for DM, N and energy digestibility. With decreasing DCAD, ADFI decreased linearly ($P \leq 0.05$). No significant differences were observed regarding BW, BW gain or G:F for either 50 or −225; however, −450 resulted in lower ($P \leq 0.05$) BW, BW gain and G:F. No significant differences between treatments existed for DM and energy digestibility, or blood pH. Urine pH decreased ($P \leq 0.05$) as the DCAD within the diet decreased. Nitrogen digestibility was higher ($P \leq 0.05$) for −225 and −450, than 50. The results of this study indicate that implementing DCAD in the diets of group housed replacement gilts may be an effective method of limiting ADFI.

Key Words: group housing, sow self feeding, dietary cation-anion difference

15 The effect of myostatin genotype on body temperature during extreme temperature events. J. T. Howard*, M. K. Nielsen, T. Mader, and M. L. Spangler, *University of Nebraska, Lincoln.*

Extreme heat and cold events can create physiologic changes as cattle attempt to cope with temperature related stress. However, the genetic background of animals can influence their response to these events. The objective of the experiment was to evaluate the effect of the myostatin genotype (MG) on body temperature. Two groups of heifers (n = 120) and 2 groups of steers (n = 119), both crossbred, with either 0, 1, or 2 copies for the MG were placed in a feedlot over 2 summers (2010 and 2011) and 2 winters (2010–2011 and 2011–2012). Tympanic and Vaginal temperature (C°) logging devices were placed in the steers or heifers, respectively, for 5 d during times of anticipated heat and cold stress. The mean (±SD) of the summer and winter stress events were 24.4 (±4.64) and −3.95 (±12.16), respectively. A Fourier series transformation was used to describe a diurnal cyclical pattern. Analysis was done with temperature as the dependent variable and day, MG, and Fourier series cycles as fixed effects and animal as a random effect. A 24-h and 12-h (Model 1) cycle described the cyclical pattern for most environments, but a 24-h, 16-h, 12-h, and 8-h (Model 2) cycle was more effective at describing the extreme cold stress cyclical patterns. A MG interaction with cycle length was significant for at least the 24-h cycle ($P < 0.0275$) for both Model 1 and 2. The animal variance and repeatability across each group and stress event ranged from 0.035 to 0.18 and 0.15 to 0.64, respectively. The Fourier series fitted effectively describes the body temperature of cattle in the current study. The interaction of the MG and components of the Fourier series suggests that a genotype, represented by myostatin, by environment interaction exists for body temperature. More work in this area needs to be done to determine if a function of body temperature could be a useful physiological indicator of economically relevant traits and to determine the genetic component of the indicator trait identified.

Key Words: beef cattle, body temperature, myostatin

16 Effects of lowering dietary NDF levels prior to marketing on finishing pig growth performance, carcass characteristics, carcass fat quality, and intestinal weights. M. D. Asmus*, J. M. DeRouchey, J. L. Nelssen, M. D. Tokach, S. S. Dritz, R. D. Goodband, and T. A. Houser, *Kansas State University, Manhattan.*

A total of 264 pigs (41 kg BW) were used in a 90-d study to determine the effects of feeding high NDF diets and their withdrawal time on growth performance, carcass characteristics, fat quality, and intestinal weights of finishing pigs. Pens were allotted to 1 of 6 treatments (6 pens/treatment). Treatments were arranged in a 2 × 2 plus 2 factorial with the main effects of withdrawal time (23 or 47 d) and NDF level fed during the withdrawal (low or medium). Controls were a corn-soybean meal diet or diet with 30% DDGS and 19% wheat middlings with no withdrawal. The NDF levels were 9.3, 14.2, and 19.0% in the low, medium, and high NDF diets. Increasing withdrawal duration decreased overall ADFI (linear, $P < 0.03$) and improved G:F (linear, $P < 0.004$); however, ADG was not affected. Withdrawing the high-NDF diet for the last 23 d did not influence ($P > 0.61$) growth performance. Withdrawing the high-NDF diet improved ($P < 0.004$) carcass yield and decreased (linear, $P < 0.01$) large intestine weights with a greater response ($P < 0.04$) when the low NDF diet was fed during the withdrawal. Increasing withdrawal time from 23 to 47 d did not further improve yield ($P = 0.11$) or decrease ($P = 0.20$) large-intestine weights. Jowl fat iodine value (IV) decreased (linear, $P < 0.01$) as withdrawal time increased and was lower ($P < 0.001$) when the low-NDF instead of medium-NDF diet was fed. Increasing the duration that the low-NDF diet was fed increased ($P < 0.01$) backfat depth and tended ($P < 0.11$) to decrease percentage lean. Withdrawing pigs from a high-NDF diet before market improved G:F, carcass yield, IV, and reduced large intestine weight; however, the optimal length of withdrawal depends on the response criteria targeted.

Table 1

Treatment:	1	2	3	4	5	6	
d 0 to 43:	Low	High	High	High	High	High	
d 43 to 67:	Low	Low	Med	High	High	High	
Item d 67 to 90:	Low	Low	Med	Low	Med	High	SEM
ADG, kg	0.89	0.90	0.91	0.90	0.89	0.89	0.011
G:F	0.35	0.34	0.34	0.33	0.33	0.33	0.004
Final BW, kg	120.6	122.1	122.8	121.9	121.5	121.6	1.403
Carcass yield, %	73.2	72.9	71.6	73.0	72.4	71.7	0.265
HCW, kg	88.3	89.0	88.0	88.9	88.0	87.0	1.154
Backfat depth, mm[1]	18.8	18.4	17.5	18.3	18.9	16.8	0.448
Lean, %[a]	53.0	53.4	53.6	53.3	52.7	54.0	0.311
Jowl IV	68.4	70.6	75.8	74.9	76.6	78.5	0.942

[1]Adjusted to a common HCW.

Key Words: DDGS, NDF, wheat middlings, withdrawal

17 Equine grazing preference and persistence of cool-season grasses. E. Allen*, C. Sheaffer, and K. Martinson, *University of Minnesota, St. Paul.*

The objective was to evaluate horse grazing preference and persistence of 11 cool-season grasses. Research was conducted during 2010 and 2011 in St. Paul, Minnesota. The experimental design was a randomized complete block with 4 replications. Grasses included tall fescue (*Schedonorus phoenix*), meadow fescue (*Festuca pratensis*), quackgrass (*Elymus repens*), smooth bromegrass (*Bromus inermis*), meadow bromegrass (*Bromus biebersteinii*), reed canarygrass (*Phalaris arundinacea*), perennial ryegrass (*Lolium perenne*), timothy (*Phleum pretense*), Kentucky bluegrass (*Poa pratensis*), creeping foxtail (*Alopecurus arundinaceaus*), and orchardgrass (*Dactylis glomerata*). Four adult horses were grazed for 8 h each day for 2 consecutive days each month from May to October in 2010 and May to September in 2011. Ground cover before grazing was measured between 0 (no ground cover) and 100 (100% ground cover) to determine persistence. Grass removal was visually assessed after grazing on a scale of 0 (no grazing) to 100 (100% grazed) to determine preference. Data were analyzed using PROC MIXED and ANOVA procedures of SAS. Results differed between years ($P < 0.01$) and are presented as season-long