(119.3 to 126.1 kg), HCW (87.2 to 92.7 kg), backfat depth (16.9 to 18.3 mm), and feed cost/pig ($71.92 to $80.58). When HCW was used as a covariate, FFLI of pigs using a WD feeder decreased (linear, $P < 0.02$; 50.2 to 49.5) with increased feeder opening. An increased setting of a CD feeder had no effect on growth and carcass characteristics. In conclusion, the growth rate of pigs improved with a WD feeder compared with a CD feeder; however, growth of pigs using a WD feeder was more sensitive to differences in feeder adjustment.

Key Words: dry feeder, feeder adjustment, wet-dry feeder

256 (Invited ASAS Animal Science Young Scholar) The effects of a wet-dry vs. a conventional dry feeder, and feeder management strategies, on the growth performance and carcass characteristics of finishing pigs. J. R. Bergstrom,* M. D. Tokach, S. S. Dritz, J. L. Nelssen, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan.*

Research has shown that ADG and ADFI of finishing pigs may be improved with a wet-dry (WD) feeder compared with a conventional dry (CD) feeder. In a factorial experiment, we found ADG of pigs fed a diet with 60% DDGS using a WD feeder was 5% greater than that of pigs fed a diet with 20% DDGS using a CD feeder. Gilts fed with a WD feeder also had 5% greater ADG than that of barrows fed with a CD feeder. Although greater ADG and ADFI have been observed with a WD feeder, differences in G:F and carcass characteristics have been variable when compared with a CD feeder. Earlier experiments have reported that G:F was either similar or improved with a WD feeder, with no change in percent carcass lean. In recent experiments, we have observed variable responses in G:F and similar or greater backfat depth with a WD feeder. Generally, G:F was improved with a WD feeder in the early grow-finish period. When G:F was poorer with a WD feeder, it usually occurred late in the finishing period, particularly when pigs were fed to a heavier BW. In a series of experiments, we identified WD feeder management strategies that sustained improvements in growth over a CD feeder with similar G:F and carcass traits. Reduced settings of the WD feeder opening usually resulted in improvements in G:F, FFLI, and backfat depth, and reductions in ADG and ADFI. Performance of pigs fed with a CD feeder was not as sensitive to different feeder settings. By providing a more open initial setting for the WD feeder and reducing the setting later in the finishing period, backfat depth and FFLI were improved with minimal reductions in overall ADG and ADFI. Although there were no differences in G:F; ADG, ADFI, and final BW remained greater than that obtained with a CD feeder. In another experiment, switching to a source of water separate from the WD feeder at 4 or 8 wk before market resulted in reduced ADG and ADFI. When the water was switched for the final 8 wk, G:F and backfat depth were improved, but overall ADG was reduced to that obtained with a CD feeder. In conclusion, a WD feeder improved ADG and ADFI, and may be especially beneficial when feeding gilts and/or diets known to reduce ADG. However, differences in the management of a WD feeder had a much greater impact on performance and profitability.

Key Words: dry feeder, feeder adjustment, wet-dry feeder

257 Both weaning weight and post-weaning growth performance affect nutrient digestibility and energy utilization in pigs. C. K. Jones,* R. G. Main, N. K. Gabler, and J. F. Patience, *Iowa State University, Ames, IA, USA.*

Little is known about how dietary energy and nutrient availability changes due to variations in piglet weaning weight or its interaction with post-weaning growth performance. This experiment evaluated the effects of both pig weaning weight category (WW) and post-weaning average daily gain (ADG) on nutrient digestibility and energy utilization. A total of 96 PIC barrows were selected from a population of 960 weanling pigs to represent the 10% lightest, median, and heaviest pigs at weaning (n = 24 per WW category; BW = 4.6, 6.2, and 8.1 kg, respectively). Barrows were housed individually and were fed ad libitum quantities of a commercial nursery phase feeding program during a 27-d growth and metabolism study. Total urine and fecal grab samples were collected for 3 d at the end of the experiment for digestibility analyses. At the completion of the study, pigs in each WW category were divided into the slowest, median, or fastest 33% ADG category, yielding a nested design with 9 treatments. The digestibility of dry matter, nitrogen, and gross energy differed ($P \leq 0.01$), resulting in different ($P \leq 0.004$) DE and DE intakes across WW and ADG categories. Pigs with lighter WW and slower ADG within WW category had lower ($P < 0.0001$) energy requirements for maintenance and were more ($P < 0.0001$) efficient at converting energy into gain. Together, these data suggest that both weaning weight and post-weaning growth performance affect nutrient digestibility and nutrient utilization in nursery pigs.

Table 1.

	DM Dig., %	GE Dig., %	N Dig., %	DE, Mcal	DEi, Mcal/d	DEm, Mcal	Energy efficiency for gain, Mcal/kg of gain
Light WW							
–Slow ADG	84.1	85.2	81.3	3.47	1.47	0.76	1.79
–Median ADG	86.4	87.5	84.9	3.56	2.15	0.95	2.34
–Fast ADG	85.9	86.9	84.6	3.54	2.39	1.02	2.40
Median WW							
–Slow ADG	85.1	85.8	81.9	3.50	1.60	0.89	1.18
–Median ADG	86.2	87.4	85.3	3.56	2.49	1.08	2.41
–Fast ADG	84.6	85.8	82.0	3.50	2.96	1.19	2.66
Heavy WW							
–Slow ADG	85.8	86.9	84.1	3.54	2.33	1.05	2.32
–Median ADG	85.9	86.8	84.5	3.54	2.69	1.21	2.34
–Fast ADG	85.4	86.4	84.0	3.52	3.06	1.31	2.39
SEM	0.72	0.70	1.16	0.029	0.135	0.033	0.297

Key Words: Energy, Nutrient digestibility, Pig