

Assessment of growth performance and nutrient balance of early-weaned pigs fed diets containing spray dried corn distillers solubles by-products, carbadox, and porcine plasma. J. Knott* and G. Shurson, *University of Minnesota*.

Barrows (n = 63; 17-d of age) were used in a 10-d growth performance and nutrient balance trial. Pigs were housed in individual stainless steel metabolism crates to determine energy and N balance. Dietary treatments included: control diet (NC), NC + 15% condensed distillers solubles (DS), NC + 7.5% yeast cream (YC), NC + 15% residual solubles (RS), NC + 55 ppm carbadox (AB), NC + 6% porcine plasma (PP), and NC + AB + PP (PC). All diets were formulated to 1.60% total lysine, 3440 kcal/kg of metabolizable energy, 0.87% Ca, and 0.80% P. Growth performance (ADG, ADFI, G:F) was determined during the first 10-d period in which pigs had ad libitum access to feed. After the initial 10-d period, pigs were weighed and their daily feeding level was standardized to 4% of their body weight, fed in two equal meals. After a 5-d acclimation period, total feces and urine were collected and analyzed to determine the effects of treatment on energy and N balance. Pigs fed the PP and PC diets tended to have higher ADG ($P = 0.10$) and had higher ADFI ($P < 0.05$) compared to pigs fed the NC and DS diets, but G:F was not affected. Pigs fed the PP diet also had higher ADFI ($P < 0.05$) compared to pigs fed the YC, RS, and AB diets. Daily fecal, urinary, and total N excretion was not affected by treatment. However, pigs fed the RS, AB, and PC diets tended to retain more N ($P = 0.10$) compared to pigs fed the NC and YC diets. Urinary and fecal energy excretion was not affected by treatment. However, the YC and PP diets had lower digestible and metabolizable energy ($P < 0.05$) compared to the DS and RS diets. Results from this study suggest that feeding diets containing distillers solubles by-products resulted in similar growth performance compared to pigs fed the negative control and carbadox diets, but poorer performance compared to pigs fed PP and PC diets. The high digestible and metabolizable energy value of the DS and RS diets, along with N retention, suggests that DS and RS are acceptable alternative ingredients in phase 1 nursery diets.

Key Words: distillers solubles, nutrient balance, early-weaned pigs

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