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COMPARISON OF HUMID VS SEMI-ARID ENVIRONMENTS FOR BACKGROUNDING MEXICAN STEERS

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Background. Mexican steers have traditionally crossed the border into Texas and pastured or "backgrounded" on native range which may also include complementary, or subsequent annual pastures. A cooperative study between TAES-Overton and TAES-Uvalde was initiated to evaluate both the biological and economic parameters of pasturing (backgrounding) Mexican steers in two environments (humid East Texas and semi-arid Southwest Texas) prior to finishing in a High Plains feedlot. On December 4 and 5, 1991, 252 steers crossed the Mexican border at Presidio, Texas and were transported to an experimental ranch near Uvalde. These steers were sorted into 6 categories based on visually assessed breed type, weight, frame, and truck lot. Approximately one-third of steers in each category were randomly allotted to East Texas winter annual pastures (n = 110), with the remaining steers (n = 242) randomly assigned to winter on native range and/or an oats-sorghum alnum system.

Research Findings. Pay weight on the 252 steers was 455 lbs at Presidio. The on-site arrival weight was about 435 lbs for steers shipped to East Texas and 417 lbs for steers that remained in Southwest Texas. Steers grazing rye-ryegrass pastures at Overton had overall average daily gains (ADG) of about 1.8 lbs for 179 days (12-6-91 to 6-2-91); whereas, low forage availability in Southwest Texas restricted ADG to about 1.1 lbs during a 236-day period under range conditions (Table 1). Steers at Overton were shipped to a commercial feedlot in Hereford, Texas on June 2, 1992 and fed in 2 pens based on estimated percentage Brahman breeding type. Feedlot gain for these steers was about 3.16 lbs/day irrespective of breed type. Total feedlot costs were about \$.50 and \$.54/lb gain during a 145-day feedlot period. The USDA Yield Grade and Quality Grades were acceptable with about 60% of the steers attaining USDA Choice carcasses.

Steers that grazed native range or oats-sorghum alnum near Uvalde had feedlot ADG of about 3.35 lbs. In contrast to those calves wintered in East Texas and fed for 145 days, the range-grazed steers yielded carcasses that were about 70% USDA Select and 30% USDA Choice after 125-day feedlot period. Total costs (ration plus processing, etc.) per lb gain was a very acceptable \$.45 and \$.47. Both sets (4 pens) of Mexican steers were sold for the top price of the day. Because of an increasingly strong market during this period, the Uvalde-based steers actually sold for about \$1.00/cwt more than the Overton-based steers. Given the continued feedlot ADG of 3.35 lbs for 20 more days, the Uvalde-based steers would have nearly compensated for the lack

of gains on native range as compared to Overton-based steers grazing improved pastures.

Application. Backgrounding of cattle on improved pastures vs native range affects both the stocker and feeder phase of production. Optimum economic returns in these types of operations are closely linked to the degree of flexibility in maintaining ownership throughout the stocker-feeder-finishing phases. Nutritional deficiencies during the grazing phase of animal production often result in positive economic incentives during the succeeding feedlot phase. During the course of this study, the additional time on feed resulted in higher quality grade carcasses but this did not project to additional profit. Carcass pricing structures, margins between quality and yield grades, and supply and demand of beef are primary determinants of the length of feeding period.

Table 1. Performance of Mexican steers during pasture phase at two environments and the feedlot phase at the same feedlot.

Item	MEXICAN STEERS			
	OVERTON ¹		UVALDE	
	GRP 1-4	GRP 5-8	Native	Improved
Number	60	48	104	127
PASTURE PHASE				
On-site weight, lbs	439	424	416	418
Off-pasture weight, lbs	763	739	659	672
Grazing days	179	179	236	236
ADG, lbs ²	1.84	1.80	1.07	1.13
FEEDLOT PHASE				
Arrival Date	6-2	6-2	8-1	8-1
Days on feed	148	145	125	125
Slaughter pay wt, lbs	1194	1167	1075	1091
ADG, lbs	3.17	3.16	3.33	3.37
Feed:Gain, lbs	7.9	8.5	7.7	7.4
Total ³ Costs/lb gain, \$.4995	.5367	.4654	.4511
CARCASS TRAITS				
Hot Weight, lbs	762	756	671	672
USDA Yield Grade				
No. 1, %	30.5	44.9	12.5	3.9
No. 2, %	42.4	42.9	69.2	63.0
No. 3, %	18.6	12.2	18.3	33.1
No. 4, %	8.5	0	0	0
USDA Quality Grade				
Standard, %	1.7	0	0	0
Select, %	40.7	40.8	70.2	71.7
Choice, %	57.6	59.2	29.8	28.3

¹ Groups (GRP) were partitioned by visual appraisal at percentage Brahman breed type.

GRP 1-4 = 0 to <25% Brahman; GRP 5-8 = 25 to >50% Brahman.

² Average Daily Gain

³ Total costs = ration, processing, etc.