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Influence of Grazing Pressure and Environment on Growth and Development of F-1 (Brahman x Hereford) Heifers

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Summary

Results are reported from the first year of a multi-year trial to ascertain the influence of environment and grazing pressure on the development of Brahman x Hereford (F-1) heifers. Heifers were obtained from two sources and allocated by weight, age, and source of origin to both Overton and Uvalde. All heifers were wintered in a common group at each location and divided into four grazing pressure treatments in March at Overton and in April at Uvalde. Grazing pressures were in effect until mid-October at Overton and mid-December at Uvalde. Heifers gained 0.94, 1.45, 1.66, and 1.70 lb/hd/day, respectively, on high (H), moderately high (MH), moderately low (ML), and low (L) grazing pressure treatments at Overton (March to October). Average daily gains of Uvalde-based heifers during the grazing pressure period (April to December) were 0.63, 0.67, 0.77, and 1.04 lb, respectively, for H, MH, ML, and L pastures. Gain per animal ranged from 220 lb (H) to 397 lb (L) at Overton

(March to October) and 155 lb (H) to 256 lb (L) at Uvalde (April to December). Because of the wide differences in stocking rates, gains per acre were 22- to 60-fold greater on the bermudagrass pastures at Overton as compared to the native bunchgrass pastures of Uvalde. The Overton-based heifers had higher visual fat cover scores at the termination of the trial, but heifers at both locations had similar skeletal growth as measured via height at hip. Percent pregnancy was also similar at approximately 75% at both Overton and Uvalde.

Introduction

Commercial cattlemen are in constant need of replacement heifers. And, along with the demand for heifers is a concomitant need for a forage system for developing the heifer to the breeding stage. For many areas of Texas, animal performance is dictated by the influence of grazing pressure. Level of grazing pressure may fluctuate with climatic conditions or may be closely manipulated for optimum forage utilization. This trial was initiated to determine the influence of grazing pressure on the growth and development of F-1 (Brahman x Hereford) heifers grown under two environmental conditions.

Procedure

Location

The two sites involved in this trial were Overton and Uvalde. Overton is located in East Texas approximately 120 miles east of Dallas, Texas and 75 miles west of

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Shreveport, Louisiana with an average yearly rainfall of 44.4 inches (Table 1). Total annual rainfall for 1985 was 50.7 inches with 30.6 inches occurring during the March-October grazing period. The Uvalde site is situated in Southwest Texas and is approximately 110 miles southwest of San Antonio, Texas and 50 miles southeast of Del Rio, Texas. Average yearly rainfall at Uvalde is 20.4 inches with 17.6 inches occurring during the April to December grazing period (Table 1).

TABLE 1. AVERAGE AND TRIAL YEAR RAINFALL AT EACH OF TWO LOCATIONS

Month	Average Rainfall		1985 Rainfall	
	(18 yr) Overton	(30 yr) Uvalde	Overton	Uvalde
	inches			
Jan.	3.50	0.94	3.69	2.08
Feb.	3.81	1.12	3.29	1.25
Mar.	3.94	0.81	3.50	1.60
Apr.	3.87	1.96	3.85	1.02
May	4.32	3.15	3.02	1.85
June	4.09	2.27	1.10	1.86
July	3.10	1.41	6.74	2.08
Aug.	1.71	2.01	1.17	0
Sep.	3.97	3.01	3.14	2.66
Oct.	4.38	2.06	8.06	6.21
Nov.	4.21	0.87	8.59	1.94
Dec.	3.46	0.83	4.52	0
Total	44.4	20.4	50.67	22.6

Forage

Tifton 44 and Coastal bermudagrass (*Cynodon dactylon*) pastures at Overton were oversown with 'Marshall' ryegrass (*Lolium multiflorum*) and 'Yuchi' arrowleaf clover (*Trifolium vesiculosum*) mid-October 1984. Pasture size ranged from 4.5 to 5.5 acres. At monthly intervals, four, one-square-foot quadrates were clipped to ground level in each pasture (approximately one quadrate per acre) to measure forage available for consumption. At 2-week intervals, each pasture was sampled for nutritive value by hand-plucking plant parts similar to that observed being consumed by animals on each level of forage availability. Four levels of available forage were achieved by using 'regulator' animals via the put-and-take technique of continuous grazing. Fertilizer was split applied with a total of 330-100-100 lb/A N-P₂O₅-K₂O used during the season.

