

**Comparison of Broilers and Naked-Neck Indigenous Chickens:  
Influence of Black Soldier Fly Larvae as a Protein Supplement Replacing  
Soybean Meal in Poultry Diets on Growth Performance, Protein  
Digestibility, Meat Quality and Intestinal Morphometry**

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The influence of three levels of black soldier fly larvae (BSFL) inclusion (0, 15 and 30% of soybean meal [SBM]) was tested for Cobb-500 broilers and naked-neck (NN) indigenous chickens in a 2×3 factorial arrangement. Isoenergetic and isonitrogenous experimental diets were formulated to meet the nutrient requirements by Cobb-500 for the grower (14-21d) and finisher phases (22-35d). A total of 7d-old 180 birds (90 broilers and 90 NN) were randomly distributed into 30 cages (five replicates/treatment, six birds/replicate). Birds were acclimatized for live feeding of BSFL from 7 to 14d and fed experimental diets from 14 to 35d. Based on growth performance (14-35d), the responses of body weight gain (BWG), and feed conversion ratio (FCR) to bird type interacted with BSFL inclusion level ( $P<0.05$ ). Both BWG and FCR of Cobb-500 were higher in 0% and 15% BSFL compared to 30% BSFL in the diet. However, BWG of NN was not influenced by the increasing dietary inclusion of BSFL. Compared to the control diet (100% SBM), BSFL inclusion at 15 and 30% of SBM increased the FCR of NN. Comparing only Cobb-500 broilers, the apparent ileal crude protein digestibility was higher ( $P<0.05$ ) in 30% BSFL than in the control diet. Irrespective of the bird type, 15% and 30% BSFL reduced the gizzard pH ( $P<0.01$ ) compared to the control. Considering meat quality, water holding capacity was not influenced by tested parameters ( $P>0.05$ ). Cooking loss was influenced by both bird type and BSFL inclusion level ( $P<0.05$ ). The relative weights of heart, liver and gizzard were higher ( $P<0.05$ ) in NN compared to broilers. Based on growth performance, BSFL could replace up to 15 and 30% of SBM for broilers and NN, respectively, without comprising the BWG.

**Keywords:** Black soldier fly larvae, Broiler, Cobb-500, Growth performance, Naked-neck

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