Effect of inclusion rate and form of zinc in broiler diets

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The aim of the present study was to evaluate the effects of inclusion rate and form of zinc (Zn) in broiler diets on chick growth and development. Eight groups of day-old chicks (42,0.45 g) with 35 birds in each group were fed commercial diets balanced for nutrients and containing either inorganic Zn (Zn sulphate) or organic (Bioplex Zn, Alltech Inc., USA) at different levels of inclusion. Groups 1-4 were supplemented with zinc in the sulphate form at 100, 70, 50 and 25 mg/kg and groups 3-8 were supplemented with zinc in the Bioplex form with the same rate of inclusion. At 35 days female body weights were (g): 1738.7\textpm30.8; 1630.5\textpm39.8; 1604.7\textpm34.3; 1500.8\textpm37.7 (groups 1-4) and 1749\textpm39.2; 1743.5\textpm46.1; 1741.7\textpm33.0 and 1651.1\textpm37.3 (groups 5-8) respectively. Similar trends were found in the body weights of males. Average daily gains in groups 1-4 were 52.2; 49.1; 47.5 and 45.2 g in groups 1-4 respectively and 53.3; 53.6; 53.4 and 50.3 g in groups 5-8 respectively. FCR was also affected by Zn supplementation being 1.80; 1.88; 1.96 and 2.02 in groups 1-4 respectively and 1.75; 1.74; 1.72 and 1.88 in groups 5-8 respectively. These results indicate that the inclusion of Bioplex Zn into the broiler diet at 50-100 mg/kg is associated with increased body weight and improved FCR.