

## Zinc Sulfate and Manganese Sulfate Titrated with Additions of GemStone<sup>®</sup> Zn and **GemStone** Mn

### Executive Summary

- For body weight gain, the 30 and 40 ppm each of **GemStone** Mn and Zn treatments significantly ( $P < 0.05$ ) out-performed both negative (100 ppm each of Mn and Zn from sulfates) and positive (140 ppm each of Mn and Zn from sulfates) controls (Figure 1).
- Feed conversion was also significantly improved ( $P < 0.05$ ) by the 30 and 40 ppm each of **GemStone** Mn and Zn compared to the negative control but not the positive control (Figure 2).
- For coccidial lesion scores, 40 ppm each of **GemStone** Mn and Zn significantly decreased lesion scores ( $P < 0.05$ ) when compared to the same Mn and Zn mineral supplementation rates of inorganic sulfates (Figure 3).

### Materials and Methods

- 3,000 Ross 708 mixed-sex broiler chicks
- 50 birds/pen; 12 pens per treatment
- Fed commercial-type mash feed
  - Starter: d 0 to 21
  - Grower: d 22 to 42
  - Finisher: d 43 to 49
- Body weight and feed consumption measured at d 21, 42 & 49
- Bone ash and coccidial lesion scores determined at d 42 & 49

### Treatments

- Negative Control (NC): 100 ppm added Zn and 100 ppm added Mn from sulfate sources
- Positive Control: NC plus 40 ppm added Zn and 40 ppm added Mn (totaling 140 ppm Zn and 140 ppm Mn) from sulfate sources
- NC plus 20 ppm OTM: NC plus 20 ppm added Zn and 20 ppm added Mn from **GemStone** Zn and **GemStone** Mn
- NC plus 30 ppm OTM: NC plus 30 ppm added Zn and 30 ppm added Mn from **GemStone** Zn and **GemStone** Mn
- NC plus 40 ppm OTM: NC plus 40 ppm added Zn and 40 ppm added Mn from **GemStone** Zn and **GemStone** Mn

## Results

Figure 1. Average daily gain of broiler chicks fed various zinc and manganese sources from 0 – 49 days of age.

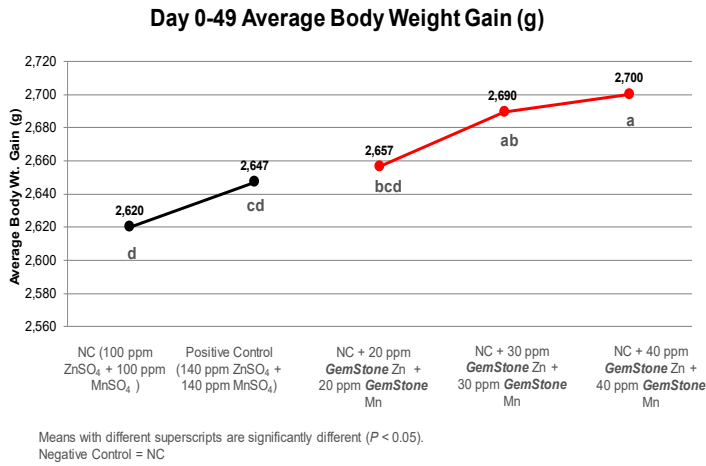


Figure 2. Feed conversion of broiler chicks fed various zinc and manganese sources from 0 – 49 days of age.

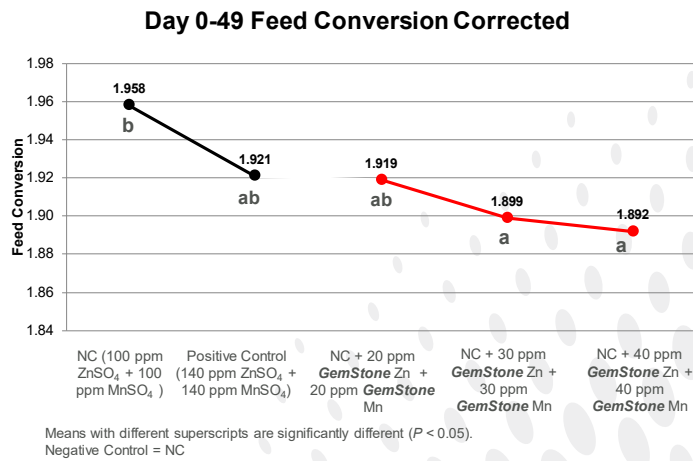


Figure 3. Coccidial lesion scores of broiler chicks fed various zinc and manganese sources from 0 – 49 days of age.

