

Efficiency of an Algae-Zinc Complex Compared to Inorganic Zinc Sulfate on Broilers Performance

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Abstract : Trace minerals play an essential role in vital processes and are essential to many biological and physiological functions of the animal. They are usually incorporated in the form of inorganic salts such as sulfates and oxides. Most of these inorganic salts are excreted undigested by the animal causing economic losses as well as environmental pollution. In this context, the use of alternative organic trace minerals with higher bioavailability is emerging. This study was set up to evaluate the effect of using an algae-zinc complex in replacement of zinc sulfate in the feed, on growth performance of broiler chickens. One-thousand-two-hundred 1-day-old chicks were randomly distributed to 30 pens, allocated to 1 of 3 groups receiving different diets: the standard diet containing 35ppm of inorganic zinc sulfate (C+), a test diet containing 35ppm of algae-based zinc (T+), and a test diet containing half dose (16ppm) of algae-based zinc (T-). Three different feeds were distributed from D0-D11, D11-D21 and D21-D35. Individual weighing of the animals (D21 and D35), feed consumption (D11, D21 and D35) and pododermatitis occurrence (D35) were monitored. Data were submitted to analysis of variance. Results show that in finishing period the ADWG of the T+ and T- groups are significantly higher than the control C+ (+6%, P = 0.03). On the other hand, the FCR for the total period is lower for both the T+ and T- groups than the control C+ (-1.2%, P = 0.04). Pododermatitis scoring also shows less lesions for the test groups with algae-based zinc compared to the control group receiving inorganic one. In the end, this study shows a positive effect of the algae zinc-complex on growth performance of broilers compared to inorganic zinc, both when using full dose (35 ppm) or half dose (16 ppm). The use of algae-zinc complex in the premix shows to be a good alternative to reduce zinc excretion while maintaining performance.

Keywords : algae-zinc complex, broiler performance, organic trace minerals, zinc sulfate

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