

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

## TOTAL ELECTROLYTIC BALANCE IN BROILER DIETS FROM 14 TO 27 DAYS OF AGE

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The electrolytes of the diet consumed by the animals exert an influence on the acid-base balance and, consequently, affect metabolic processes related to growth, disease resistance, survival stress and performance parameters. The experiment was carried out in the shed, used for make experiments, in the poultry sector of the Federal Institute of Education, Science, and Technology of Northern Minas Gerais, Janaúria Campus. In this process, three hundred and twenty (320) animals were used, distributed in boxes containing ten birds in each one, being four treatments with eight repetitions each one. The treatments were composed of different values of total electrolyte balance (BET): 120, 160, 200 and 240 (mEq/kg). The rations and water were offered at will. The rations were formulated according to the nutritional requirements of the stage. The animals were weighed at 14 and 27 days of age. The parameters of average feed intake (CM) were evaluated based on kilograms; as well the average weight gain (GP). The feed conversion (AC) was assessed based on kg/kg. For the CM and CA values, no statistical difference was observed ( $P>0.05$ ); although for GP, the BET values showed significance ( $P<0.05$ ). It was observed a quadratic effect from BET to GP, where an equation was estimated to determine its best value: Equation 1.  $GP = (-0.00002) BET^2 + (0.00735) BET + 0.16959375$ . The different electrolytic balances were able to infer in the broilers nutrient absorption metabolism. It resulted in greater weight gain for an estimated BET value. The electrolytic balance interferes in the absorption of nutrients by the intestinal mucosa, and later in the cellular metabolism of the tissues. One of the major cellular mechanisms sensitive to differences in electrolytic balance at the cellular level is the sodium and potassium pump, which is indirectly responsible for the absorption and cellular anabolism of some nutrients, including glucose and essential and non-essential amino acids. It was necessary to perform an ideal electrolytic balance where all the electrolytes present in the diet are considered in the calculation of BET for a broilers perfect performance. The ideal BET estimated equation 1 for the GP maximum was 368 mEq/kg.

**Keywords:** aviculture, electrolytes, nutrition, performance, precision

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