

# African Research Review

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*An International Multi-Disciplinary Journal, Ethiopia*

*Vol. 5 (2), Serial No. 19, April, 2011*

ISSN 1994-9057 (Print)

ISSN 2070-0083 (Online)

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## **On-Farm Evaluation of the Use of Cassava Root Meal as a Partial Substitute for Maize in Broiler Diets in Anambra State** (Pp. 274-278)

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### **Abstract**

*The paper determined the on-farm evaluation of the use of cassava root meal as a partial substitute for maize in broiler diets. The result shows that at the 70<sup>th</sup> day of the experiment, the different diets were adequate in promoting the healthy living and growth of the birds. The results also reveals that the final weight of the birds ranged from 2.23% to 2.78% and average weight gains, ranged from 1.19kg to 1.75kg. The result further indicates that the use of cassava as a substitute for maize in broiler diets has no significant influence on the live-weight of the birds. The result shows that treatment 3 is the cheapest in terms of cost of production (₦2320.60), has the highest feed conversion efficiency and the lowest for one kg of broiler meat. The paper suggested for such trial to be carried out with higher percentage of cassava inclusion from day old to market weight. The use of garri in place of cassava flour to reduce its dustiness and improve storability is also suggested.*

### **Introduction**

Maize is known to supply the bulk of the energy in poultry diet. In Anambra State the increase in demand for maize for human food and other industrial uses e.g. brewery and pharmaceutical coupled with its low productivity has brought about high costs. Consequently, a great number of poultry farmers

are fast folding up on account of high input prices largely due to feed costs. Hence for poultry producers to remain in business a relatively cheaper source of energy which is locally sourced is needed to meet the requirement of poultry farmers.

Among many products, which could be used to develop feed for poultry, cassava is of special importance. It is an energy source which could be produced at all seasons in Anambra State.

Cassava roots can be used to make meal with an energy value of more than 3000 kcal of metabolizable energy per kg – (Chou et al, 2008, Stevenson and Jackson 1983). The major limitation for its use is its content of linamarin which hydrolyses to HCN during digestion. However, it has been shown that cassava meal can be used up to 50% of the feed without adverse effect on the performance of livestock.

The objectives of this experiment were to raise broilers with cassava as partial substitute for maize in broiler finisher diet, to determine the economics of the substitution, and to create awareness to farmers on the use of cassava as component of poultry diet.

### **Materials and Methods**

Eighty-one (81) day-old broilers (S and D breed) were raised for a period of 35 days on commercial broiler starter ration. All necessary inoculations were administered at the appropriate times. Three broiler finisher diets were compounded with cassava flour at 0%, 10% and 20% weight for weight substitution for maize respectively, See Table 2 the 0% cassava diet was the commercial feed the farmer usually uses in his farm.

At day 36, the broilers were picked randomly and assigned to treatment groups of 0%, 10% and 20% substitution in 3 replicates in a randomized complete block design (RCB). The experimental rations and water were supplied liberally to various treatment groups, Records kept included initial weight of each bird in each of the treatments, weekly weight gains, feed consumption and mortality rate. These data were subjected to statistical analysis including ANOVA.

### **Results and Discussions**

Results of the overall performance of broilers at the 70<sup>th</sup> day of the experiment revealed that all the diets were adequate in promoting growth of the birds. Average final weights ranged from 2.23 to 2.78 kg while average

weight gains ranged from 1.19 to 1.75 kg. This shows that the diets containing cassava in them were adequate in protein and energy. The use of cassava as a substitute in their rations had no statistical significant influence on their live-weight. Average feed intake per bird for the 3 treatments ranged from 6.42 to 6.5 kg.

### **Cost Evaluation**

Table 2 shows that the ration used in Treatment 3 is the cheapest in terms of cost of production. It also shows that the treatment has the highest feed conversion efficiency and the lowest cost for one kg of feed needed to produce one kg of broiler meat.

### **Farmers' Reaction**

The 3 farmers who participated in the trial were very happy with the results and exhibited their enthusiasm. They were patient and co-operative in weighing out all the ingredients and mixing them to produce the experimental rations. However, they enquire whether it would be possible for such a trial to be carried out with higher percentage of cassava inclusion from day old to market weight. They also suggested the possibility of using fried garri in place of cassava flour to reduce its dustiness and improve the storability of the finished ration.

