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EFFECT OF PREVIOUS STOCKING RATE OF RYE-RYEGRASS PASTURE AND FOUR BREED TYPES OF CALVES ON FEEDLOT PERFORMANCE

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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) on pasture and breed type on feedlot performance. Steers (n = 72) and heifers (n = 36) were born in the Winter of 2000 and consisted of 1/2 and 3/4 Angus 1/4 Brahman (AAB), 1/2 Hereford 1/2 Brahman (F-1, HB), 1/2 Braunvieh cross (BRV), or 1/2 Bonsmara cross (BON) breed types. Heifers consisted of only AAB breed type. After weaning, the BRV and BON steers were shipped from Uvalde to Overton and co-mingled with the Overton-reared AAB and F-1 HB stockers. All calves were stratified and randomly assigned to two different SR 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). Grazing was from December 2000 to late May 2001. Upon completion of grazing, cattle were shipped to the Texas Tech Alltech Research feedlot in Lubbock for finishing. Animals were stratified to pens of 4-7 head each according to breed type, sex, SR, and weight, and remained on feed until a visual assessment of 0.4-inch backfat was attained. The BRV and BON steers were mixed in pens; thus, breed type effects for feed efficiency and cost of gain were not determined separately for these two types. Weight gain and feed intake were measured at 28 da intervals throughout the finishing period.

Research Findings. Previous pasture SR affected initial weight in feedlot and ADG among feeders (Table 1). The DFR grazing at higher stocking rates rather than the RLY stocked pastures resulted in substantially lower pasture ADG and initial feedlot weights due primarily to reduced rainfall events and forage growth during the spring grazing months. Initial weights in the feedlot across breed types ranged from 661 to 858 lbs for steers and 617 to 837 lbs for heifers ($P<.07$). Some compensating growth in feedlot was evident among steers as both DFR treatments resulted in ADG of 4.21 and 4.38 lbs/da, respectively; whereas, both RLY grazing treatment steers had near identical ADG of 3.7 lb/da. Compensatory growth was also evident for AAB heifers on specific SR; however, variability of ADG resulted in no significant differences in these ADG's. The heaviest initial weight heifers were harvested after 96 days; whereas the lightest initial weight heifers were not deemed finished until 136 days on feed. The TAMU-Uvalde-reared BON and BRV steers had the lowest feedlot ADG, and hence the lightest final weights at

time of harvest. Both BON and BRV steers were fed 115 to 136 days. The F-1 HB steers, fed for 136 days, trended toward higher ADG and final weight off feed. Feed to gain for these F-1 HB steers was 6.1:1. Feed to gain conversions were similar at less than 6.5:1 across all breed types; thus cost/lb gain during this experiment was about $ 0.40/lb gain based on $122.16 per ton ration.

Application. Restricted growth of stockers on pasture often results in compensatory feedlot gains. With these breed types of cattle, the magnitude of compensatory gains were only about 0.6 lb/da extra for steers and 0.81 lb/da extra for heifers. The AAB heifers used in this study were sired by modern, high growth rate bulls and their feedlot performance was indicative of superior genetics. Retained ownership decisions can often be most rewarding with knowledge of sire performance traits.

Table 1. Pasture stocking rates (SR) and sex of calf effects on feedlot performance.

CALF SEX	PASTURE SR[1]	INITIAL WT[2]	FINAL WT	ADG	DAYS ON FEED
		(lbs)	(lbs)	(lb/da)	(d)
M	RLY-LO	853 a	1288	3.52 a	126
M	RLY-HI	800 b	1257	3.70 a	136
M	DFR-LO	765 b	1263	4.19 b	126
M	DFR-HI	670 c	1205	4.14 b	136
F	RLY-LO	791	1147	3.67	96
F	RLY-HI	744	1173	3.99	106
F	DFR-LO	788	1239	4.18	115
F	DFR-HI	663	1170	4.46	136

[1]Early initiation (RLY) or Delayed initiation (DFR) of grazing at low (LO) and high (HI) stocking rates.
[2]Means followed by different letters within a column are significantly different (P<.07).

Table 2. Effect of steer breed types across stocking rates on feedlot performance.

BREED TYPE[1]	INITIAL WT	FINAL WT[2]	ADG	FEED:GAIN	DAYS ON FEED
	(lbs)	(lbs)	(lb/da)	(lb/da)	(d)
BON	737	1159 b	3.45 b	--	115-136
BRV	754	1232 ab	3.94 a	--	115-136
AAB	780	1257 ab	4.03 a	6.48	115-136
F-1 HB	787	1321 a	4.14 a	6.13	136

[1]Breed types used included Bonsmara x (BON), Braunvieh x (BRV) Angus x (AAB), and F-1 (Hereford x Brahman).
[2]Means followed by different letters within a column are significantly different (P<.05).