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CARCASS TRAIT EFFECTS FROM ENVIRONMENT, GROWTH RATE ON PASTURE, AND BREEDTYPES

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Background. A cooperative grazing-feedlot experiment between TAMU-McGregor (MCG), Overton (OVT), and Uvalde (UVL) was initiated to determine carcass quality consistency as affected by animal breed type, growth rate, and environment. The breed types used, 1/2 IND, 1/4 Brahman (AAB and AHB), and Angus, as well as pre-feedlot growth rates and feedlot performance, were presented in the companion Field Day Report. Steers were fed to a visual 0.4-inch backfat and then transported to Corpus Christi, TX for harvesting. At harvest, all carcasses were electrically stimulated. Carcasses traits were measured by TAMU-College Station meat science personnel. Days on feed varied with initial feedlot weight, pre-feedlot condition, and ADG. Overall, there were 4 harvest dates for this group of 161 steers.

Research Findings. With the exception of the MCG calf-feds that had low feedlot ADG and 0.37-inch backfat (FAT), all other steer groups had about 0.5-inch average FAT (Table 1). With the harvest time set by degree of finish (FAT), steers were on feed for different periods of time. The 1/2 IND steers pastured at OVT had final live weights of about 1250 lbs and hot carcass weights (HCW) of about 750 lbs. Those 1/2 IND steers pastured at UVL and MCG had final liveweights of about 1150 with HCW of about 700 lbs. The 1/2 IND calf-feds had the lightest final weight of 1050 lbs and HCW of 660 lbs. The AAB and AHB OVT-reared steers had final liveweights of about 1375 lbs with HCW of about 800 lbs. The Angus steers pastured at UVL had final liveweights of about 1100 lbs with 650 lb HCW. The highest marbling (MARB) scores were attained by the 1/4 BRM MCG steers at 611 (USDA Choice plus), and two groups of Angus steers from UVL at 511 and 529 (USDA Choice). All but four groups of steers graded USDA Choice. Those groups that averaged USDA Select were all 1/2 IND, which included MCG calf-feds, both groups of UVL wintered steers, and low stocked steers wintered at OVT. It is likely that more days on feed may have moved all groups into USDA Choice. However, the calf-fed feeding period may have approached 8 to 9 months before a grade change could have been accomplished. Except for calf-feds, 1/2 IND had relatively similar ribeye area and yield grade.

Application. The 1/2 IND steers, when feedlot finished during the summer months in south central Texas, met current beef industry carcass grade standards. The 1/4 BRM steers from MCG and OVT and the Angus steers from UVL had slightly higher USDA quality grades while

maintaining acceptable yield grades. Angus steers which were on HI SR pastures preweaning required about 160 days to finish in this summer feeding period.

Table 1. Carcass traits from steer breed types pastured at different environments.

AN ¹ RGN	PAS LOC	SR ²	F-LOT		CARCASS TRAITS				
			FINL WT (lb)	HCW (lb)	REA (in ²)	FAT (in)	YG	QG ⁵	MARB
MCG ^a	OVT	HI	1246	763	13.4	0.49	2.2	405	440
			SD ³ 126	91	1.3	0.2	0.6	35	80
MCG ^a	OVT	HI	1254	760	12.7	0.51	2.5	416	449
			SD 82	63	0.8	0.10	0.3	9	28
MCG ^a	OVT	LO	1311	798	13.8	0.53	2.4	402	420
			SD 64	58	1.1	0.1	0.5	21	41
MCG ^a	OVT	LO	1203	728	12.4	0.53	2.6	392	412
			SD 40	24	1.5	0.1	0.6	35	60
MCG ^a	UVL	HI-RA	1135	675	11.4	0.56	2.8	370	389
			SD 101	59	1.1	0.3	0.9	54	84
MCG ^a	UVL	ME	1198	723	11.9	0.53	2.9	394	416
			SD 107	72	1.0	0.2	0.6	34	61
MCG ^a	MCG	ME	1196	717	12.0	0.56	2.9	401	455
			SD 100	63	0.9	0.3	0.8	63	127
MCG ^b	MCG	ME	1150	681	11.5	0.72	3.1	470	611
			SD 85	64	1.0	0.2	0.5	38	113
MCG ^a	CALF FED		1056	659	12.2	0.37	1.9	382	405
			SD 119	101	2.1	0.2	0.9	65	115
OVT ^b	OVT	HI	1416	823	12.2	0.58	3.4	409	430
			SD 60	50	0.5	0.2	0.6	19	55
OVT ^b	OVT	HI	1206	730	12.2	0.62	2.8	404	420
			SD 126	75	0.9	0.2	0.6	15	38
OVT ^b	OVT	LO	1377	832	13.1	0.87	3.6	426	481
			SD 106	61	1.0	0.3	0.7	25	72
OVT ^b	OVT	LO	1407	818	12.4	0.60	3.1	431	493
			SD 25	36	0.3	0.2	0.7	22	66
UVL ^c	UVL	HI	1040	618	11.6	0.54	2.4	417	462
			SD 66	47	1.0	0.1	0.6	27	48
UVL ^c	UVL	LO	1111	647	11.0	0.54	2.9	435	511
			SD 58	31	0.6	.10	0.6	32	87
UVL ^c	UVL	ME	1119	661	11.8	0.55	2.8	441	529
			SD 63	48	0.8	.10	0.3	35	96

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

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

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

⁴Carcass Traits include hot carcass weight (HCW), ribeye area (REA), backfat (FAT), Yield Grade (YG), Quality Grade (QG), and marbling (MARB).

⁵USDA Quality grades 300 to 399=Select; 400 to 430=Choice minus, 431 to 463=Choice; 467 to 497=Choice plus.