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## Cheaper Alternative Feedstuffs for Sustainable Cockerel Production: An Admixture of Rural-Urban Resources and Preferences

SAMUEL ARO, ESTHER ABOYEWA, V. AYOBORE ALETOR

*The Federal University of Technology, Dept. of Animal Production and Health, Nigeria*

### Abstract

The cockerel aspect of poultry production can be encouraged and sustained in a rural-urban setting with cheaper alternative feedstuffs like cassava tuber wastes (CTWS). This is because the integration of livestock production with agro-industrial by-products allows for efficient recycling of resources especially at rural-urban interface. A twin effect of cheaper animal products that will alleviate protein malnutrition among the rural populace and get rid of such agro-industrial wastes and their inherent environmental hazards could therefore be achieved. This hypothesis was put to test by conducting a sixteen week study on 210 day-old cockerel birds fed fermented cassava tuber wastes (CTWs) collected from rural communities of Akure metropolis in Nigeria. The CTWs were subjected to solid substrate fermentation using a combination two lactic acid bacteria (*Lactobacillus delbrueckii* and *Lactobacillus coryneformis*) and a cellulolytic fungus (*Aspergillus fumigatus*) in order to achieve nutrient enrichment and crude fibre degradation of the wastes. Seven standard cockerel diets were formulated, in which diet T1- the control had no inclusion of CTWs, T2 contained 20 % microbially fermented cassava peel (MFCP), T3 contained 40 % MFCP, T4 contained 60 % MFCP, T5 contained 20 % microbially fermented cassava starch residues (MFCSR), T6 contained 40 % MFCSR and T7 contained 60 % MFCSR.

The results revealed that final weight and total weight gain per bird were similar ( $p > 0.05$ ) in T1, T2, T5 and T6, also total feed intake showed no significant differences ( $p > 0.05$ ) at both starter and finisher phases but birds fed the CTWs diets consumed more feed than those fed the control diet. The cost of feed per kg and the cost of feed consumed per bird decreased with increasing level of inclusion of CTWs in both phases except in birds fed the T7 diet. It could be concluded that the inclusion of 20 % MFCP and up to 40 % of MFCSR in cockerels' diet would not adversely affect growth and economy of production.

**Keywords:** Cassava tuber wastes, cockerel, cost, fermentation