Beef Species: Beef Cattle Production

W22   Factors affecting the selling price of calves sold in Texas livestock markets. K. J. Stutts, M. M. Beverly*, S. F. Kelley, and B. M. Freel, *Sam Houston State University, Huntsville, TX.*

Most cow-calf producers in Texas market their calves through local livestock auctions. When calves enter the sale ring, buyers must rapidly assess many physical and management factors to determine a value for the calves. The objective of this study was to determine which factors affect the selling price of calves in Texas livestock markets. Data were collected from 9 Texas livestock auctions on 1,420 lots consisting of 7,073 head. The data collected included gender, weight, breed type, color, muscle thickness, horn status, frame score, fill, condition, health, and selling price. An ANOVA was performed using SPSS. Calf characteristics were analyzed individually as dependent variables in which the model included BW as a covariate. Least squares means were generated for each variable and separated based on predicted differences. All selling prices are reported in US dollars per 45.45 kg of BW. Selling prices for steers ($132.34), heifers ($118.46), and bulls ($107.63) were different from each other ($P < 0.01$). Polled calves ($127.78) sold for a higher ($P < 0.01$) price than horned ($104.91) calves. Regarding breed type, British calves ($128.440) sold for the highest ($P < 0.03$) price, and calves that appeared to be predominantly American ($111.08) received the lowest price. Black ($122.51) calves sold for a higher ($P < 0.02$) price than red ($117.67) or yellow ($115.29) calves. Calves advertised as preconditioned ($131.38) and healthy ($121.27) calves sold for the highest ($P < 0.01$) price, and calves that were sick ($86.14) sold for the lowest ($P < 0.01$) price. Selling price of calves increased incrementally as lot size increased. Calves sold in groups of 20 or more ($129.07) had the highest ($P < 0.01$) selling price and calves sold as singles ($109.03) had the lowest selling price. These results indicate that many factors affect the selling price of calves in Texas livestock auctions. Some of these factors are associated with management and others are genetic. Producers could increase the value of their calves by changing their management strategy and through selection or modification of their breeding objectives.

Key words: feeder cattle, livestock auction, selling price

W23   Sources of sire-specific genetic variance for birth weight and weaning weight in the Bruna dels Pirineus beef cattle breed. M. Fina*[1], L. Varona[2], J. Piedrafita[1], and J. Casellas[1], *[1]G2R, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra, Spain, [2]Departamento de Anatomía, Embriología y Genética Animal, Universidad de Zaragoza, Zaragoza, Spain.*

The Bruna dels Pirineus is an autochthonous beef cattle breed reared under traditional valley-mountain grazing systems in the Pyrenees Mountains of Catalonia (Spain). The breeding program of the Bruna dels Pirineus focused on birth weight (BWT) and weaning weight standardized to 185 d (WW185) since its implementation in 1990. Within this context, our analyses were performed on 8,130 BWT and 1,245 WW185 records from 12 and 2 purebred herds, respectively, collected between years 1986 and 2010. All animals included in the study were registered in the Yield Recording Scheme of this breed. This research investigated 2 sources of sire-related genetic effects on BWT and WW185, the influence of genes located in the non-autosomal region of the Y chromosome and the effect of paternal imprinting. Both BWT and WW185 were analyzed using a univariate Bayesian linear animal model and the relevance of paternal imprinting and Y chromosome-linked effects were checked by the deviance information criterion (DIC). In addition to sire-specific and direct genetic effects, our model accounted for random permanent effects (dam and herd-year-season) and 3 systematic sources of variation, sex of the calf (male or female), age of the dam at calving (2, 3, 4, 5, 6 and > 6 years), and birth type (single or twin). Both traits evidenced remarkable effects from the Y chromosome, whereas paternal imprinting was only revealed in WW185. Note that differences in DIC between the preferred model and the remaining ones exceed 39,000 and 2,800,000 DIC units for BWT and WW185, respectively. It is important to highlight that Y chromosome accounted for ~2% and a ~6% of the total phenotypic variance for BWT and WW185, respectively, and paternal imprinting accounted for ~13% of WW185 phenotypic variance. These results revealed 2 relevant sources of sire-specific genetic variability with potential contributions to the current breeding scheme of the Bruna dels Pirineus beef cattle breed.

Key words: Bruna dels Pirineus, paternal imprinting, Y chromosome

W24   Relationships between feed efficiency traits and body weight, age, backfat, rumpfat and circulating serum metabolites in pregnant beef cows. K. M. Wood*[1], Y. R. Montanholi[1], B. W. McBride[1], and K. C. Swanson[2], *[1]Dept. of Animal and Poultry Science, University of Guelph, Guelph, Ontario, Canada, [2]Dept. of Animal Sciences, North Dakota State University, Fargo.*