At the Uvalde location, pasture size ranged from 643 to 825 acres. The native vegetation was characteristic of the South Texas mixed-brush complex which consists of medium to dense overstory of 10 to 15 species of woody shrubs and trees with interspace and understory vegetation dominated by mid- and shortgrasses and associated forbs. Grass species included pink pappus (*Pappophorum bicolor*), tobosa (*Hilaria mutica*), curlymesquite (*Hilaria berlandieri*), Wright threeawn (*Aristida wrightii*), hooded windmillgrass (*Chloris cucullata*), Texas bristlegrass (*Setaria texana*), slim tridens (*Tridens muticus*), and red grama (*Bouteloua trifida*). Forbs species included wild petunia (*Ruellia* spp.), prostrate bundleflower (*Desman-*

thus virgatus), hairy tubetongue (*Siphonoglossa pilosella*), tallow weed (*Plantago* spp.), dozedaisy (*Aphanos-tephus* spp.) and Indianblanket (*Gaillardia pulchella*). Primary browse species included guajillo (*Acacia berlandieri*), kidneywood (*Eysenhardtia texana*), hogplum (*Cobubrina texensis*), and littleleaf sumac (*Rhus microphylla*). Species composition and available forage varied according to range site. Vegetation in each pasture was sampled at monthly intervals. Sampling was stratified by range site in each pasture. Herbaceous vegetation was sampled by the double sampling, weight-estimate technique. Thirty, 5.4 sq ft (0.5 sq m) quadrates, including five clipped and 25 estimated, were sampled in each pasture. Clipped samples were oven-dried and weighed. Field weight estimates were adjusted to an oven-dry weight basis.

Browse availability was estimated by a combination of line intercept and clipping techniques. Canopy cover was measured along 12 300-ft transects which were stratified by range site in each pasture. Five, 11.82 cu inches (30³cm) samples were clipped from each primary browse species occurring in the line intercepts. Clipped samples were oven-dried, then leaves and tips were separated from woody stems and weighed. Browse availability was then calculated using canopy cover, clipped sample weights, and acreage in the site occupied by each species. Four levels of available forage were achieved using a put-and-take technique similar to that used at Overton.

Animals

Heifers used in this trial were F-1 (Brahman x Hereford) and were obtained from two sources in Texas which represented a fall (October to December) and a spring (February to March) calving season. Approximately one-fourth of the heifers from each source were transported to Overton with three-fourths of the heifers being sent to Uvalde. Thirty-three heifers were used in the Overton trial and 104 heifers were used at Uvalde. Heifers from each source of origin were allocated based on weight and age.

Animals arrived at Overton in mid-December and were fed *ad libitum* hay plus a supplement which consisted of 5 lb corn and 1.5 lb cottonseed meal per head per day from January 8, 1985 to March 4, 1985. All heifers were wintered in a single herd and, in addition to hay and supplement, were allowed to graze winter pastures of 'Elbon' rye-Marshall ryegrass for approximately 30 days prior to allotment to test pastures. Once the heifers were placed on test pastures, they were weighed at monthly intervals, measured for height at the hip, and visually condition scored for fatness. Eight heifers were assigned to each of four pastures and were exposed to a Braford bull from April 15 to July 2.

Heifers arrived at Uvalde in mid-December. They were grazed as a single herd on native range with dry grass and green, cool-season forbs during the winter and early spring. Heifers were fed token amounts (<0.125 lb/hd/da) of 20 percent protein cubes to aid in gentling and handling. Cool-season, annual forbs were abundant; therefore, heifers did not require additional protein supplementation. Prior to allotment to test pastures, heifers were palpated, weighed, measured for height, condition scored, and frame scored on March 8, 1985. Heifers

remained in a single herd and continued to graze native range until April 17, when they were allocated to respective grazing pressure treatments. Twenty-five to 27 heifers were allocated to each of four grazing pressure treatment pastures. Heifers were subsequently weighed, measured, and scored at monthly intervals. Heifers were exposed to Braford bulls from April 17 to July 2. Heifers were examined by somascope to determine pregnancy on July 24 and October 18 and were rectally palpated for confirmation on the latter date.

Since these results represent only one year of this study and it would be inappropriate to attempt any conclusions at this time, the decision was made to present only simple means, with no least squares analysis or standard deviations. The purpose is to provide information on current progress and status of this research.

Results and Discussion

Forage available (pounds DM/A) at each of the four grazing pressures is presented for Overton (Table 2) and Uvalde (Table 3). Because of the initial weight of these heifers, heavy grazing pressures were not imposed until near the end of the breeding season. This is shown in the expression of grazing pressure as pounds available forage per 100 lb animal weight. *Ad libitum* intake was restricted on the high grazing pressure pastures at Overton from August to October. The low grazing pressure pasture had an excessive quantity of forage available at all times which allowed for considerable selective grazing by the heifers. The two intermediate grazing pressure pastures were spot grazed with various degrees of selectivity as evidenced by the size and number of ungrazed manure spots.

