

only on visual appraisal. The MOGQBC show is open to 4-H, FFA or adults and combines visual appraisal with fat-free lean gain (FFLG) and pork quality [color (L*), pH (24 hr), loin muscle tenderness (Warner-Bratzler shear force, WBSF) and marbling (1 to 6 scale)]. The visual score accounts for 20%, FFLG accounts for 40% and each of the four pork quality attribute accounts for 10% of the total score. MOGQBC is designed for swine exhibitors that want to show industry style pigs and involved more than 50 youth and adult producers. Exhibitors weighed pigs on test in April with a limit of 10 pigs/person. At the state fair, exhibitors can only show 4 pigs/person. From 2003 to 2007, the number of pigs exhibited at the state fair has increased from 42 hd to 107 hd and FFLG has improved from 0.31 kg/d in 2003 to 0.35 kg/d with no change in percent lean (55.5 %). In 2007, loin muscle tenderness was evaluated. The average WBSF was 3.65 kg ranging from 2.49 to 4.97 kg. There were eight breeds represented in MOGQBC which were Berkshire (n=3), Chester White (n=8), Duroc (n=18), Hampshire (n=2), Landrace (n=2), Spot (n=1), Yorkshire (n=9) and crossbred (n=61). Duroc and Yorkshire barrows had greater ADG during the 122 day test period compared to Berkshire, Chester White, and crossbred ($P < 0.05$). The highest FFLG was observed in the Duroc and Yorkshire at 0.364 and 0.365 kg/d, respectively ($P < 0.05$) compared to Berkshire. Berkshire had smaller loin eye area than Yorkshire, Duroc and crossbred ($P < 0.05$). Duroc had the highest 24 hr loin pH compared to all other breeds ($P < 0.05$). Berkshire had the lowest WBSF at 3.18 kg ($P < 0.05$). There were no growth performance measurements viable for determination of shear force with R² less than 0.06. Production barrow shows are an excellent tool to educate youth and adults about the pork they produced and allow them to make management decisions that are most relevant to the swine industry.

Key Words: Barrow, Lean gain, Pork quality

77 Impact of weaning weight and early postweaning growth of pigs to late finishing growth when fed either corn-soybean meal based diets or low nutrient excretion diets. A. Schinckel*, B. Richert, D. Sholly, J. Radcliffe, and M. Einstein, *Purdue University, West Lafayette, IN.*

The BW growth of 1385 barrows and gilts was evaluated from 21 d weaning to 130 kg BW. The pigs were assigned to a 2 × 2 factorial arrangement of treatments. The pigs were fed a series of either standard corn-soybean meal based control diets (CON) or low nutrient excretion (LNE) diets from one week postweaning to 130 kg BW and assigned to either deep pit or pull-plug manure storage treatments. The pigs were weighed at weaning, 7 and 14 d postweaning, and biweekly intervals after 28 d postweaning. Mixed model nonlinear equations including pig specific random effects were evaluated for the Generalized Michaelis-Menten (GMM) function ($R^2 = 0.998$, $RSD = 1.71$ kg). The serial postweaning BW data for each sex-treatment group was fit to the GMM equation. The relationships of weaning BW to late finishing BW's and days to 125 kg BW were different for each dietary treatment ($P < 0.05$). Late finishing BW's and days to 125 kg BW had nonlinear relationships with weaning BW for pigs fed the LNE diets, and linear relationships for the CON pigs ($P < 0.05$). A one kg change in BW for CON pigs at weaning, 7, 14 and 28 d postweaning ($P < 0.01$) was predicted to reduce days to 125 kg BW by 3.71, 3.99, 3.30 and 2.26 d, respectively. Increasing the weaning BW of the lightest pigs fed the LNE diets had a greater impact on subsequent BW's than increasing the BW of pigs with average to above average weaning BW ($P < 0.05$).

Pigs with greater weaning BW's and greater early postweaning ADG's required less days to achieve target market BW's.

Key Words: Mixed effects model, Nonlinear growth functions, Pig growth

78 Effect of birth weight on growth, composition, mortality and endpoint value. J. S. Fix* and M. T. See, *North Carolina State University, Raleigh.*

Piglets (n = 1472) were individually identified and weighed within 24 h of birth to examine the effect of birth wt on growth, composition, mortality and endpoint value. Sows (n = 217) mated via pooled semen from 3 sire lines, resulted in 163 litters. The commercial sow farm experienced a clinical PRRS outbreak during the trial and used a high level of crossfostering which may have contributed to the severity. Pigs were weaned at approximately 18 d of age. At weaning 421 pigs were transported to the NCSU Swine Evaluation Station (SES) and BW was measured. The remaining pigs were transferred to three commercial nurseries. At approximately 66 d of age all pigs at SES were weighed and placed in pens of 4. All pigs in commercial nurseries were placed in pens of 20 at a commercial finisher (COMF). Mortality was evaluated for all pigs born upon finisher placement. At both facilities pigs were grouped by sex and sire line and fed the same diets. At the beginning of finish phase BW was recorded on all pigs at SES and ten randomly selected pigs from each pen at COMF. At 178 d of age BW was collected on pigs previously weighed. Also, 10th rib fat depth (BF) and longissimus dorsi area (LMA) were measured with real-time ultrasound and adjusted to 113.4 kg BW. At time of final BW a value was given to all pigs (2 = dead; 1 = BW < [mean BW - one SD]; 0 = BW > [mean BW - one SD]). This was done to simulate levels where price discounts based on wt occur at local packing plants. Birth wt ranged from 0.45 to 2.45 kg, with a mean of 1.28 kg. A 1 kg increase in birth wt resulted in increases of 0.53 kg ($P < 0.01$) BW at weaning, 2.33 kg ($P < 0.01$) BW at finisher placement and 6.25 kg ($P < 0.01$) at final BW. Neither BF nor LMA were affected ($P > 0.05$) by changes in birth wt. A 1 kg increase in BW resulted in an increase in the odds of survival at finisher placement (9.77; $P < 0.01$) and of a pig being full value at harvest (5.19; $P < 0.01$). These findings indicate that increases in piglet birth wt resulted in increased BW at weaning, entering the finisher, and marketing. The odds of survival to finisher placement and odds of being full value at harvest were greater for heavier birth wt piglets.

Key Words: Pig, Birth weight

79 Validation of flank-to-flank allometric equations in predicting weight of lactating sows and lactation weight change. R. C. Sulabo*, M. D. Tokach, S. S. Dritz, E. J. Wiedemann, R. D. Goodband, J. M. DeRouchey, and J. L. Nelssen, *Kansas State University, Manhattan.*

Objectives of this study were to validate the use of flank-to-flank measurement in predicting weight of lactating sows and to determine if the allometric model developed for growing pigs, gestating sows, and boars can be used to accurately estimate weights of lactating sows and lactation weight change. A total of 70 lactating sows (PIC Line 1050) were weighed after farrowing and at weaning. A cloth tape was used to measure the distance from the base of the flank on one side over