Sixty-three mature pregnant beef cows, primarily of Angus and Simmental breeding, were used to investigate the relationship between feed efficiency traits with ultrasound measures of backfat (BF), rumpfat (RF) and serum metabolites. Cows were randomly assigned to pen and individually fed a haylage/wheat straw-based TMR for 105 d leading up to parturition. Cows were weighed every 28 d and ultrasounded for backfat and rumpfat. Blood samples were obtained via jugular venipuncture on d 1, 56, 105, and serum was frozen for later analysis of urea, glucose, BHBA, NEFA and total cholesterol. Pearson correlations were conducted in SAS between performance and feed efficiency traits and ultrasound measures and serum metabolite concentrations and P-values adjusted using Benjamini Hochberg false discovery rate correction. Residual feed intake (RFI) was calculated using PROC GLM in SAS. Dry matter intake was not ($P \geq 0.14$) correlated with average body weight (BW), cow age, initial BF and RF, change in BF or RF, or serum metabolites. Average daily gain was negatively correlated ($P = 0.02$) with average BW but not ($P \geq 0.08$) with age, ultrasound measures or serum metabolites. Feed to gain was not ($P \geq 0.07$) correlated with BW, age, ultrasound measures or serum metabolites with the exception of d 56 serum glucose concentration, which was positively correlated ($P = 0.02$). The basic model for RFI ($R^2 = 0.08$) was not correlated ($P \geq 0.17$) with age, BW, ultrasound measures or circulating serum metabolites. Body weight, age, ultrasound measures and blood metabolites may not be good indicators of differences in feed efficiency traits, and there is considerable variation in measures of feed efficiency in mature pregnant cows.

Key words: beef cows, feed efficiency, serum metabolites

W25   Effect of preconditioning days, feeder cattle grade, and sire breed type on growth performance and carcass characteristics of beef cattle participating in a calf to carcass program in southwest Louisiana. D. M. Gandy*, D. R. Goodwin, T. H. Shields, W. A.

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One hundred 30 - one weanling steer calves (initial BW = 280 ± 78 kg) of various breeds were enrolled in a preconditioning program in southwest Louisiana. Steers were identified by sire breed, tagged, and assigned a USDA feeder calf grade. Calves entered the program in mid-September of 2008 and 2009 and were preconditioned for 36 ± 6 d. Cattle were grouped by weaning age and housed (25- 30 calves) in 0.81 ha paddocks with a mixture of bermudagrass, bahiagrass and carpetgrass and free choice alicia and bermudagrass hay (≥8% CP). A 14% CP preconditioning diet fed in troughs was provided with DMI of 1–2% of live BW. After preconditioning, calves were shipped 1,283 km to Henry C Hitch feedyard in Guymon Oklahoma. Calves were fed to an average harvest weight of 602 kg (range 445 to 727 kg) and harvested at a commercial processing facility. Feeder calf grade, steer sire breed, and preconditioning d were used to determine differences in growth and carcass performance. Large framed calves with at least moderate muscling had increased ($P < 0.05$) preconditioning ADG, harvest weight, and carcass weight when compared with medium framed calves with at least moderate muscling. Growth (preconditioning and feedlot ADG) were not different ($P > 0.05$) when steers were grouped by sire breed American (n = 29) or British (n = 101). Steers with British sires had heavier ($P < 0.05$) harvest weights than steers born of American sires. Steers that were maintained on a preconditioning routine for 37 to 42 d had increased ($P < 0.05$) harvest weight, carcass backfat and numerical USDA yield grade. When calves were preconditioned 36 d or less numerical yield grade was lower ($P < 0.05$). Feeder calf grades continue to be a reliable source for predicting harvest and carcass weights. Breed of sire did not affect carcass characteristics and preconditioning d influences carcass yield grade.

Key words: feeder calf grade, preconditioning, growth

W26   Effect of castration status on arrival of ultra-high risk calves on feedlot performance and health during a 61-d preconditioning program. L. Clark[1], C. Flaig[1], O. C. Schunicht[1], M. L. May[1], R. E. Peterson[1], C. W. Booker[1], C. R. Krehbiel[2], G. K. Jim[1], and L.

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Ultra-high risk calves (n = 80; BW = 242.5 ± 4.2 kg) were allocated to evaluate the effect of castration status on arrival on feedlot performance and health during a 61-d preconditioning program. Upon arrival, 40 intact males (BULLS) were identified as candidates for the trial. Based on initial weight (±2.5 kg) and hide color, a matched pair was identified as a castrated male (STEERS) from the same truckload and was allocated as a case control. Arrival processing included a metaphylactic treatment for control of BRD and proprietary health procedures based on animal health risk assessment (Feedlot Health Management Services, Ltd. Okotoks, Alberta, Canada). Individual number and electronic ear tags were also applied. Intact males were band castrated. After initial processing, cattle were allocated to one of 2 pens (20 case controls/pen) equipped with individual feed intake data collection systems (GrowSafe Systems Ltd., Airdrie, Canada) and fed for 60 d. Cattle were observed by trained personnel for detection and treatment of disease during the trial. Cattle were re-weighed on d 30 and d 61. Animal performance was analyzed using PROC GLIMMIX (SAS Institute, NC). Animal was the experimental unit, and the model included the fixed effect of treatment and the random effects of block and pen. Animal health parameters were analyzed using a chi-squared procedure of SAS. A total of 6 animals (3 BULLS, 3 STEERS) were removed from the trial and not included in the analysis. In addition, 2 (5.0%) BULLS and 1 (2.5%) STEERS died ($P = 0.52$) and were removed from the analysis; no difference in animals treated for BRD was detected (15.5 vs 20.0% for BULLS and STEERS respectively; $P = 0.20$). No differences were observed for BW, ADG, DMI, or GF ($P > 0.05$) from d 0 to 30. However by d 60, BULLS had lower BW (305 vs 315 kg; $P = 0.05$), ADG (1.02 vs 1.18 kg/d; $P = 0.02$), and tended to have lower G:F (0.171 vs 0.185; $P = 0.09$) when compared with STEERS. Thus, purchase price discounts for bulls when compared with steers should consider a 13.5% decrease in ADG and a 7.6% decrease in G:F in addition to increased mortality.

Key words: castration, feedlot performance, BRD