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Effect of Various Processing Techniques on Metabolizable Energy Value of Wheat Grains in Poultry

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Abstract—*In an experiment two hundred seventy, day-old chicks were randomly divided into nine treatment groups i.e. T_1, T_2, T_3, T_4, T_5, T_6, T_7, T_8 and T_9 , having six replications and each replication had five birds for five weeks. In this experiment all the birds were fed a reference diet by incorporating maize, deoiled rice polish, soybean meal, groundnut cake, fish meal & mineral mixture up to three weeks of age. After three weeks chicks of treatment group T_1 were fed reference diet and served as control group. While in chicks of treatment group T_2 & T_3 reference diet was replaced with ground wheat at 20 and 40% levels, in T_4 & T_5 reference diet was replaced with cooked wheat at 20 and 40% levels, in T_6 & T_7 reference diet was replaced with soaked wheat at 20 and 40% levels, in T_8 & T_9 reference diet was replaced with reconstituted wheat at 20 and 40% levels, respectively. Metabolic studies showed that metabolizable energy (ME), Kcal/kg diet increased with addition of processed wheat in the diets irrespective of the processing techniques as compared to the reference diet. Among different treatment groups ME values were highest in cooked wheat diets. It increased (177kcal/kg) by 5.71 % due to cooking as compared to grinding, whereas due to soaking and reconstitution the ME vales decreased to the tune 25 & 56 kcal/kg, respectively. Percent nitrogen retention was highest in cooked wheat diet followed by ground, reference, and soaked and reconstituted wheat diet. The ME value determined by chemicals and biological methods were comparable. From the results of present investigation it may be inferred that ME values of cooked wheat diet were highest among the processing technique used and reference diet along with significant ($P<0.05$) higher nitrogen retention.*