

DIETARY EFFECTS OF VARYING LEVELS OF SAWDUST AS REPLACEMENT FOR WHEAT OFFAL ON GROWTH PERFORMANCE OF WEANER RABBITS

¹Oseni, T.A., ²Bamgbose, A.M ²Sobayo, R.A., ²Egbeyale, L.T., ²Oso, A.O., ¹Amusa, H.O.,
²Oladigbolu, F.D, and ²Orbugh, A.T.

¹Department of Animal Health and Production Technology, Oyo State college Of Agriculture and Technology, Igboora, Oyo state, Nigeria.

²Federal University of Agriculture, Abeokuta, Ogun State, Nigeria.

Corresponding Author: taoheedakande83@yahoo.com

Phone number: +2348030946847

Abstract

This study evaluated the dietary effects of varying levels of sawdust as replacement for wheat offal on growth performance of weaner rabbits. A total of twenty-four (24) cross-bred weaner rabbits of weight range of 679-723g were allocated to four dietary treatment groups with six animals per treatment on weight equalization basis. The four dietary treatment groups were four inclusion levels of sawdust (0, 10, 20 and 30%). Data were collected on weekly basis for 10 weeks. The study was conducted for a period of 70 days. feed intake, average feed intake, body weight gain, average body weight gain, feed conversion ratio were determined. Data were subjected to one way Analysis of Variance and the mean values were separated at 5% probability. Results showed that There was no significant ($P>0.05$) difference in all the parameters measured across the dietary treatments. However, the final weight decreased numerically across the treatment with increase level of sawdust inclusion. This study concluded that sawdust can replace wheat offal up to 30% without deleterious effect on growth performance of weaner rabbits.

Keywords: Weaner rabbits, Growth performance, Sawdust,

Introduction

Animal protein is one of the most important components of human diet and its consumption varies from country to country (Okai *et al.*, 2005). The incidence of underweight and protein deficit is still prevalent among the different income groups in both urban and rural areas. Malnutrition is still widespread in Nigeria due to the decline in protein intake occasioned by the scarcity and unaffordable prices of animal protein food sources such as milk, egg, meat and fish (Obasi, 2003). The increasing demand for animal protein coupled with more stringent economic conditions have encouraged greater interest in fast growing animals with short generation interval. One of the cheapest producers of meat that can easily fit into the wider segment of the population but which has been neglected in Nigeria is the rabbit. Rabbit has the ability to convert feedstuffs such as forages, most agricultural by-products, kitchen waste etc. that human being cannot consume directly into highly nutritious meat. Rabbits are highly prolific, cheap to feed because they can utilize roughage feeds, they have rapid growth rate, high dressing percentage, short gestation period and low purchasing price. In recent years, there have been renewed interests in the use of non-conventional ingredients in feeds formulation for livestock. Ibitoye *et al.*, (2010) reported that, there is a wide range of feedstuff on which rabbits can live on. Therefore, alternative feed source such as saw dust need to be investigated. Saw dust is basically a waste of small particles available in saw-milling industries, pulp plant and paper industries as well as wood processing industries particularly, in the southern part of Nigeria in a quite large volume in form of heaps and mostly burnt off resulting in the environmental pollution [Adegoke and Mohammed, 2002].

Materials and methods

The experiment was conducted at Teaching and Research Farm of Oyo State College of Agriculture and Technology, Igboora Oyo State Nigeria. The site located within latitude 7^o.15' North and longitude 3^o30' East of the equator with an average annual rainfall of 1278mm and an average temperature of 27^oC (Sanusi, 2011) A total of 24 weaner rabbits were allotted on weight equalization to four dietary groups of six (6) animals each in a completely randomized design (CRD), each group was divided into three replicates of two animals each. The diets were formulated such that sawdust was included at 0%, 10%, 20%, and 30% to replace wheat offal.

Table 1: Gross composition (%) of experimental diets

Ingredients	T1 (0%)	T2 (10%)	T3 (20%)	T4 (30%)
Maize	38.00	38.00	38.00	38.00
Soy bean meal	17.00	17.00	17.00	17.00
Wheat offal	40.00	30.00	20.00	10.00
Saw dust	-	10.00	20.00	30.00
Fish Meal (72%)	0.50	0.50	0.50	0.50
Bone meal	2.50	2.50	2.50	2.50
Limestone	1.48	1.48	1.48	1.48
Premix Starter	0.25	0.25	0.25	0.25
Salt	0.25	0.25	0.25	0.25
Toxin binder	0.02	0.02	0.02	0.02
Total	100	100	100	100
Determined Analysis				
ME(MJ/kg)	10.56	10.68	10.80	10.92
CP (%)	18.61	18.41	18.31	18.10
CF (%)	10.00	10.35	10.87	11.50

Data collection

The body weight, feed consumption and mortality were monitored and recoded for each of replicate at weekly intervals to determine feed intake, average feed intake, body weight gain, average body weight gain, feed conversion ratio and mortality.

Statistical Analysis

Data obtained were subjected to one-way Analysis of Variance, mean values of variables showing significant ($P < 0.05$) difference were separated using Duncan's multiple range test in SAS (2010)

Results and discussion

The values obtained for the growth performance showed no significant ($P > 0.05$) difference in all the parameters measured across the dietary treatments. However, the final weight decreased numerically across the treatment with increase level of sawdust inclusion. Growth performances are indices describing the functionality and adequacy of feed given to an animal. In this study, sawdust had no negative influence on the experimental animal. This suggests that saw dust at high level of inclusion is comparable to wheat offal in diet of rabbit. The results of the final live weight in this research is in agreement with the findings of Kumuyi, (2016) who reported that dietary fibre aid a healthier digestive process and support the muscles and nerves. According to Gidenne and Beller (2000), rabbit can handle high amount of fibre in a given diet. It could also be due to the fact that fibre is needed to maintain microbial environment in the caecum of rabbit for smooth or adequate digestion process in rabbit

Table 2: Growth performance of weaner rabbits fed saw dust as replacement for wheat offal

Parameters	0	10	20	30	SEM	Pvalue
IW (g)	682.00	723.167	679.67	699.33	18.03	0.84
FW(g)	1636.67	1578.83	1540.17	1444.83	47.03	0.56
Weight Gain(g)	954.67	855.67	860.50	745.50	46.35	0.49
Feed Intake(g)	7830.17	7147.33	8859.67	6476.67	15.82	0.74
FCR	8.32	8.81	10.92	13.34	6.01	0.03
Mortality	1.0	1.0	1.0	1.0	1.0	0.00

IW = initial weight; FWG = final weight gain; FCR = feed conversion ratio

Conclusion and recommendation

Sawdust can replace wheat offal up to 30% without significant effect on the performance characteristics of weaner rabbits. Sawdust can be recommended at higher level of inclusion up to 30% for growth performance of rabbits without any adverse effect.

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