Range forage conditions at Uvalde were highly favorable under low grazing pressure, with excessive quantities of forage available from April to December. Available forage per cwt of animal under light grazing pressure was approximately four times greater than that under heavy grazing pressure during each month from April to December. Some evidence of spot grazing, limited evidence of browse utilization, and condition of heifers in the heavy treatment indicated that grazing pressure may not have been heavy enough to significantly restrict *ad*

libitum intake during the first four months of trial. Available forage per cwt of animal generally decreased similarly in all pastures throughout the 8-month grazing period.

Table 4 shows the average stocking rates necessary to maintain the different levels of available forage. Stocking rates ranged from 1.77 to 2.11 heifers (750 lb equivalents) per acre at Overton. Stocking rates on the more arid range sites at Uvalde ranged from .04 to .08 heifers per acre. Expressed more appropriately, the stocking rates at Uvalde ranged from 25 to 12 acres per animal. There was a 25- to 45-fold difference in stocking rates between the two locations. Differences in both rainfall and forage species used were primarily responsible for the large differences in stocking rates.

The hybrid bermudagrass sod pastures are very resistant to severe defoliation, and loss of stand due to the grazing pressures used in this trial was not an important factor. However, under the range conditions of Uvalde where bunchgrasses are the primary forage, stand deterioration and brush invasion are directly related to degree of utilization under continuous grazing.

Average daily gains (ADG) of Overton heifers are shown in Table 5. The grazing pressure treatments were in effect from March 4 to October 24. On October 24, all heifers were removed from test pastures and combined into a single herd for wintering-calving purposes. From March to October 24, ADG was .94, 1.45, 1.66, and 1.70 lb/day, respectively, for heifers grazing H, MH, ML, and L grazing pressures. Once the grazing pressure treatment was removed, the ADG of heifers on H increased to approximately 2.5 lb for the next 42-day period (October 24 to December 5).

Heifers assigned to the Uvalde environment remained on grazing pressure treatments from April 17 until December 18 at which time all groups were combined into a single herd for wintering-calving purposes. The ADG of heifers grazing H, MH, ML, and L pastures, respectively, was 0.63, 0.67, 0.77, and 1.04 lb for the April 17-December 18 period (Table 6). Since the grazing pressures at Uvalde were generally lighter than those at Overton (Tables 2-3), differences in ADG between the

TABLE 2. AVAILABLE DRY MATTER FORAGE (AF) AND ANIMAL BODY WEIGHT (BW) AT FOUR LEVELS OF GRAZING PRESSURE FROM OVERTON PASTURES

Date	Grazing Pressure											
	High			Mod. High			Mod. Low			Low		
	AF	BW	AF 100 BW	AF	BW	AF 100 BW	AF	BW	AF 100 BW	AF	BW	AF 100 BW
	—lb/A—			—lb/A—			—lb/A—			—lb/A—		
3-4-85	1236	865	143	1776	1078	165	1927	980	197	2004	951	211
4-1	3499	940	372	2777	1191	233	3170	1095	289	3931	1038	379
5-3	2798	1269	220	3163	1580	200	3098	1481	209	3814	1413	270
5-30	3936	1756	224	2707	2232	121	2845	1604	177	4332	1544	281
7-2	1666	1522	109	799	1752	46	826	1645	50	3089	1604	193
7-31	2388	1921	124	3120	1266	246	3058	1199	255	3996	1227	326
8-27	1262	2130	59	1738	1375	126	2789	1281	218	6420	1345	477
9-24	842	2514	33	1838	1470	125	3389	1385	245	4699	1406	334
10-24	700	1348	37	1250	1540	81	2750	1456	189	4000	1445	277

TABLE 3. AVAILABLE DRY MATTER FORAGE (AF) AND ANIMAL BODY WEIGHT (BW) AT FOUR LEVELS OF GRAZING PRESSURE FROM UVALDE PASTURES

Date	Grazing Pressure											
	High			Mod. High			Mod. Low			Low		
	AF			AF			AF			AF		
	AF	BW	100 BW	AF	BW	100 BW	AF	BW	100 BW	AF	BW	100 BW
	—lb/A—			—lb/A—			—lb/A—			—lb/A—		
4-17-85	778	80	971	1313	68	1939	1072	34	3159	959	24	3949
5-16	680	88	774	807	50	1605	821	35	2337	948	30	3156
6-19	651	81	805	697	41	1692	779	36	2120	860	28	3170
7-24	518	67	775	780	46	1693	991	42	2377	1026	32	3219
8-20	393	51	764	756	49	1537	1086	45	2441	859	26	3261
9-20	400	50	802	516	33	1584	896	38	2382	985	30	3335
10-18	323	53	613	387	33	1183	806	46	1758	741	32	2308
11-20	342	63	547	357	35	1030	821	51	1606	920	42	2186

