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Performance, Digestibility and Carcass Characteristics of Broilers Fed Graded Levels of Fermented Cassava Tuber Wastes

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Abstract

Two cassava tuber wastes (CTW), namely cassava peels (CAP) and cassava starch residues (CSR) were subjected to solid substrate fermentation using a consortium of microorganisms (*Lactobacillus delbrueckii*, *Lactobacillus coryneformis* and *Aspergillus fumigatus*), in order to improve their nutritive quality and reduce their levels of anti-nutrients. The microbially fermented (MF) products from the two wastes (MFCAP and MFCSR) were thereafter used at varying levels to formulate seven standard broiler diets designated as Diet 1 (0% CTW), Diet 2 (20% MFCAP), Diet 3 (40% MFCAP), Diet 4 (60% MFCAP), Diet 5 (20% MFCSR), Diet 6 (40% MFCSR) and Diet 7 (60% MFCSR). Two hundred and ten day-old broiler chicks were randomly allotted to the seven treatment diets. The chicks were fed with these diets for eight weeks. Growth performance, apparent nutrient digestibility and carcass parameters of the broiler birds were used as response criteria.

The results showed that the final body weight and total weight gain were similar ($p > 0.05$) among the treatments. Total feed intake per bird increased with increase in the dietary level of MFCAP while it decreased with increasing level of MFCSR. Crude protein digestibility improved significantly (86.5%) in the 60% MFCSR diet. The dressing percentage ranged from 73% in the 60% MFCSR diet to 85% in the 20% MFCAP diet. Carcass morphometry revealed that the breast, drumstick and thigh were not significantly ($p > 0.05$) affected when the two fermented wastes were used up to 40% level for MFCAP and 20% for MFCSR. Since the final live weight, total weight gain and the choice portions of the carcass were not significantly affected, these wastes could be utilised for broiler birds at those levels of inclusion without any adverse effects on their performance and carcass characteristics.

Keywords: Chicken, cassava wastes, digestibility, fermentation, growth performance, dressing percentage