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## **Dietary supplementation of inorganic and organic Zn effect on the microbial population of nursery pigs**

A 28-d nursery experiment was conducted to determine if zinc source (organic vs. inorganic) has an effect on growth performance and metabolic capacity in intestinal flora in nursery pigs. Ninety-six nursery pigs (6.74 +/- 0.25kg and 19 +/- 1d) were weaned and randomly assigned to one of four dietary treatments within pens, each pen contained 3 pigs with 8 replications. From d1 to d14, a phase 1 diet was fed which contained 1.7% lysine, then d15 to d28, a phase 2 diet was fed which contained 1.5% lysine. The basal diet contained no supplemental zinc except for 165 ppm Zn as Zn sulfate which was supplied by the mineral premix. Dietary treatments were formulated by supplementing 3,000 ppm Zn as inorganic ZnO (Trt2), 250 ppm Zn as organic Zn proteinate (Trt 3) or 250 ppm Zn as organic Zn polysaccharide (Trt 4). Weekly body weights, pen feed disappearance, and colonic fecal swab samples were obtained. Each colonic fecal swab sample was examined for changes in metabolic activity of the intestinal flora. Nursery pigs fed diets containing 3,000 ppm ZnO had higher ADG in both phase 1, phase 2, and throughout ( $P < 0.05$ ). Overall, nursery pigs supplemented with the 3,000 ppm ZnO exhibited higher feed intake than pigs fed the control or organic Zn diets ( $P < 0.05$ ). Feed efficiency (gain to feed ratio) was not affected by dietary Zn treatment ( $P < 0.05$ ). These results indicate that feeding 250 ppm Zn as organic Zn has no impact on growth performance. However, supplementing 3,000 ppm ZnO in the nursery pig diets improved growth performance throughout the 28 day study.