TABLE 4. AVERAGE STOCKING RATES USED TO MAINTAIN GRAZING PRESSURES AT OVERTON AND UVALDE

Grazing Pressure	Stocking Rates ¹			
	Overton		Uvalde	
	An/A	A/An	An/A	A/An
High	2.11	0.47	.0889	11.8
Mod. High	2.00	0.50	.0592	17.9
Mod. Low	1.80	0.56	.0545	18.7
Low	1.77	0.56	.0407	25.2

¹One animal = 750 lb.

two locations were most likely due to quality of diet rather than to differences in available forage. Nutritive analyses of these samples are in progress to substantiate these ADG data. In general, the ADG of Overton heifers was approximately one-half pound/day more than Uvalde heifers with the exception of the comparison of animals from H pastures from the March to October period. Table 6 shows additional averages of gain for periods which are included in the Overton summaries.

Total weight gain for heifers grazing at four intensities at both locations is illustrated in Figure 1 for periods March to December and March to October. Cumulative monthly body weights are presented in Table 7. As indicated by ADG, total weight gain was greater for heifers on all treatments located at Overton as compared to those located at Uvalde for the March to December period. Heifers averaged 569 lb at Overton and 585 lb at Uvalde in March. By mid-October, Overton heifers averaged 905 lb at Overton and 833 at Uvalde. Heifers at Overton gained from 220 to 397 lb each; whereas, Uvalde-based heifers gained from 231 to 288 lb each from March to October. After the grazing pressure treatments were terminated in October at Overton, heifers showed a substantial increase in body weight, especially those on H pastures. Figure 2 shows the monthly weight progression for heifers on H and L treatments at both locations from March to December.

By using the average stocking rates used to maintain the four levels of grazing pressure (Table 4) and liveweight gains per animal, gains per acre may be calculated (Table 8). Both the March to October and March to December

TABLE 5. AVERAGE DAILY GAIN OF F-1 (BRAHMAN X HEREFORD) HEIFERS STOCKED AT FOUR GRAZING PRESSURES AT OVERTON

Date	No. Days	Grazing Pressure			
		High	Mod. High	Mod. Low	Low
		—lb/hd/day—			
3-4 to 4-1	28	1.79	2.13	2.41	1.77
4-1 to 5-3	32	2.32	2.05	2.42	2.80
5-3 to 5-30	27	1.48	2.13	2.36	2.63
5-30 to 7-2	33	0.60	0.50	0.72	0.89
7-2 to 7-31	29	-1.20	-0.97	-0.49	-0.19
7-31 to 8-27	27	2.94	2.36	2.04	2.90
8-27 to 9-24	28	0.23	1.97	2.45	1.46
9-24 to 10-24	30	-0.52	1.37	1.58	0.85
10-24 to 12-5 ¹	42	2.48	1.46	1.34	1.46
Totals					
3-4 to 10-24	234	0.94	1.45	1.66	1.70
3-4 to 12-5	276	1.20	1.45	1.61	1.66

¹Grazing pressures not in effect during this period. All animals were in a common herd.

periods are presented to illustrate the relationships between gain per animal versus gain per acre at the two locations. Because of the lower carrying capacity of the semi-arid range at Uvalde as compared to the humid pastures at Overton, there was a 20- to 60-fold difference in gain per acre between locations. Gain per acre ranged from 500 to 800 lb at Overton; whereas, gain per acre at Uvalde was in the magnitude of 12 to 20 lb.

The extra gain attributed to the Overton heifers was due to fat deposition (Table 9) rather than overall skeletal growth (Table 10). Heifers at Overton were condition scored nearly two levels higher than heifers at Uvalde. However, all heifers grew in height at the hip from approximately 47 inches at initiation of the trial in March to about 52 inches at termination of the trial in October-November. Frame scores of heifers were taken only at the Uvalde location and indicated close uniformity across all treatment groups (Table 11).

