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EFFECTS OF PARTIALLY SUBSTITUTING SOYA BEAN (GLYCINE MAX) MEAL WITH COWPEA GRAIN MEAL (VIGNA UNGUICULATA) ON BROILER CHICKEN GROWTH AND CARCASS QUALITY

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ABSTRACT

The effects of partially substituting Soyabean (*Glycine Max*) meal with heat treated Cowpea grain meal (*Vigna Unguiculata*) on broiler chick growth and carcass quality were investigated. Soyabean meal was partially substituted by four levels of cowpeas grain meal as follows (0, 15, 20and 40%). A Completely Randomized Design with 3 replicates per diet and 76 one day old Ross 308 broiler chicks were used for the experiment. Iso-energetic and iso-nitrogenous starter and finisher diets were formulated using IDT 2005 software according to NRC, (2014) broiler nutrition standards. Feed intake and weight gain of the broilers were assessed at three and six weeks of age and carcass quality using slaughter weight and dressing out percentage after slaughter at six weeks. The results were subjected to analysis of variance using SPSS version 21 and TUKEY Post hoc test to separate means. The results showed that partially substituting soyabean meal with cowpea grain meal at (0, 15, 30 and 40% levels) had no effect (p>0.05) on broiler mean fee intake (1016.48g +28.21), mean weight gain (653.70g +17.90) and feed conversion ratio (1.56 +0.06) amongst all diets in the starter phase. Partially substituting soyabean meal with cowpea grain meal had no effect (p>0.05) on the broiler mean feed intake (1786.69g +71.71), mean weight gain (907.89g +26.06) and feed conversion ratio (1.98+0.08) amongst all diets in the finisher phase. Results showed that all researched dietary levels had statistically similar total feed intakes (2803.17g +80.20), feed conversion ratios for the six weeks growth period (1.75+0.47), slaughter weights (1603.31g +38.11) and dressing out percentages (74.55+0.66) among all diets. In conclusion cowpea grain meal can partially substitute soyabean meal in the broiler starter diets up to 40%, without a statistical growth compromise and also within the Ross breed performance manual acceptable results (2016). In the finisher phase, no dietary level (0-40%) can be recommended for use from the study even though all diet results were statistically similar, it is because all results were compromised below the accepted Ross breed (2016) and slaughter weight (AMA, 2018) standards.