characteristics expressed as percentage of live weight of Rabbits Fed APSM

Variables	T1	T2	T3	T4	SEM
Dressing Percentage	73.31	89.45	88.15	88.23	3.84
Kidney	0.8789	1.111	0.8224	0.8175	0.11
Lungs	0.507	0.4896	0.4577	0.5177	0.09
Heart	0.239	0.2941	0.3172	0.1965	0.03
Liver	2.1168^{b}	3.3554^{a}	2.85^{ab}	3.6333^{a}	0.33
Fore-limb	10.69	10.87	10.75	9.74	1.26
Hind-limb	17.35	16.77	19.13	16.25	1.63
Fore quarter	9.3312	14.0613	12.9905	13.131	2.04
hind quarter	11.4995	14.1268	14.3865	15.7088	1.88