

P064 **Disappearance of butyrate in the digestive tract of weanling and growing pigs fed diets containing different sources of butyrate.** K. Sotak^{1,*}, M. Song¹, H. Stein¹, S. Moreland², ¹*University of Illinois, Urbana-Champaign*, ²*Nutriad Inc., Elgin*.

In this study, disappearance kinetics of different sources of butyrate in diets fed to weanling and growing pigs was investigated. Weanling pigs (n = 24; 8.0 ± 0.5 kg BW) and growing pigs (n = 24; 96.8 ± 4.3 kg BW) were randomly allotted to 4 dietary treatments (6 pigs per treatment): 1) a control diet, 2) the control diet + 0.4% uncoated butyrate (UCB), 3) the control diet + 0.4% coated butyrate A (CBA), and 4) the control diet + 0.4% coated butyrate B (CBB). The dietary treatments were provided to pigs daily for 7 d at 3 times the estimated energy requirement for maintenance. On the last d of the experiment, all pigs were euthanized to collect samples from the stomach, duodenum, jejunum, ileum, cecum, and proximal and distal colon. Concentrations of DM and butyrate were analyzed in all samples. There was a similar pattern of the concentration of butyrate in the digestive tract of weanling and growing pigs, indicating that the concentration of butyrate was greater in the stomach than in the duodenum and jejunum, and gradually increased in the ileum. However, butyrate concentration was markedly increased in the cecum through the proximal colon and decreased in the distal colon. The concentrations of butyrate were greater in the small intestines of growing pigs than in weanling pigs. Weanling pigs fed the CBA and CBB diets had greater ($P < 0.05$) concentrations of butyrate in the jejunum (405 and 446 vs. 213 µg butyrate/g digesta DM) and ileum (1840 and 1915 vs. 979 µg butyrate/g digesta DM) compared with weanling pigs fed the control diet. Likewise, growing pigs fed the CBA and CBB diets had greater ($P < 0.05$) concentrations of butyrate in the stomach than pigs fed the control diet (779 and 779 vs. 441 µg butyrate/g digesta DM) than growing pigs fed the control diet. However, no differences were observed in the concentrations of butyrate in the other sections of the digestive tract of weanling and growing pigs among dietary treatments. In conclusion, the coated butyrate increased the concentrations of butyrate in gastric and intestinal contents of pigs, but the uncoated butyrate did not.

Key Words: absorption, butyrate, pigs