PREVIOUS STOCKING RATE ON WINTER PASTURE, FOUR BREED TYPES, AND FEEDLOT PERFORMANCE ON CARCASS TRAITS

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Background. A cooperative experiment between TAMU-Overton, TAMU-Uvalde, and Texas Tech University addressed the effect of previous stocking rate (SR), breed type, and feedlot performance on carcass traits. Steers (n = 72) and heifers (n = 36) were born in the Winter of 2000 and consisted of 3/4 Angus 1/4 Brahman (AAB), 1/2 Brahman 1/2 Hereford (F-1, BH), Braunvieh cross (BRV), or Bonsmara cross (BON) breed types. Heifers consisted of only AAB breed type. After weaning, the BRV and BON steers were transported from Uvalde to Overton. At TAMU-Overton, animals grazed 'Maton' rye (*Secale cereale*) and 'TAM' 90 annual ryegrass (*Lolium multiflorum*) at two low SR [Early Initiation (RLY) at 1.5 hd/ac and Delayed Initiation (DFR) at 2.5 hd/ac] and at two high SR (RLY at 2.8 hd/ac and DFR at 4.8 hd/ac). Upon completion of the grazing portion of the experiment, cattle were shipped in late May 2001 to the Texas Tech Alltech Research feedlot in Lubbock for finishing. Animals were stratified to pens of 4-7 head according to breed type, sex, SR, and weight, and remained on feed until a visual assessment of 0.4-inch backfat was attained. At the end of the feeding period animals were harvested and marketed at the Excel facility in Plainview, Texas. Texas Tech University Department of Animal Science meat science staff collected carcass data.

Research Findings. When steers were fed to a visually similar backfat, there were no pasture SR effects on marbling (MARB). However, pasture SR did affect ribeye area (REA), adjusted fat thickness (FAT), hot carcass weight (HCW), and final USDA Yield Grade (YG) (Table 1). Previous SR on pasture did not affect carcass traits of heifers when fed a variable number of days on feed to a constant backfat. Breed type ranged from 50% Brahman (F-1 HB) to 25% Brahman (AAB) to less than 25% Brahman for some of the BON and BRV steers. When fed to an estimated common back fat, there were differences in days on feed but no differences in MARB of steers. The REA of BON and BRV were both greater than that for AAB and F-1 HB. The FAT scores varied only slightly and confirmed the visual assessments for the targeted harvest time. The F-1 HB had heavier HCW than BON, which was indicated in the differences in final feedlot weight in the companion paper. The USDA Yield Grade was the most variable, but perhaps predictable, among the four breed types with BRV having the lowest (best), followed by BON and F-1 HB, and the AAB with the highest value at 3.4.

Application. Previous pasture SR affected several carcass traits in steers but not heifers. Breed type did not affect Grid Price, but the AAB steers received the highest grid price and the F-1 BH steers received the lowest price of the four types. The difference in grid pricing of AAB vs F-1 HB does not appear to be accounted for by carcass traits alone, and creates concern about potential discrimation (discounts) for 50% Brahman-influenced cattle. The grid pricing formula resulted in a value of $ 803.94 per hd for the F-1 HB; whereas, had they been sold for the average liveweight price of $ 66.99/cwt, they would have had a per head value of $ 884.94, or a difference of $80 per head. Although the F-1 BH steers received the lowest Grid Price of the four types, the heavier HCW for the F-1 BH steers resulted in the highest VALUE of the four types used in this study. Total weight remains as one of the primary factors affecting total carcass receipts.

Table 1. Effect of pasture stocking rates (SR) on carcass traits of steers (M) and heifers (F).

CALF SEX	PASTURE SR	MARB[1]	REA (in^2)	FAT (in)	HCW (lb)	YG	GRID PRICE $/cwt	VALUE $/hd
M	RLY-LO	393	12.9 a	0.61 a	781 a	3.4 a	104.53	816.38
M	RLY-HI	405	13.0 a	0.48 b	751 ab	2.9 b	104.63	785.77
M	DFR-LO	396	12.2 ab	0.57 ab	748 ab	3.3 a	107.09	801.03
M	DFR-HI	398	12.0 b	0.53 ab	708 b	3.1 ab	101.85	721.10
F	RLY-LO	393	12.6	0.49	689	2.9	111.50	768.24
F	RLY-HI	418	11.9	0.66	688	3.4	110.42	762.28
F	DFR-LO	359	13.3	0.52	732	2.8	108.25	794.15
F	DFR-LO	374	12.2	0.68	698	3.4	102.36	714.47

Means followed by different letters within a column are different (P<.05).
[1]Marbling (MARB) scores 300 to 399=USDA Select; 400-499 = USDA Choice minus

Table 2. Effect of steer breed type across stocking rates on carcass traits.

BREED TYPE	MARB[1]	REA (in^2)	FAT (in)	HCW (lb)	YG	GRID PRICE[2] $/cwt	VALUE $/hd
BON	400	12.4 a	0.56 ab	693 b	3.10	105.14	728.37
BRV	372	13.5 a	0.47 b	739 ab	2.71	103.44	766.97
AAB	412	12.2 b	0.60 a	748 ab	3.43	107.75	775.80
F-1 HB	404	12.1 b	0.51 ab	781 a	3.37	102.94	803.94

Means followed by different letters within a column are different (P<.06)
[1]Marbling (MARB) scores 300 to 399=USDA Select; 400-499 = USDA Choice minus
[2]Grid pricing based on Excel Formula.