

EFFECTS OF LOW CRUDE PROTEIN DIETS WITH AMINO ACID SUPPLEMENTATION ON BROILER PERFORMANCE IN THE STARTER PERIOD

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ABSTRACT

A series of experiments were conducted to examine the effects of feeding low crude protein (CP) corn and soybean meal diets with crystalline amino acid supplementation to broilers from 0-3 weeks of age. It was hypothesized that these diets would support similar growth to birds consuming standard NRC-type diets.

The first two experiments utilized a 23% CP positive control ration and several 15% CP rations with different combinations of amino acids added back to meet or exceed NRC requirements. In Experiment 1, body weight gain was found to be significantly greater ($P < 0.05$) in birds consuming the control ration. In Experiment 2, there were no differences ($P > 0.05$) among any of the treatments. This experiment supported the original hypothesis. The next two experiments were conducted with the objective of testing the effects of feeding 13% CP diets with various protein equivalents on the performance of broilers. Performance was found to be significantly reduced ($P < 0.05$) in birds consuming the 13% CP diets. The final two experiments were conducted in order to determine how the addition of meat and bone meal (MBM) or various levels of added fat may affect performance in broilers consuming low CP diets. The addition of MBM or dietary fat did not result in the same growth as the high CP control rations. These experiments indicate that a 15% crude protein ration with crystalline amino acid supplementation can support similar performance ($P > 0.05$) when compared to an NRC-type 23% crude protein diet.