

THE IMPORTANCE OF THE SUPPLEMENTATION OF ZINC IN NURSERY PIG DIETS

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ABSTRACT

Two 28-d experiments were conducted to investigate the effect of feeding pharmacological concentrations of Zn, from organic and inorganic sources, on growth performance and intestinal microbial population in nursery pigs. Furthermore, to determine the effect of pharmacological concentrations of Zn as ZnO on the number of *Escherichia coli* and lactobacilli excreted per gram of feces of nursery pigs. In Exp. 1, 96 crossbred pigs were weaned and allotted to one of four dietary. Diets were developed by supplementing the basal diet with 3,000 ppm Zn as ZnO, 250 ppm Zn as Zn proteinate or Zn polysaccharide. In Exp. 2, 40 crossbred pigs were weaned and allotted to one of four treatments. Diets were developed by supplementing the basal diet with 750 ppm, 1,500 ppm or 3,000 ppm Zn as ZnO. In Exp. 1, supplementing 3,000 ppm Zn as ZnO in the nursery pigs diets improved growth performance ($P \leq 0.05$) during the 28-d study, which could possibly be attributed to changes in substrate utilization of bacteria or increased fermentative capacity in the intestine. However, the positive growth performance improvement of pharmacological concentrations of Zn as ZnO had no effect under the environmental condition of Exp. 2: minimal stress, and minimal pathogen challenge.