**EFFECT OF METAL AMINO ACID COMPLEXES ON PERFORMANCE AND BONE DEVELOPMENT IN BROILERS.**

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An experiment using 576 one-day-old Ross 308 male broiler chicks was accomplished as a completely randomized block design, with 16 birds/replicate (12 reps/treatment). A performance evaluation at 42 days-of-age and bone characteristics at 7, 21, and 35 days-of-age were completed. Birds were fed 1 of 3 dietary treatments: 1) 90 ppm Zn as ZnSO4 + 100 ppm Mn as MnSO4 (Control); 2) Control + 40 ppm Zn as zinc amino acid complex (ZnAA); 3) ZnAA + 40 ppm Mn as manganese amino acid complex (Zn/MnAA). At d 42, the ZnAA treatment numerically improved live weight (LW), adjusted feed conversion ratio (aFCR), carcass yield (CY) and breast meat yield (BMY), and significantly reduced mortality (*P* < 0.05). The ZnAA treatment also improved ½ length femur cross-section area (*P* < 0.10) at all ages collected, ¼ length femur cross-section area at 21 d (*P* < 0.06), ½ length cross-section long diameter (*P* < 0.18), and thickness of bone opposite the thinnest point of the wall (*P* < 0.06) in all ages. At 42 days, the Zn/MnAA treatment numerically improved LW, aFCR, CY and BMY, and significantly reduced mortality (*P* < 0.05). This treatment also improved bone ash at 35 d, ½ length femur cross-section area at 21 and 35 d (*P* < 0.18), and thickness of bone opposite the thinnest point of the wall at 35 d (*P* < 0.01). The data show that supplementing ZnAA and Zn/MnAA positively improved broiler performance and carcass characteristics, while also improving bone health and development.

Keyword: mineral amino acid complex