

## EVALUATION OF INTERNAL ORGANS OF WEANER RABBITS FED VARYING LEVELS OF SAWDUST AS REPLACEMENT FOR WHEAT OFFAL

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### Abstract

This study evaluated the dietary effects of varying levels of sawdust as replacement for wheat offal on internal organs 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. 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 This study concluded that sawdust can replace wheat offal up to 30% without deleterious effect on growth performance of weaner rabbits. It could be concluded that saw dust could replace wheat offal up to 30% replacement level without any adverse effect.

**Keywords:** *Weaner rabbits, Internal organs, Sawdust*

### Introduction

Reports of low animal protein intake in most developing countries of the world are well documented (FAO, 1989; Fadipe, 1996; Obioha, 1997). In Nigeria, this situation has become somewhat persistent because the animal production techniques, as practiced (subsistence, extensive and few intensive enterprise), often than not, are localized and the end products are unable to meet the animal protein demands of the teeming populace. Livestock production, hence, has not kept pace with the human population increase in Nigeria. 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.

Among the livestock of interest, rabbit, a monogastric herbivore could be exploited to meet the observed animal protein deficit in the diet of Nigerians. Documented evidence portrays some of the advantages of raising rabbits to include high protein content, low meat cholesterol, great genetic diversity, fast growth rate and low investment cost (Aduku and Olukosi, 1990; Ahamefule *et al.*, 2007). The rabbit has the ability to convert feedstuffs such as forages, most agricultural by-products, kitchen waste etc. Rabbits are highly prolific, cheap to feed because they can utilize roughage feeds. However, conventional feedstuffs such as wheat offal which is the major fibre source in monogastric feed in Nigeria is now expensive and requires alternate sources. Thus, there is need to urgently incorporate non-conventional feed stuff such as saw dust in rabbit diet for optimum performance and reduction in cost of production to make rabbit consumption viable and solve the problem of scarce and expensive conventional feedstuff such as wheat offal.

### 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°15' North and longitude 3°30' East of the equator with an average annual rainfall of 1278mm and an average temperature of 27°C (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   |
| <b>Determined Analysis</b> |       |       |       |       |
| 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 |

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#### Internal organs evaluation

At the 70<sup>th</sup> day of feeding trial, three rabbits per treatment were randomly selected for internal organs evaluation. The animals were slaughtered via the neck region; it was defured, detached, dressed and cut into parts, each of the weight part were recorded. Internal organs measured were liver, heart, kidney, lungs and GIT (gastro intestinal tract).

#### Statistical Analyses

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

There was no significant ( $P > 0.05$ ) difference in all the parameters measured across the dietary treatments. The non-significant effect of the diets on internal organs is an indication of better utilization of the fibre ingredients by the animals. The weight of the kidney, liver, lung, heart did not follow any regular pattern, hence did not revealed any particular influence of the fibrous ingredients on organ of the animals. The findings agrees with the report of the Adewumi *et al.*, (2000) who reported that the relative weight of the liver, kidney, heart and spleen of the rabbits were not affected by the sources of fibre.

**Table 2: Internal organs of weaner rabbits fed saw dust as replacement for wheat offal**

| Parameters      | Replacement level of saw dust (%) |         |         |         | SEM   | PVALUE |
|-----------------|-----------------------------------|---------|---------|---------|-------|--------|
|                 | 0                                 | 10      | 20      | 30      |       |        |
| Live weight (g) | 1750.00                           | 1728.00 | 1797.00 | 1752.00 | 14.30 | 0.43   |
| Liver (%)       | 2.86                              | 2.43    | 2.17    | 2.34    | 3.12  | 0.68   |
| Heart (%)       | 0.29                              | 0.12    | 0.28    | 0.29    | 0.54  | 0.09   |
| Kidney (%)      | 0.80                              | 0.64    | 0.45    | 0.68    | 0.13  | 0.35   |
| Lung (%)        | 0.40                              | 0.52    | 0.39    | 0.46    | 0.03  | 0.74   |
| GIT (%)         | 14.06                             | 13.43   | 11.96   | 12.44   | 0.41  | 0.98   |

#### Conclusion and recommendations

Based on this research, it could be concluded that sawdust is a good alternative feed resource that could be effectively used in the diet of weaner rabbit up to 30% replacement level without adverse effect on the internal organs of weaner rabbits. Sawdust can be recommended at higher level of inclusion up to 30% for the internal organs of weaner rabbits without any adverse effect.

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