**EFFECT OF ZINC AMINO ACID COMPLEX ON PERFORMANCE AND GUT INTEGRITY** **OF *CLOSTRIDIUM* *PERFRINGENS*-CHALLENGED BROILERS**

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In a performance study, 480 1-d-old broilers were fed diets supplemented with: 80 mg Zn/kg from ZnSO4 (ZNSO4); 40 mg Zn/kg from ZnSO4 and 40 mg Zn/kg from Zn amino acid complex (ZnAA; ISO); 40 mg Zn/kg from ZnAA (ZNAA); or 20 mg Zn/kg from ZnSO4 and 40 mg Zn/kg from ZnAA (RR). In a challenge study, 180 1-d-old broilers were fed ZNSO4 diet, ISO, or ZNAA with or without *Clostridium perfringens type A* challenge. In the performance study, body weight gain from d 1 to 21 differed (P<0.05) among treatments; however, there was no difference among treatments in other measures of growth performance, yield of breast and leg meat, strength and Zn content of the tibia, and serum antioxidant capacity. In the challenge study, *C. perfringens* challenge increased (P<0.05) intestinal permeability of FITC-Dextran and plasma endotoxin levels, and decreased (P<0.05) expression of occludin levels in the ileum of chicks on d 21. Broilers fed ISO had the greatest (P<0.05) villus height and villus:crypt depth in the ileum on d 14. Broilers fed ISO also had the lowest (P<0.05) plasma endotoxin levels and greatest expression of occludin in the ileum on day 21. These results indicated that replacing ZnSO4 with ZnAA in broiler diets could alleviate the loss of intestinal mucosal barrier function induced by *C. perfringens* challenge. This may be explained by increased expression of occludin in the ileum.