

DIETARY EFFECT OF MIXED SAW DUST AS A SUBSTITUTE FOR WHEAT OFFAL ON INTERNAL ORGANS OF GROWER RABBIT FED EXPERIMENTAL DIET

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Abstract

A total of 18 grower rabbits were allotted to 3 dietary groups of six (6) animals in a completely randomized design (CRD) to determine the dietary effect of mixed saw dust as a substitute for wheat offal on organ weight changes of grower rabbits. Each group was replicated thrice consisting of two animals per replicate. Sawdust was substituted with wheat offal at 0% 5% 10% respectively. The result showed that they were significant ($P<0.05$) differences in the value of live weight, lungs and heart while there were no significant ($P>0.05$) differences in liver, kidney and testicle across the dietary treatments. However, the highest value of liver (1887) was recorded in diet 2 while the lowest live weight (1288g) was recorded in diet 3. The value obtained for liver, kidney and testicles followed a similar pattern across the dietary treatments. Rabbits on diet 1 recorded the highest value (1.15g) of lungs while the lowest value (0.70g) of lungs was recorded in diet 3 (10% substitution level). The highest (0.37g) of heart was recorded in diet 2 while the lowest value (0.23g) of heart was recorded in diet 3. The highest value of kidney (0.70g) and liver (3.77g) were recorded in diet 3 while the lowest value of kidney (0.60g) and liver (2.54g) were recorded in diet 1(control) and diet 2 respectively. It could be concluded that mixed sawdust is good alternative feed resources that could be effectively used in diet grower rabbits and at 10% conclusion level without adverse effect on the internal organs of the rabbit

Introduction

The increasing demand for animal protein coupled with more stringent economic conditions have encouraged greater interest in fast growing animals with short generation interval. Fetuga, (1997) reported on the disappointing rate and level of performance in the livestock industry in Nigeria. Thus he attributed, among other factors, to high cost of feeds arising largely from fluctuations in feed supplies, rising prices of ingredients, poor quality feeds, inefficiency in production and distribution in the feed industry. 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. The rabbit has the ability to convert feedstuff 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. However, efficient rabbit production is largely dependent upon adequate and correct nutrition (Standford, 1979). In recent years, there have been renewed interests in the use of non-conventional ingredients in feeds formulation for livestock. Standford, (1979) reported that, there is a wide range of feedstuff on which rabbits can live on. Therefore, alternative feed sources need to be investigated such as, sawdust. However, its potentials as an animal feed supplement have not been properly documented in Nigeria. Studies in the management of sawdust as waste are not new in Nigeria, but most of these studies have had their focus on utilizing the waste as a soil amendment material, with promising results. Ibrahim, (2001) had attempted a study on exploring the potentials of sawdust as a livestock feed, and the results have been encouraging.

Materials and methods

Experimental site: The experiment was carried out at the Teaching and Research Farm, Oyo State College of Agriculture & Technology Igboora, Nigeria. Which is located within 7° 15° North and 3° east of the equator with annual temperature of 27°C (Sanusi, 2011).

Experimental Ingredient: The saw dust used in the experiment was obtained from the local saw mill at Igboora, Oyo State.

Experimental Design

A total of 18 grower rabbits were allotted to 3 dietary group of six (6) animals in a completely randomized design (CRD), each group was replicated thrice of two animals per replicate. Sawdust were substituted with wheat offal at 0% 5% 10% respectively.

Table 1: GROSS COMPOSITION OF EXPERIMENTAL DIET

INGREDIENTS	T1 (0%)	T2 (5%)	T3 (10%)
Maize	20.00	20.00	20.00
SBM	16.00	16.00	16.00
C/Bran	39.00	39.00	39.00
W/O	20.00	19.00	18.00
MSD	0.00	1.00	2.00
Bone meal	2.00	2.00	2.00
Limestone	2.00	2.00	2.00
Lysine	0.25	0.25	0.25
Methionine	0.25	0.25	0.25
Salt	0.25	0.25	0.25
Grower Premix	0.25	0.25	0.25
Total	100	100	100

Key: SBM= Soya bean meal, C/BRAN= corn bran, W/O = wheat offal, MSD= mixed sawdust. **Internal organs** evaluation: At the end of the 8th weeks of the experiment, two rabbits per treatment were selected in each treatment and used for internal organs evaluation. The animals were slaughtered via the neck region; it was defurred, detached, dressed and cut into parts each of the weight part were recorded. Internal organs measured were liver, kidney, heart, lung, spleen and stomach.

Statistical Analysis: Data obtained in the study were subjected to statistical Analysis of Variance, mean value of variables showing significant ($P < 0.05$) difference were separated using Duncan's multiple range test (Duncan; 1955)

Results and discussion

Results

The result showed that they were significant ($P < 0.05$) difference in the value of live weight, lungs and heart while there was no significant difference in liver, kidney and testicle across the dietary treatment. However, the highest value of liver (1887) was recorded in diet 2 while the lowest live weight (1288g) was recorded in diet 3. The value obtained for liver, kidney and testicles follow a similar pattern across the dietary treatments. Rabbits on diet 1 recorded the highest value (1.15g) of lungs while the lowest value (0.70g) of lungs was recorded in diet 3 (10% substitution level). The highest (0.37g) of heart was recorded in diet 2 while the lowest value (0.23g) of heart was recorded in diet 3. The highest value of kidney (0.70g) and liver (3.77g) were recorded in diet 3 while the lowest value of kidney (0.60g) and liver (2.54g) were recorded in diet 1 (control) and diet 2 respectively.

Discussion

There were significant difference ($P<0.05$) in the value recorded for internal organ of grower rabbit across the dietary treatments. The result negate the finding of Ogungbero *et al.*, (2016) which reported that there were significant ($P<0.05$) difference in all internal organs of broiler fed experimental diet except liver which showed that the rabbit fed (10% mixed sawdust) recorded the highest value (3.77g) of liver. This result support Akinwusi *et al.*, (2017) who reported an increased organ weight in rabbit fed 10% cashew nut meal based diet. The grower rabbit fed diet 1 recorded the lowest kidney value (0.60g) while the highest value (0.70g) was obtained in grower rabbit fed diet 3. This can be attributed to the increased in the activity of kidney enzymes to detoxify the available anti-nutritional factor present in the text ingredient.

Table 2: Internal organ of rabbit fed mixed saw dust as a substitute for wheat offal

Parameters	T ₁ (0%)	T ₂ (5%)	T ₃ (10%)	SEM
Live weight	165.53 ^{ab}	1653 ^{ab}	1288 ^{bc}	144.19
Kidney	0.60	0.68	0.70	2.53
Liver	2.96	2.54	3.77	2.70
Lungs	1.15 ^a	0.95 ^{ab}	0.70 ^a	1.05
Testicles	0.12	0.10	0.15	1.23
Heart	0.24 ^c	0.37 ^a	0.23 ^{bc}	3.59

Conclusion and recommendation

Conclusion

Based on the result of this research, it could be concluded that mixed sawdust is good alternative feed resources that could be effectively used in the diet of grower rabbits and at 10% conclusion level without adverse effect on the internal organs of the rabbit.

Recommendation

Based on the result of this research, it could be recommended that: mixed sawdust be included in the rabbit ration up to 10% replacement levels. Since sawdust could effectively replace wheat offal in diets for grower rabbits. Which is an unconventional feed resource to enhance high profitability of the business.

References

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