EFFECTS OF DIETARY ELECTROLYTE BALANCE ON THE PERFORMANCE TRAITS IN BROILERS

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Dietary fixed cations (Na+ and K+) and the fixed anion, Cl-, are considered essential electrolytes for the acid-base balance of poultry. They are responsible for the maintenance of ideal homeostasis in order to achieve maximum chicken performance. The objective of this study was to compare three different Na+K-Cl balance levels. Today salt supplementation to reduce economic losses by heat stress is a common practice in Brazilian poultry management conditions, although the literature shows some controversy about this subject. This research compared broilers performance on the Summer from the beginning until 45 days of age with usual diets, where the acid-base balance was calculated, trying to identify the best electrolyte balance. The data were analyzed using a DCC, with 8 repetitions of 100 broilers, and three treatments considered high, medium, and low electrolyte balance levels, which were calculated by the MONGIN (1981) equation. It was determined by the analysis of variance that weight gain, feed consumption, feed conversion, viability, and Productive Efficiency Index (PEI) were unaffected by the electrolyte balance, although the low electrolyte balance level had shown the lowest PEI. In this study, dietary manipulation of electrolyte balance did not improve performance traits of broilers housed in high temperatures, but it is recommended further studies with different procedures, in order to investigate the efficiency of this management practice and its effect on the reduction of heat stress in broilers.

Key Words: poultry, heat stress, Na+K-Cl balance, Mongin equation, acid-base balance.