

RESEARCH NOW

Broiler Performance may be Improved by Replacing Some Inorganic Zinc With Availa® Zn

Introduction:

Zinc amino acid complex has been shown to have increased bioavailability when compared to inorganic sources of zinc and have a positive effect on reproduction and immune status. This experiment was conducted to look at the progeny effects of zinc source supplemented to breeder hens.

Results:

Additional zinc fed to Hens had no effect ($P > 0.05$) on progeny in terms of the following:

- Body weight
- FCR
- Feed Intake
- Mortality
- Leg abnormalities

Addition of Availa-Zn + ZnSO₄ to broilers had the following improvements vs. BASAL and ZnSO₄, at day 17 of age:

- Improved FCR ($P < 0.05$)
- Higher body weight ($P < 0.05$)

Trial Design & Treatments:

- Cobb 500 slow-feathering hens used
- All hens fed BASAL diet for 1st 20 weeks, then assigned to the following:
 - No additional zinc (BASAL)
 - 160 ppm zinc from ZnSO₄ (ZnSO₄)
 - 160 ppm zinc from Availa-Zn (Availa-Zn)
 - 80 ppm zinc from Availa-Zn + 80 ppm zinc from ZnSO₄ (ZnSO₄ + Availa-Zn)

Conclusion:

Data from this experiment indicate that broiler performance maybe improved when replacing 40 ppm dietary zinc from ZnSO₄ with 40 ppm zinc from Availa-Zn.



ABSTRACT

S169 Effect of Dietary Zinc Source on Live Performance of Broilers Resulting from 43-Week Old Hens Fed Various Levels and Sources of Zinc. B. P. Hudson*¹, W. A. Dozier, III¹, J. L. Wilson¹, and T. L. Ward². ¹The University of Georgia, Athens, GA, ²Zinpro Corp., Eden Prairie, MN.

Supplementing diets with zinc amino acid complex has improved reproductive performance of broiler breeder hens. Because complexed zinc sources have been associated with increased bioavailability compared to inorganic sources, live performance of broilers may be enhanced by providing complexed zinc to hens and their progeny. This experiment examined the effects of zinc source or level in broiler breeder hen diets on progeny performance. Progeny were also provided different zinc sources to evaluate effects on performance. Slow-feathering, Cobb 500 broiler breeder hens were given one of four experimental diets containing 160 ppm supplemental Zn from ZnSO₄, Availa®Zn zinc amino acid complex (ZnAA), a mixture of ZnSO₄ and ZnAA (ZnSO₄+ZnAA, 80 ppm Zn from each), or no supplemental zinc after 20 wk (BASAL). Prior to 20 wk, hens in the BASAL treatment were fed diets containing 160 ppm supplemental zinc. Hatching eggs laid during 43 wk were incubated and hatched. Male chicks were placed in 48 battery cages (7 per cage) and were given feeds containing 140 ppm supplemental zinc from either ZnSO₄ (140 ppm) or ZnSO₄+ZnAA (ZnSO₄, 100 ppm Zn; ZnAA, 40 ppm Zn) during the 17 d production period.

Hen zinc treatment had no influence on progeny BW at hatch or at 17 d. Feed conversion, feed intake, mortality and incidence of leg abnormalities were not influenced by hen zinc treatment. Providing supplemental zinc to hens in the form of ZnSO₄ or ZnAA did not improve progeny performance. Although detrimental effects of zinc deficient hens on chick development have been well documented, zinc levels in the BASAL diet were not low enough to yield negative results on chick performance. Broiler diets contained sufficient zinc for normal growth and may have negated any effects of low zinc intake by breeder hens. At 17 d, broilers fed ZnSO₄+ZnAA had lower feed conversion (1.23 vs 1.26, P<0.05) and higher BW (0.59 vs 0.56 kg, P<0.05) than broilers fed ZnSO₄. Feed intake, mortality and incidence of leg abnormalities were not affected by broiler zinc treatment. These data indicate that broiler performance may be improved when replacing 40 ppm dietary zinc from ZnSO₄ with 40 ppm zinc from Availa®Zn zinc amino acid complex.

Key Words: Dietary zinc source, Broiler breeder hen, Broiler performance

2003 Poultry Sci. 82 (Suppl.1):129