### **Conclusion**

The use of cassava root as a partial substitute for maize in broiler diet is of special importance. It is an energy and protein source of meal which could be produced locally and at minimal cost. Also, this will enable the poultry farmers to still remain in their businessenterprise in Anambra State.

The experiment conducted indicated that the treatments were adequate in promoting the healthy living of the birds and no significant difference observed in their live-weight within the periods of the experiment. Finally, this paper suggested the use of fried garri in place of cassava flour to reduce dustiness and improve its storability.

## References

- Chou, K.C.; Z. Muller and K.C. Nah (2008). High level of tapioca –meal in poultry rations. *Indian Journal of Animal Sciences* 44: 697 – 702.
- Long, O.G.L.; and J.A. Oluyemi. (1998). Comparative use of cassava, maize and guinea corn as the major dietary source of carbohydrates for chicks. *Journal of the Association for Advancement of Agric, Science in Africa* 4: 47 -52.
- Obioha, F.C and G.O. Azubuike (2009). The effect of partial replacement of maize with cassava peel on layer performance. *Nutri. Rep. Int.* 30 (6): 1423 – 1429
- Okeke, G.C., F.C. Obioha and A.E. Udeogu (2005). Comparism of detoxification methods for cassava – borne Cyanide. *Nutri Rep. Int.* 32 (1): 139 -147
- Stevenson, M.H.; and N. Jackson (1983). The nutritional value of dried cassava root meal in broiler diets. *Journal of the Science of Food and Agric* 34: 1361 – 1367.

**Table One: Effect of Cassava on the Growth Performance of Broiler.**

	Percentage of Cassava in Rations.		
	0%	10%	20%
Av. Live weight per bird (kg) at 35 days old	1.03	1.04	1.08
Av. Live weight per bird (kg) at 70 days old	2.78	2.23	2.59
Av. Live weight gain/bird	1.75	1.19	1.51
Feed intake/bird for 35 day	6.50	6.42	6.53
mortality	0	0	0
Feed efficiency ( <u>wt gain</u> ) (feed intake)	0.269	0.185	0.231
Feed conversion ratio ( <u>feed intake</u> ) (wt gain)	3.714	5.395	4.325
Cost of feed/kg (₦)	29.2	23.676	23.205
Cost of producing 1kg of broiler (₦)	107.70	125.73	100.36

**Table Two: Percent composition and cost of experimental rations**

<b>Raw Materials</b>	<b>T<sub>1</sub></b>	<b>T<sub>2</sub></b>	<b>T<sub>3</sub></b>
<b>Ingredients</b>	<b>100kg</b>	<b>100kg</b>	<b>100kg</b>
Maize	60	50	40
Cassava flour	0	10	20
Spent Grain	12	13	13
PKC	5	5	4
Soya bean meal	8	9	10
Fish meal	8.5	9	9
Wheat middling	3	0	0
Bone meal	3.25	3.8	3.8
Pre mix	0.24	0.2	0.2
Cost	₦2435.90	₦2367.60	₦2320.60
Protein%	10.545	18.625	18.51

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## **Economic Evaluation of Crop Farms Acquired for Crude Oil Production Activities in Rivers State of Nigeria**

**(Pp. 279-292)**

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### **Abstract**

*This study focused on the economic evaluation of crop farms acquired for crude oil production activities in Rivers State, Nigeria. The objectives include estimating the areas of crop farms acquired and economic evaluation of crops lost due to the various crude oil production activities in the state. A multistage sampling technique was used to collect data from 169 crop farmers whose farmland were affected with different crude oil exploration activities via questionnaires. The results showed that a total of 682.91ha of crop farms were acquired for crude oil exploration purposes out of which pipelines laying (25.21%), flow stations (21.51%) and oil well sites (20.34%) topped the list. The results further showed that the total value of economic loss due to crude oil production activities was \$165,287.10 out of which pipelines laying accounted for \$43,741.25, flow stations (\$36,387.92), oil well sites (\$31,334.67), gas flaring sites (\$10,485.63). The study showed that large areas of crop farms in the state were acquired for crude oil production activities. Due to the small scale nature of farms in Nigeria, a lot of crop farmers in Rivers State were negatively affected which had resulted into*