EFFECT OF FEEDING CASSAVA PEELS AND PLANTAIN PEELS ON PERFORMANCE AND SERUM BIOCHEMISTRY WEANER PIGS

O. A. ADEBIYI [1], I. B. BAKARE[1]. AND O.A OSINOWO[2]

[1]*University of Ibadan, Department of Animal Science, Ibadan, Oyo State, Nigeria*

[2]*Department of Agricultural Education, Federal College of Education, Osiele, Abeokuta, Ogun State, Nigeria.*

Correspondence: remyportable@yahoo.com

ABSTRACT

The experiment was conducted to determine the effect of feeding agro-industrial by-product (cassava peels and plantain peels) on performance, serum biochemistry and cost of production of weaner pigs. A total of forty-eight pigs were used for the study. The animals were randomly allotted to three treatments and three replicates with four animals per replicate. The treatments include T1 – 100% concentrates (control), T2 (cassava peels supplemented diet), T3 (plantain peels supplemented diet). The diets were fed in ratio of 40:60 (concentrates: supplement). The experiment lasted for 6 weeks. Parameters measured were performance (feed intake, weight gain, feed conversion ratio), serum metabolites (HDL, AST, ALT, Glucose, Total protein, Triglycerides). All data were analysed using ANOVA procedure of the SAS 2010. The result obtained showed that there was significant difference ($P< 0.05$) in the final weight and FCR of the pigs placed on the different treatment. The final weight for pigs on treatment 1 was significantly ($P< 0.05$) higher (9.17) compared to pigs on treatment 2 (cassava peels) and treatment 3 (plantain peels). The FCR was also shown to be better in pigs on treatment 1 with mean value of 4.60 compared to the other treatments. There was also a significant difference ($P< 0.05$) in the Triglyceride, HDL, AST and ALT levels of the serum biochemical indices of the pigs across the treatments. The triglyceride level of treatment 1 (41.29) was not different ($P>0.05$) from treatment 3 (51.61) but significantly different ($P< 0.05$) from 2 (81.55). The AST values for treatment 1 (26.00) was significantly different ($P< 0.05$) from treatment 2 (29.74) and treatment 3 (57.77). It can be concluded that supplementation of the diet using cassava peels and plantain peels does not have any adverse effect on the performance and health status of the weaner pigs. The use of cassava peels and plantain peels conferred better economic benefits in terms of cost per gain which reduces production cost.

Keywords: Cassava peels, plantain peels, weaned pigs.

INTRODUCTION

Swine production has a major impact in the supply of animal protein required for growth and development of the populace.

Maize constitutes the largest proportion of the feed ingredients that supply the energy component of feed for monogastric animals in Nigeria and is in short supply. It is therefore very expensive and uneconomical to feed monogastrics (particularly pigs) with maize. Furthermore, as opined by Irekhore *et al.* (2015), the global quest to use maize, other cereal grains and plant products as bio-fuel coupled with other competitive demands has caused frequent fluctuations in their prices. Therefore, this cost can be reduced by feeding them with agricultural wastes. Pigs are known to be good converters of wastes to high quality meat better than those of the ruminant animals. Pigs have the capacity to convert agro-industrial waste into wholesome animal protein useful to human being (Adesehinwa, 2008).

Cassava peels constitutes about 10-13% of the tuber weight and is of no significance use to man, in fact it constitutes a major problem when it comes to wastes disposal (Oyebimpe *et al.*, 2006). These wastes could be of great potential in livestock feeding. Tewe and Iyayi (1995) reported that, among the roots produced in Nigeria, cassava from which cassava peel is obtained constitute 20% of total tubers produced annually. Plantains are primarily grown for food; 30-40% of the crop is considered unfit for human consumption and is potentially available for animal feeding. Plant peels and the vegetative

Table 2. Performance characteristics of weaner pigs fed cassava peels and plantain peels supplemented diets

Parameters	Concentrates(T1)	Cassava peels (T2)	Plantain peels (T3	SEM
Initial weight (kg	5.39	4.47	4.75	0.53
Final weight (kg)	9.17[a]	6.87[b]	6.99[b]	0.33
Weight gain (kg)	3.78	2.40	2.24	0.27
Feed intake (kg/wk	15.83	14.99	25.40	0.27
FCR	4.60[b]	6.29[a]	6.95[a]	0.39
Cost/ kg of conc	100.00	40.00	40.00	-
Cost / kg of AIBPs	0.00	2.00	19.00	-
Cost/ kg of conc + AIBPs	100.00	42.00	59.00	-

Cost in Naira (N) *AIBP- Agro-industrial by-product (cassava peels and plantain peel)

Table 3. Serum biochemical indices of weaner pigs fed cassava peels and plantain peels supplemented diets

Parameters	Concentrates(T1)	Cassava peels (T2)	Plantain peels (T3	SEM
Glucose (mg/dl)	66.60	60.80	61.40	1.20
Cholesterol (mg/dl)	62.14	63.75	66.43	2.31
Total protein (g/dl)	6.72	7.23	6.95	0.21
Triglyceride (mg/dl)	41.29[b]	81.55[a]	51.61[b]	4.26
HDL (mg/dl)	86.77[b]	114.10[a]	79.10[b]	1.64
AST (mg/dl)	26.00[b]	29.74[a]	57.77[a]	0.85
ALT (mg/dl)	47.64[b]	57.39[a]	59.81[a]	1.10