

Effects of feeding different levels of corn dried distillers grains with solubles on growth performance, carcass yield and meat fatty acid composition in broiler chickens

ABSTRACT

A randomized complete design with 6 replicates of 10 birds per treatment ($n = 60$) was utilized to evaluate the effects of feeding corn dried distillers grains with solubles (CDGS) on growth performance, carcass yield and breast muscle fatty acid composition of chickens. A total of 300 male broilers (Cobb 500) were fed with different levels of CDGS (0% - control, 5, 10, 15 and 20%) in starter (age 0 to 21 day) and grower (age 21 to 42 day) diets, and weight gains and feed intakes were recorded. All diets were formulated isocaloric and isonitrogenous which met or exceeded the NRC requirements. At the end of the experiment (42 day) eight birds from each treatment were slaughtered to measure the dressing percentage, carcass parts yield and fatty acid profile of breast meat (from the left carcass side). Birds fed 5% CDGS had better ($p < 0.05$) feed conversion ratio than those fed 10, 15 or 20%, but were not different ($p > 0.05$) from control. There were no differences ($p > 0.05$) in overall weight gain, feed intake, dressing percentages and carcass parts yields (% of carcass weight) among treatments. There were greater ($p < 0.05$) percentages of linoleic acid (18:2 n-6) and elevated ($p < 0.05$) polyunsaturated to saturated fatty acid ratios in chicken breast meat with increasing dietary CDGS. In conclusion, incorporating 5% of CDGS in the broiler diet did not affect ($p > 0.05$) the growth performance and carcass yield. However, increasing the dietary CDGS increased ($p < 0.05$) the percentage of linoleic acid and polyunsaturated to saturated fatty acid ratio in chicken breast meat.

Keyword: Broiler chickens; Corn distillers dried grains with solubles; Growth performance; Meat fatty acid composition