

PUBLICATIONS

2002

INFLUENCE OF ENVIRONMENT, PRE-FEEDLOT GROWTH RATE, AND BREED TYPES ON FEEDLOT PERFORMANCE

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Background. *Bos indicus* x *Bos taurus* steers (n=90 hd) from TAMU-McGregor (MCG) were weaned in mid-October 1999, grouped by breed composition and generation [Nelore x Angus F-1; Brahman (BRM) x Hereford, F-2; 1/4 BRM x 1/4 Angus x 1/4 Nelore x 1/4 Hereford; and 1/2 BRM x 1/4 Angus x 1/4 Hereford] (1/2 IND), were paired within group based on weaning weight, and allocated as 15 pairs across three TAMU locations (MCG, Overton (OVT), and Uvalde (UVL). At MCG 15 1/2 IND were placed immediately in feedlot as calf-feds, and 15 1/2 IND plus 13 1/4 BRM steers were wintered on hay and supplement until mid-April 2000 when they were placed in feedlot. At OVT, steers grazed at two stocking rates (HI and LO) on ryegrass along with 31 OVT-reared Angus-sired steers with either Angus x BRM (AAB) or Hereford x BRM (AHB) dams. Steers were returned to MCG on May 22 for feeding. Steers shipped to UVL grazed ryegrass with 27 head of Angus steers in a frontal grazing (irrigated) system; or grazed native rangeland. Steers were shipped from UVL to MCG feedlot on April 26. This cooperative, multi-location experiment was initiated to evaluate effects of two pre-feedlot growth rates of steers at three environments on feedlot performance. Steers were fed to a visual assessment of 0.4-inch backfat.

Research Findings. Stocker gains by 1/2 IND steers ranged from 0.55 lbs/da at UVL to 2.28 lbs/da at OVT (Table 1). The calf-fed 1/2 IND steers were on feed 226 days and gained 1.83 lbs/da. This unexpected low ADG could have been due to behavior. These 1/2 IND steers had high anxiety levels when handled. The MCG steers that were backgrounded prior to feedlot were fed for 139 days and gained 3.02 lbs/da for 1/2 IND, and 145 days and 3.13 lbs/da for 1/4 BRM. The 1/2 IND steers pastured at OVT on HI stocking rates (SR) gained 4.11 and 4.61 lbs/da during a 130 to 124 day period; whereas, LO SR steers gained 4.11 and 3.42 lbs/da during 119 days on feed. The AAB and AHB OVT steers had feedlot ADG of 4.28 and 4.01 from HI SR and 3.95 and 3.81 lbs/da from LO SR. The 1/2 IND steers pastured at UVL had feedlot ADG of 3.84 lbs/da from HI SR, and 3.46 lbs/da from ME SR. Angus steers pastured at UVL had the lowest ADG during the summer feeding period of 3.13 lbs/da from HI SR, 3.33 lbs/da from LO SR, and 3.20 lbs/da from ME SR.

Application. Summertime feedlot performance of the 1/2 IND steers wintered at OVT and UVL exceeded that of both the MCG calf-feds and both breed types over wintered at MCG.

Compensating gains was evident for selected groups, but not for all. The AAB and AHB OVT steers fed comparably to the 1/2 IND steers; whereas, the UVL Angus steers had the lowest ADG. Breedtype adaptation to feedlot conditions appeared to be more important than pre-feedlot growth rates in this first year study.

Table 1. Pre-feedlot growth and feedlot performance of various breedtypes of steers.

STOCKER-----MCG FEEDLOT											
AN ¹	PAS	SR ²	SM ³		INT	FIN	ADG	INT	FIN	ADG	AVE
RGN	LOC				WT	WT		WT	WT		DOF ⁵
MCG ^a	OVT	HI	CN	SD ⁴	629	780	1.44	715	1246	4.11	130
					74	99	0.30	96	126	0.61	
MCG ^a	OVT	HI	RT	SD	652	735	0.79	688	1254	4.61	124
					58	67	0.23	66	82	0.48	
MCG ^a	OVT	LO	CN	SD	656	895	2.28	824	1311	4.11	119
					49	41	0.31	38	64	0.57	
MCG ^a	OVT	LO	RT	SD	628	841	2.03	799	1203	3.42	119
					22	34	0.25	44	40	0.45	
MCG ^a	UVL	HI	RA	SD	633	709	0.55	666	1135	3.84	128
					61	73	0.22	61	101	0.95	
MCG ^a	UVL	ME	CN	SD	757	837	1.50	805	1198	3.46	115
					70	66	0.49	71	107	0.60	
MCG ^a	MCG	ME	CN	SD	555	787	1.30	787	1196	3.02	139
					59	78	0.36	78	100	0.55	
MCG ^b	MCG	ME	CN	SD	392	708	1.67	708	1150	3.13	145
					21	40	0.13	40	85	0.52	
MCG ^a	MCG	CALF FEDS -----					SD	645	1056	1.83	226
						107		119	0.46		
OVT ^b	OVT	HI	CN	SD	791	977	1.78	905	1416	4.28	119
					41	18	0.35	16	60	0.45	
OVT ^b	OVT	HI	RT	SD	666	800	1.28	761	1260	4.01	125
					97	111	0.40	99	126	0.53	
OVT ^b	OVT	LO	CN	SD	678	963	2.72	906	1377	3.95	119
					76	100	0.37	86	106	0.41	
OVT ^b	OVT	LO	RT	SD	710	994	2.70	956	1407	3.81	119
					42	48	0.55	37	25	0.29	
UVL ^c	UVL	HI	CN	SD	449	580	0.96	548	1040	3.13	159
					34	35	0.17	37	66	0.44	
UVL ^c	UVL	LO	RT	SD	405	705	2.48	719	1111	3.33	119
					46	45	0.23	42	58	0.44	
UVL ^c	UVL	ME	RT	SD	398	691	2.42	713	1119	3.20	128
					43	38	0.21	37	63	0.31	

¹Animal origin with following breed types: (a) 1/2 IND; (b) 25% BRM and includes AAB and AHB; (c) Angus.

²Stocking Rates on pasture or rangeland of high (HI), medium (ME), or low (LO).

³Stocking Method of continuous (CN), rotational (RT), or rangeland (RA).

⁴Standard Deviation (SD) of the mean of numbers in treatment group.

⁵Average Days on feed represents average of individuals that were harvested at about 0.4-inch backfat.