EFFECT OF DIFFERENT LEVELS OF STOCKING DENSITY AND DIETARY SODIUM BICARBONATE ($NaHCO_3$) ON PERFORMANCE, MEAT QUALITY AND ORGAN WEIGHTS OF BROILER CHICKEN

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ABSTRACT

This study was conducted to determine the effectiveness of different levels of $NaHCO_3$ and different stocking densities on performance and meat quality of broiler chicken. A total of 360, 19-d-old broiler chicks were randomly allocated in to 6 experimental units in a 2 × 3 factorial arrangement of two different stocking densities as D1(Standard density: 1.2 ft^2/bird) and D2 (High density: 0.85 ft^2/bird)and three levels of $NaHCO_3$(0%, 0.3%, 0.5%). Each treatment consisted with 5 replicates. Data were subjected to factorial analysis using the General Linear Models procedure of two-way ANOVA of statistical analysis system. The highest ($P< 0.05$) daily weight gain of broilers was recorded from D1 (59 g/bird/day), 0.3% $NaHCO_3$ (69 g/bird/day). The highest ($P< 0.05$) average daily feed intake was recorded from D2 (112 g/bird/day), 0.5% $NaHCO_3$ (116 g/bird/day). Favourable ($P< 0.05$) feed conversion ratio was obtained from D2 (2.31) and 0% $NaHCO_3$ (3.06). The highest ($P< 0.05$) pH value was recorded fromD1 (5.53) and 0.3% $NaHCO_3$ (5.51) and lowest ($P> 0.05$) from D2 (5.35), 0% $NaHCO_3$ (5.30). Highest ($P< 0.05$) redness of breast meat was recorded from D1 (12.49), 0.3% $NaHCO_3$ (12.37). The highest ($P< 0.05$) relative weight of intestine was recorded from 0% $NaHCO_3$ (4.67). Highest ($P< 0.05$) liver weight was recorded from 0.3% $NaHCO_3$ (2.60). In conclusion, dietary supplementation of 0.3%$NaHCO_3$ has better effects on growth performance of broilers regardless of the stocking density.

Keywords: Average daily weight gain, Average feed intake, $NaHCO_3$, Stocking density