

Sodium and Chloride Requirements of Broiler Chicks

Two papers presented at the Poultry Science meetings this summer evaluated the sodium and chloride requirements of broiler chicks. The research was done in Brazil and presented in two parts. In the first portion of the study, sodium and chloride responses for chicks 0-21 days of age were evaluated. The effects of sodium and chloride levels expressed as electrolyte balance on acid-base balance, litter moisture and tibial dyschondroplasia (TD) incidence was evaluated. Sodium levels were varied from 0.10% to 0.35% and chloride levels from 0.10% to 0.45%. The results indicated an optimum sodium requirement of 0.28% when evaluated by gain, intake or feed conversions. Dietary sodium levels were shown to have a linear effect on blood pH, bicarbonate and base excess. TD incidence decreased with increasing dietary sodium. Optimum level of chloride observed was 0.25%. The optimum electrolyte balance (expressed as Na+K-Cl) was 246-264 meq/kg.

The second paper dealt with chicks from 21-49 days of age. The experimental design was similar to the first paper with like levels of sodium and chloride fed. The optimum sodium level was 0.15% ,optimum chloride was 0.23% and optimum electrolyte balance 249-257 meq/kg.

The apparent optimum level of sodium in the young chicks (0.28%) is higher than the current NRC recommendations. It does agree with increased industry interest and usage of higher sodium levels particularly in starter and grower diets. Recommendations for optimum electrolyte balance also agrees with increasing industry practice.

The abstracts were:

280 Sodium and chloride nutritional requirements for young broiler chickens (1-21 days of age). E.O. Oviedo-Rondon et. al. (1999 abstract Poultry Science)

#279 Sodium and chloride nutritional requirements for growing broiler chickens (21 to 49 days of age). A.E. Murakami, E.O. Oviedo-Rondon et.al. (1999 abstract Poultry Science)