A total of 498 steers (460 lbs) sourced from livestock markets in Oklahoma and Texas were utilized in a study to compare commonly used anthelmintics on 14-d fecal egg count reduction and 42-d average daily gain. Upon arrival, steers were commingled in one trap and fed ad libitum rye hay until commencement of the study. Steers were then randomly assigned to one of three treatments: no anthelmintic (control), injectable ivermectin (Ivomec 1%), or ivermectin with concurrent fenbendazole drench (Safe-Guard), and all administered per label directions.

Treatments were administered at the initiation of the study, and steers were weighed, vaccinated and sorted by treatment to one of ten 5.4-acre grass traps. Traps contained 49 or 50 steers each (4, 4 and 2 traps for the ivermectin with concurrent fenbendazole drench, ivermectin and control treatments, respectively). Fecal samples were collected from all steers per rectum on day 1 and 14. Pen fecal egg count reduction was calculated with pen mean egg counts as \( \frac{(day\ 1 - day\ 14)}{d\ 1} \).

- No difference was observed for day 1 fecal egg counts (68, 78 and 65 eggs/g for control, ivermectin and concurrent fenbendazole drench and ivermectin treatments, respectively).
- Anthelmintic affected 14-day fecal egg count reduction (9%, 99% and 36%, respectively for control, ivermectin with concurrent fenbendazole drench and ivermectin).
- Forty-two day average daily gain was not different among anthelmintic treatments (1.50, 1.87, 1.81 lb/d, respectively for control, ivermectin with concurrent fenbendazole drench and ivermectin).
- Further, using the 431 animals in which all fecal egg count and body weight data were available, 14-day fecal egg count reduction and 42-day average daily gain were correlated. Fecal egg count at day 1 was not correlated with average daily gain; however, day14 fecal egg count was correlated with average daily gain.

Ivermectin alone was not able to maximize 14-day fecal egg count reduction; however, ivermectin with concurrent fenbendazole drench was 99% effective. Additional data is needed to determine how fecal egg count affects average daily gain of stocker steers.
The objective of this field study was to determine the impact one mating of high carcass value Angus sires could have on the carcass quality and carcass value of progeny from cows representing the southern U.S. environment. Twelve southern bred dams (¼ to ½-breed visual Bos indicus influence) were purchased in 2009 to serve as embryo-producing dams. These dams produced 112 progeny (59 Angus-sired and 53 by southern bulls) that were fed at a commercial Kansas feedlot in spring-summer and harvested in 2011 and 2012. Semen from three Angus bulls, selected by carcass merit, and eight southern sire breeds, randomly selected on available semen (one sire each from Beef Master, Red Brangus, Santa Gertrudis, Simbrah, Charbray, Brahman, Senepol and Braford), were used to fertilize embryos. All semen originated from bulls available in commercial AI companies or individual seedstock breeders. Recipient dams receiving embryos were all of common genetics. All resulting progeny were managed within the same environment from birth to harvest. Post-weaning calves grazed wheat pasture before being placed in feedlot. Calves were harvested at 735 days of age (year 1) and 752 days of age (year 2). Complete carcass data was gathered at harvest.

- Angus-sired calves had a 5-day shorter gestation length, 8.6-lb lighter birth weight, similar weaning weight and were 64.2 lb heavier as yearlings.
- Carcasses resulting from Angus-sired matings had an increased marbling score of 78 points, carcass weights were 47.2 lb heavier and had 0.1 inch more fat thickness with no significant yield grade difference.
- Seventy-seven percent of Angus-sired carcasses graded Choice compared to 25% of the carcasses from southern sires.
- Grid premium advantage was $56.99 per head for Angus-sired calves, and a $73 per animal net economic advantage was observed when carcass weight, net carcass price and feed costs were combined ($117 carcass value advantage minus $44 added feed costs).

Using one cross of high carcass value Angus genetics significantly increased carcass quality, resulting in an increased net economic advantage.

