

## STUDY OF BROILER PERFORMANCE BY SUPPLEMENTING WHOLE WHEAT IN BROILER RATION

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### Executive Summary

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The feeding of supplemental whole wheat to broiler include a reduction in feed cost and improvement in gizzard development resulting in improved digestive efficiency. The gastrointestinal tract weight significantly increased in the presence of whole grain wheat. However, this study is subjected to achieve the objective 1. To determine production performance of broiler chicken fed with whole wheat grain and 2. To examine the potency of some visceral and hematological index fed with whole wheat grain in daily ration. The experiment was conducted at SAU Poultry Farm. The research project was for one year (2017-2018). The broiler rearing period was for 35 days and it was in the month of Jan-Feb 2018. After one week brooding 300 chicks were distributed randomly in four (4) dietary treatments of whole wheat; and one non-whole wheat for control. Each treatment had five (5) replications with 12 birds in each. Experimental treatments are  $T_0$  = commercial feed with no wheat;  $T_1$ = 4% whole wheat with feed;  $T_2$ = 8% whole wheat with feed;  $T_3$ = 12% whole wheat with feed and  $T_4$ = 16% whole wheat with feed. Starter ration had 21.0 % CP and 3000 ME Kcal/Kg and Grower ration had 20.0 % CP and 3050 ME Kcal/Kg. All other management issues were maintained as poultry management standard protocol. Weekly live weight, feed consumption, death of chicks, abdominal fat, dressing yield was calculated for each replication. Blood sample was collected to measure glucose, hemoglobin and cholesterol level. MSTAT-C computer package program, RCBD 1 factor design for ANOVA table was used. The 4.0 % whole wheat supplementation treated birds consumed significantly ( $P<0.05$ ) less feed (3068g) which had significant ( $P<0.05$ ) difference with birds consumed highest amount of feed (3269g) in control group. The less feed consumed birds showed higher live weight (2212g) and better FCR ( $P<0.05$ ). The treatments did not show any significant ( $P>0.05$ ) difference in dressing percent and survivability. The 4% whole wheat supplemented group achieved highest gizzard weight (57g). No significant ( $P>0.05$ ) difference was found in weight of GI tract ( $245.72\pm 9.46g$ ), liver weight ( $43.88\pm 3.12g$ ), spleen ( $2.60\pm 0.22g$ ) and heart weight ( $12.30\pm 0.57g$ ). Similarly, hematological parameters like hemoglobin ( $9.06\pm 0.32g/dl$ ), glucose ( $286.10\pm 8.57mg/dl$ ) and cholesterol ( $191.04\pm 16.67mg/dl$ ) did not affected ( $P>0.05$ ) by whole wheat supplemented ration. The 4% whole wheat supplementation in broiler ration was very effective. So, whole wheat supplementation could be used for better gizzard function that indirectly helps to increase production performance of the birds.

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