
A 27 d growth trial was conducted with 320 segregated early weaned (SEW) barrows (initially 4.5 kg BW and 12 to 15 d of age) to evaluate the interactive effects between diet complexity, zinc oxide, and feed grade antibiotic on performance. The pigs were 10 d old and fed equal amounts of diet containing no antibiotic on the basis of initial weight to one of eight dietary treatments with five pigs per pen and eight replications per treatment. The experimental diets were fed in meal form in three phases (d 0 to 5, d 5 to 10, and d 10 to 20 postweaning, respectively). Treatments consisted of a 2 x 2 x 2 factorial arrangement with main effects of diet complexity, zinc oxide, and feed grade antibiotic. The remainder of the trial (d 20 to 27), a common diet not containing antibiotic or zinc oxide was fed to all pigs. The simple diets were corn-soybean meal based, while the complex diets contained dried whey, lactose, fish meal, spray-dried blood meal, and spray-dried animal plasma. The amounts of specialty products in the complex diets were decreased as pig weights increased. There were no interactions (P > .05) of main effects when measured over the entire trial. For the overall trial, pigs fed complex diets, regardless of zinc oxide or antibiotic, grew faster (P < .01) and ate more feed (P < .01) than did pigs fed the simple diet. pigs fed diets containing zinc oxide (ZnO: 100 ppm) exhibited greater ADG (P = .01) and ADFI (P = .06) than did pigs fed diets without antibiotic. Similar results were observed for pigs fed diets containing zinc oxide (ZnO: 100 ppm) and ADFI (P = .07). However, feed efficiency was not affected (P > .10) by treatment over the entire trial. The responses to antibiotic occurred in the latter half of the growth trial, while the response to zinc oxide was observed primarily during the first 10 d of the experiment. These data indicate that both zinc oxide and antibiotic are beneficial in the diets of SEW pigs.

Key Words: SEW pigs, Antibiotic, Zinc oxide


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There is increased interest in the nutritive value of goat milk and its suitability as an alternative milk substitute for human infants experiencing allergic responses to cow milk. A total of 22 crossbred intact male Yorkshire x Hampshire x Duroc pigs, 72-h old were used to compare the effect of goat or cow milk on weight gain, apparent nutrient digestibility, body composition, and blood chemistry. Pigs were allowed to receive colostrum from their dams prior to initiation of the study. They were housed separately in stainless steel metabolism cages. Fresh, nonfortified, goat milk was obtained from Ft. Valley Goat Research and Extension Center, and cow milk from The University of Georgia Dairy Research Farm. Pigs were randomly divided into two groups and assigned to receive pasteurized goat or cow milk at a predetermined level of 250 ml/kg BW per day for 28 d. A robotic-based semiautomatic feeding system was used to dispense the milk to each pig at 60 min intervals. Blood was taken by jugular puncture at 72 h, d 7, 14, 21, and 28. A balance trial was conducted during the last 3 d of the experiment. The pigs were randomly allotted to three groups determined on d 28, using dual energy x-ray absorptiometry (DXA; QDR-2000/W, Hologic Inc., Waltham, MA). Type of milk did not affect (P>0.05) weight gain, percent body fat, lean body mass, bone mineral content, or serum concentration of Zn, Na, and K. Apparent digestibility of DM, or retention of N, energy, Zn, Na, and K was not affected (P>0.05) by type of milk. Red blood cell and white blood cell (monocyte and neutrophil) counts were not affected (P>0.05) by type of milk. However, white blood cell (lymphocyte and neutrophil) count was higher (P<0.02) in pigs fed cow milk compared to those fed goat milk (13.95%10^3/µL vs. 6.55%10^3/µL and 8.81%10^3/µL vs. 4.71%10^3/µL, respectively). This study suggests that baby pigs perform well when fed both goat and cow milk. However, future studies will focus on identifying factors associated with an increase in white blood cell count.