

T187 Effect of feeding Zn Methionine-Hydroxy-Analogue Chelate to broilers and its differential effects compared to feeding ZnSO₄

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Two floor-pen trials tested the effect of feeding Zn from MINTREX[®] Zn on performance, carcass and meat quality traits of male broilers from 1 to 42d, and MINTREX[®] Zn differential response when compared to ZnSO₄. A total of 1,080 and 1,620 Cobb 500 d-old cockerels were allotted to 9 reps of 24 or 20 birds in trials 1 (E1) and 2 (E2), respectively. Five treatment levels of Zn (0, 16, 32, 64 and 128ppm) were fed from MINTREX[®] Zn only for E1, or from either MINTREX[®] Zn or ZnSO₄ in a factorial 2 (Source) x 4 (levels) + Negative Control to test the differential Zn Source response for E2. Birds were fed iso-nutritional corn-SBM-PBM (E1) or corn-SBM with 500 FTUs of phytase (E2) diets across treatments except for Zn which was further added accordingly. Pens had reused litter and feeder space as in the field. Birds were vaccinated with Newcastle, IBD and Marek as used locally. ANOVA, Tukey test and regression analyses were used. Qualitative parameters and lesions (%) were analyzed by Kruskal-Wallis test. In E1, BWG, FCR and production efficiency (EPI) improved when adding MINTREX[®] Zn showing a cubic effect (P<0.05) and reaching optimal performance at 39, 35 and 37 ppms of added Zn, respectively; and carcass and breast (g) improved and scratches and bruises incidence dropped (P<0.05). In E2, BWG, FCR and EPI improved when adding Zn. Still, birds showed greater BWG (3.007 vs 3.049 kg P <0.05), and EPI (432 vs. 448; P<0.005), when fed MINTREX[®] Zn rather than ZnSO₄, while FCR was not different (1.577 vs 1.563 for MINTREX[®] Zn and ZnSO₄ respectively; P=0.19). Optimum Zn levels were achieved at 35, 38 and 37 ppms for MINTREX[®] Zn; and at 41, 43 and 41 ppms of Zn from ZnSO₄ for BWG, FCR and EPI, respectively. Increasing Zn from ZnSO₄ beyond the aforementioned levels did not compensate for its presumed lower bioefficacy resulting in 42g and 17 points loss in BWG and EPI vs. MINTREX[®] Zn, respectively. In conclusion, aside from improving carcass and meat quality traits of broilers fed practical diets formulated with practical ingredients, MINTREX[®] Zn can improve live performance above that obtained with ZnSO₄. In spite of E1 and E2 having 0 or 500 FTUs of phytase, respectively, optimal Zn levels from MINTREX[®] Zn calculated for performance traits were very close in both trials.

Key Words: Mintrex Zn, Broilers, Zinc Requirements, Carcass, Meat Quality