

Effects of supplemental nucleosides for newly weaned pigs

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An experiment was conducted to determine the effects of adding nucleosides to starter diets for weanling pigs. Thirty six pigs were weaned at 16 to 29 d of age and allotted to one of three treatment groups with two pigs per pen and six replicate pens per treatment group. Pigs allotted to treatment 1 were fed a corn-casein-lactose-based basal diet (diet 1). Pigs allotted to treatment 2 were fed the basal diet supplemented with 0.002% adenosine, 0.001% cytidine, 0.004% guanosine, 0.0005% inosine, and 0.047% uridine (diet 2). Pigs allotted to treatment group 3 were fed the basal diet supplemented with 0.012% adenosine, 0.006% cytidine, 0.019% guanosine, and 0.002% inosine, and 0.236% uridine (diet 3). Treatment diets were fed for two wk post-weaning. Blood and fecal samples were collected on d 0, 7, and 14. The concentration of IgG was determined in the serum while microbial concentrations were determined in fecal samples. On d 7, pigs fed diet 1 had a higher ($P < 0.05$) fecal count of *Cl. perfringens* compared with pigs fed diet 3 (6.08 vs. 5.04 log₁₀ cfu/g). On d 14, the concentration of *Cl. perfringens* was different ($P < 0.05$) among all treatments (4.76, 4.26, and 3.00 log₁₀ cfu/g for diets 1, 2, and 3, respectively). On d 14, the fecal counts of *L. acidophilus* was higher ($P < 0.05$) in pigs fed diet 2 compared with pigs fed diet 1 (9.32 vs. 8.82 log₁₀ cfu/g). Pigs fed diet 2 also had a higher ($P < 0.05$) counts of *Bifidobacterium spp.* compared with pigs fed diet 1 (8.35 vs. 7.68 log₁₀ cfu/g). Pigs fed diet 3 had counts of *L. acidophilus* and *Bifidobacterium spp.* that were not different from pigs fed the other treatment diets (9.20

and 8.32 log₁₀ cfu/g, respectively). No differences among treatment groups were observed for total coliforms or for *E. coli*. Serum IgG concentrations increased ($P < 0.004$) with time after weaning, but there were no differences among treatment groups. The results of the experiment indicate that nucleoside supplementation during the immediate post-weaning period may positively influence the gastrointestinal microflora by decreasing *Cl. perfringens* and increasing *L. acidophilus* and *Bifidobacterium* species.

Key Words: Immunoglobulins, Microflora, Nucleosides, Piglets