### Population and Price Differences for Sale Barn-Markedeted Calves in 2000, 2005 and 2010 Due to Genetically-Influenced Phenotype

(M. S. Gadberry and T. R. Troxel, University of Arkansas)

This study examined phenotypic influence, associated with genetics, on calf selling price discounts and premiums in 2000, 2005 and 2010, a period when the U.S. calf crop declined 293,000 calves per year. Data was collected at 10 weekly sale barn locations in Arkansas. The mean selling price was $93.94, $117.00 and $109.12 for 2000, 2005 and 2010, respectively. Genetically-influenced characteristics included gender, horn status, USDA muscle score, USDA frame score, color and apparent breed composition. The price received ($/cwt) was standardized within year (mean = 0). Data were analyzed for population changes by chi-square analysis, and a generalized linear model was used to estimate the standardized price response to year and calf characteristic. The maximum sample size was 137,894 (62,058, 43,286 and 32,550 for 2000, 2005 and 2010, respectively).

- Steers and bulls received the greatest premium in 2010 ($8.21 and $1.38) and heifers the greatest discount in 2010 (-$5.79).
- The percentage horned declined year-over-year and the discount for horned calves was greatest in 2010 (-$4.25).
- Muscle score 1 and 2 values were greatest in 2005 ($2.75 and -$5.40), intermediate in 2010 ($2.21 and -$5.91) and least in 2000 ($0.51 and -$8.49).
- The percentage large-frame calves was greatest in 2005 (66%), intermediate in 2010 (60%) and least in 2000 (56%).
- The premium for large-frame calves was greatest in 2010 ($0.74), and the premium for medium-frame calves was greatest in 2005 ($1.32).
• The percentage straight Angus calves increased 160% and the percentage solid black calves increased 69% for year 2010 compared to 2000.

• The percentage red and red white-face calves decreased for year 2010 compared to 2000.

• The premium for black and black white-face did not differ between 2005 and 2010 but was greater than 2000.

• Spotted and striped calves received the greatest discount in 2010 (-$14.58).

The results indicate discounts do not decrease among all genetically selectable calf phenotypic traits, even when calf supplies are declining.

**Population and Price Differences for Sale Barn-Marketed Calves in 2000, 2005 and 2010 Due to Management-Influenced Phenotype**

(M. S. Gadberry and T. R. Troxel, University of Arkansas)

This study examined phenotypic influence, associated with management, on calf selling price discounts and premiums in 2000, 2005 and 2010, a period when the U.S. calf crop declined 293,000 calves per year. Data was collected at 10 weekly sale barn locations in Arkansas. The mean selling price was $93.94, $117.00 and $109.12 for 2000, 2005 and 2010, respectively. Management-influenced characteristics included selling in groups, fill, condition and health. The price received ($/cwt.) was standardized within year (mean = 0). Data were analyzed for population changes by chi-square analysis, and a generalized linear model was used to estimate the standardized price response to year and calf characteristic.

The maximum individual calf sample size was 137,894 (62,058, 43,286 and 32,550 for 2000, 2005 and 2010, respectively).

• The proportion of calves sold as singles decreased from 82.4% (2000) to 74.8% (2010).

• The premium for calves sold in groups was similar in 2005 and 2010, but both were greater than 2000.

• The discount for calves sold as singles was greater in 2000 (-$0.86) compared to 2010 (-$0.42).

• The discount for full and tanked calves was similar in 2005 and 2010 but greater than the discount in 2000.

• Calves in very thin condition were discounted the greatest (-$8.66) in 2010, and fleshy calves were discounted the greatest in 2005 (-$5.78).

• The discount for fat calves did not differ between 2005 (-$17.87) and 2010 (-$12.38) but both were greater than the discount of 2000 (-$5.67).

• Most calves were identified as healthy among years (> 95%).

• The discount for sick calves did not differ among years. Calves exhibiting dead hair coat or stale appearance were discounted similarly in 2005 and 2010 which were greater than those of 2000.

• Preconditioned cattle received a greater premium in 2010 ($6.84) compared to 2005 ($4.68).

The results indicate buyers discounted undesirable management characteristics and were willing to spend more for preconditioned cattle during a period of declining calf supplies.

