

# RESEARCH NOW

## Availa®Zn and Availa®Mn Fed to Breeders Improves Livability of Broiler Progeny

### Introduction:

Both zinc and manganese amino acid complexes (Availa®Z/M) have been shown to increase bioavailability and to have positive effects on broiler performance and immunity when compared to inorganic sources. This experiment was conducted to look at the effect of complexed trace minerals on broiler progeny, when the breeder hens were fed Availa-Zn or Availa-Zn and Availa-Mn.

### Results:

There was no difference between any treatments in terms of the following parameters:

- Body weight gain
- FCR or feed intake
- Carcass weight or yield
- Breast weight or yield
- Fat pad weight or percentage fat

However, broiler progeny of breeders fed Availa-Z/M had increased livability from days 0-17 ( $P < 0.04$ ) and days 0-34 ( $P < 0.04$ ).

- 40 birds/pen
- Progeny performance recorded for 42 day period (0-42 days of age)
- Progeny all fed common diets
- Thus, any progeny effect can be attributed to hen dietary treatment

### Treatments:

Broiler breeders received 1 of 4 diets:

- Control = 75 ppm zinc from  $ZnSO_4$  and 83 ppm manganese from  $MnSO_4$
- Control + 75 ppm Zn from  $ZnSO_4$  and 80 ppm Mn from  $MnSO_4$
- Control + 75 ppm Zn from Availa-Zn and 80 ppm Mn from  $MnSO_4$
- Control + 75 ppm Zn from Availa-Zn and 80 ppm Mn from Availa-Mn (Availa Z/M)

### Conclusion:

Data from this experiment indicate that broiler livability was improved (as potentially mediated by enhanced immunity) by supplementing breeder hens with Availa-Zn and Availa-Mn.

### Trial Design & Duration:

- Treatments applied to broiler breeder hens
- Broiler progeny placed in 24 pens
- 6 replicates/treatment



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# ABSTRACT

**S37 Responses of Chicks From Broiler Breeders Fed Supplemental Zinc and Manganese From Sulfate or Amino Acid Complexed Sources: Live Performance and Processing.** W. S. Virden<sup>\*1</sup>, J. B. Yeatman<sup>1</sup>, S. J. Barber<sup>1</sup>, C. D. Zumwalt<sup>1</sup>, T. L. Ward<sup>2</sup>, A. B. Johnson<sup>2</sup>, and M. T. Kidd<sup>1</sup>. <sup>1</sup>Mississippi State University, Mississippi State, MS, <sup>2</sup>Zinpro Corp., Eden Prairie, MN.

Live performance and carcass characteristics were evaluated in the progeny of broiler breeders that received diets supplemented with zinc (Zn) and manganese (Mn) from sulfate or amino acid complexed sources. Broiler breeders received one of four diets (6 replications per treatment): a control diet containing 75 ppm Zn and 83 ppm Mn diet from the premix in sulfate forms, control diet plus 75 ppm Zn from ZnSO<sub>4</sub> and 80 ppm Mn from MnSO<sub>4</sub>, control diet plus 75 ppm Zn from Availa<sup>®</sup>Zn (ZnAA) and 80 ppm Mn from MnSO<sub>4</sub>, or control diet plus 75 ppm Zn from ZnAA and 80 ppm Mn from Availa<sup>®</sup>Mn (MnAA). Broiler breeder eggs were set and hatched by pen. Broiler treatments were dietary broiler breeder treatments. Broilers were placed in 24 floor pens with 40 birds per pen using a randomized complete block design. Progeny received a common starter diet from Days 0-17, a common grower diet from Days 18-34, and a common finisher diet from Days 35-42. All diets met or exceeded NRC (1994) nutrient specifications. Body weight gain, feed intake, feed conversion ratio, and percentage livability were evaluated for the starter, grower, and finisher periods. On Day 42, five males and five females from each pen were processed. Carcass yield, breast yield, and percentage fat pad were then calculated for each bird. Treatment differences did not occur ( $P < 0.05$ ) for body weight gain, feed intake, feed conversion ratio, carcass weight, breast weight, fat pad weight, carcass yield, breast yield, or percentage fat. However, progeny of breeders fed the control diet supplemented with ZnAA and MnAA had higher percentage livability from Days 0-17 ( $P < 0.04$ ) and Days 0-34 ( $P < 0.04$ ). Feeding broiler breeders supplemental Zn and Mn from amino acid complexes improved livability (as potentially mediated by enhanced immunity) of progeny without affecting growth or carcass characteristics.

**Key Words:** Zinc, Manganese, Broiler, Livability

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