

Nonruminant Nutrition: Nutrients

T185 Effects of protein and sulfur AA concentration in diets fed to weaning pigs on growth performance and diarrhea incidence. T. C. S. Reis*¹, G. Mariscal-Landin², P. E. Urriola³, and H. H. Stein³, ¹*Universidad Autonoma de Queretaro, Queretaro, Mexico*, ²*INIFAB CENID Fisiologica, Queretaro, Mexico*, ³*University of Illinois, Urbana*.

A 3-wk experiment was conducted to measure the effect of dietary CP, Met, and Cys levels on pig growth performance, and incidence (ID) and severity of diarrhea (SD) during the post-weaning period. Sixty pigs were weaned at 23.9±3.6 d of age (initial BW: 7.48±0.50 kg) and allotted to 4 treatment groups based on sex, litter of origin, and BW. There were 3 pigs per pen and 5 pens per treatment. Four antibiotic-free diets were formulated. The HCP diet contained 23.58% CP, 0.34% Met, and 0.33% Cys. The LCP diet contained 17.64% CP, 0.25% Met, and 0.26% Cys. The HMet diet contained 16.95% CP, 0.32% Met, and 0.24% Cys. The HCys diet contained 17.68% CP, 0.26% Met, and 0.49% Cys. The ID was the number of days where diarrhea was observed within a pen. The SD was based on a daily visual fecal consistency score on a scale of 0 to 3. Results showed that for the entire 21-d period, no differences

in ADG or ADFI were observed among treatments. However, G:F were greater ($P < 0.01$) for pigs fed the HCP diet (0.656 kg/kg) than for pigs fed the LCP (0.501 kg/kg), the HMet diet (0.495 kg/kg), or the HCys diet (0.479 kg/kg). The ID in wk 1 was greater ($P < 0.01$) in pigs fed the HCP diet (4.6 d) than in pigs fed the other diets (2.0, 2.0 and 2.0 d, for LCP, HMet, and HCys diets, respectively). In week 2 and 3, no differences among diets were observed for ID. Pigs fed the HCys diet had lower ($P < 0.05$) ID (6.4 d) over the entire period than pigs fed the HCP diet (15.2d). The SD was greater ($P < 0.01$) in pigs fed the HCP diet during wk 1 than for pigs fed LCP, HMet, and HCys diets (0.94, vs. 0.34, 0.37, and 0.32, respectively). In wk 2, no differences in SD among treatments were observed, but pigs fed the HCys diet had the lowest ($P < 0.05$) SD in wk 3 (0.31) and over the entire period (0.33) compared with pigs fed the HCP, the LCP, and the HMet diets (1.17, 0.57, 0.66, and 1.04, 0.53, 0.55, respectively). In conclusion, pigs fed a HCP diet gained weight more efficiently, but had also greater incidence and severity of post-weaning diarrhea than pigs fed LCP, HMet, or HFCys diets. High levels of Cys in the diet reduce post-weaning ID and SD.

Key Words: pigs, diarrhea, dietary CP