**Milk Production Traits of Beef Cows as Affected by Horn Fly Numbers and Breed Type**

(Mays et al., University of Arkansas, Fayetteville, Grazinglands Research Laboratory, USDA-ARS, El Reno, Oklahoma, and Animal Science, Oklahoma State University, Stillwater, Oklahoma)

Horn flies negatively impact profitability traits of cattle. Increased resistance to pesticides has led to the evaluation of current production methods. Cows sired by Bonsmara (n=7), Brangus (n=13), Charolais (n=8), Gelbvieh (n=5), Hereford (n=12) and Romosinuano (n=8) from Brangus dams were used to determine breed differences in horn fly count and effect of horn fly count on milk yield and quality. Total horn fly count and milk yield estimates were collected every 28 days from May to October. Milk weight was adjusted to 24-hour milk yield. Horn fly counts were transformed to natural log fly count prior to analysis. Data for milk yield and quality and horn fly count were analyzed by mixed model least squares using a linear model including breed group, cow
in breed group (random), month (repeated), month x breed and a linear covariate for calf birth date. Effects of horn fly count on milk yield and quality were estimated by including linear covariate of log fly count and log fly count x breed group.

- Horn fly counts varied over time, with lowest population recorded in May (94 flies) and peaking in August (503 flies).
- Bonsmara and Gelbvieh had greater milk yield compared to Hereford (19.2 and 19.0 vs. 13 lb/day, respectively), with Charolais, Romosinuano and Brangus intermediate (16.1, 15.4, 15.2 lb/day, respectively).
- An effect of breed type x log fly count affected milk yield. Milk yield was reduced by 2.18 and 1.41 lb/day per unit increase in log fly count in Gelbvieh and Bonsmara.

**Influence of Body Weight of Cows on Weaning Weight of Calves in Two Lines of Angus Cattle in Alabama**

(Kuhlers et al., Animal Sciences, Auburn University, Auburn, Alabama, Regional Office, Alabama Cooperative Extension, Experiment Station, Tennessee Valley Research and Extension Center, Belle Mina, Tennessee)

Beef cattle producers are often puzzled and like to know whether large cows are economically more efficient than small cows in their cow-calf operation. The objective of this study was to examine the influence of body weight of cows on 205-day weaning weight of calves and cow efficiency from two lines of cows, namely, small to medium frame and medium to large frame. Lines were established based on mature cow size (weight, height and age of cow) from a base population of Angus herd. Cow efficiency was defined as ratio of 205-day adjusted weight of calf per unit of cow body weight for each cow-calf pair. Cows were mated in single-sire breeding groups in four pasture paddocks using two bulls per line that were selected on EPDs for mature height and milk. Calves were not creep-fed and each year a few older or open cows were culled and selected replacement heifers based on their frame size were added into respective lines. Data on 373 calves weaned during 2006-2012 and body weight of their respective dams selected for frame size in respective lines, small to medium frame (n=225) and medium to large frame (n=148), were analyzed using GLM procedure in SAS. The linear statistical model used for analyses of 205-day weaning weight and cow efficiency included fixed effects of weaning year, line, sex of calf, age of cow and their interactions while body weight of the cow was a covariate within subclass.

- Means for 205-day adjusted weight of calves (medium to large frame = 487.1 vs. small to medium frame = 497.5 lb) and for cow efficiency in small to medium frame line (40.5%) were higher compared to the medium to large frame line (39.7%).
- Regression of 205-day adjusted weight of calves on body weight of cows was significant. The estimate showed an increase in body weight of cows by 221 lb would increase the 205-day adjusted weight of calves by 10.8 lb. Difference between the estimates of regressions between lines was not significant.
- Regression of cow efficiency on body weight of cows was negative across lines indicating that cow efficiency goes down calves as well as cow efficiency.
- Influence of sex of calf on 205-day adjusted weight and cow efficiency were significant.

Larger cows may wean heavier calves, but the unit of increase of 10.8 lb/221 lb increase in BW of cow may not be economically efficient.

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