As mentioned earlier, grazing pressures were not severe during the breeding season (March 15 to July 2) and therefore, any differences in pregnancy rate due to pas-

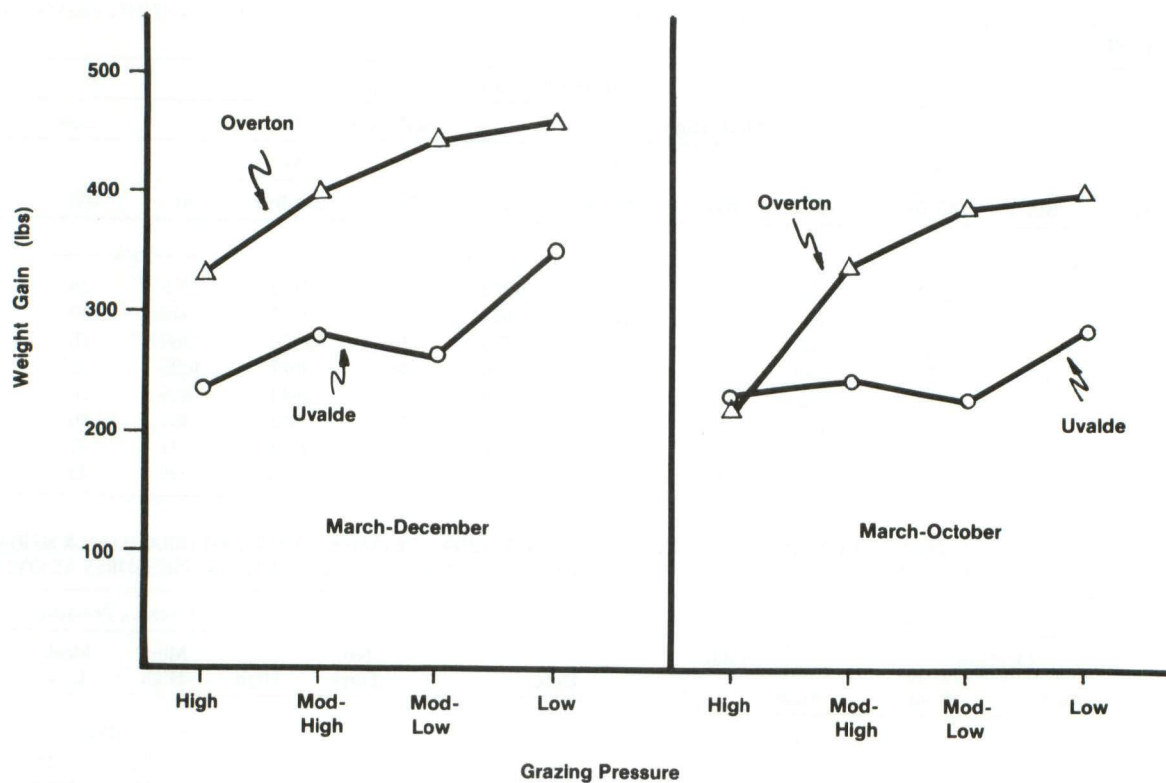


Figure 1. Total weight gained by heifers at each of four grazing pressures.

TABLE 6. AVERAGE DAILY GAIN OF F-1 (BRAHMAN X HEREFORD) HEIFERS STOCKED AT FOUR GRAZING PRESSURES AT UVALDE

Date	No. Days	Grazing Pressure			
		High	Mod. High	Mod. Low	Low
—lb/hd/day—					
3-8 to 4-17 ¹	40	2.05	2.25	1.90	2.30
4-17 to 5-16	29	0.79	1.00	1.24	0.90
5-16 to 6-19	34	0.79	1.85	0.91	1.62
6-19 to 7-24	35	1.34	0.14	0.74	0.89
7-24 to 8-20	27	-0.19	-0.19	0.56	0.07
8-20 to 9-20	31	0.45	0.06	-0.06	0.06
9-20 to 10-18	28	1.54	2.11	1.71	2.86
10-18 to 11-20	33	-0.09	1.55	0.64	1.70
11-20 to 12-18	28	0.11	0.32	0.50	0.14
Totals					
3-8 to 10-18	224	1.03	1.08	1.03	1.29
3-8 to 12-18	285	0.83	0.99	0.93	1.22
4-17 to 10-18	184	0.81	0.83	0.84	1.07
4-17 to 12-18	245	0.63	0.67	0.77	1.04

¹Grazing pressures were not in effect during this period. All animals were in a common herd.

ture assignment is not expected to be attributed to forage availability. The average percent pregnancy for all heifers was similar at both locations at approximately 75 percent (Table 12). At the end of the breeding period, Overton heifers weighed approximately 795 lb and Uvalde heifers weighed approximately 760 lb. And, as evidenced by 1986 calving dates, the majority of heifers at both locations bred near the end of the breeding season. The primary weight gain advantage of heifers at Overton

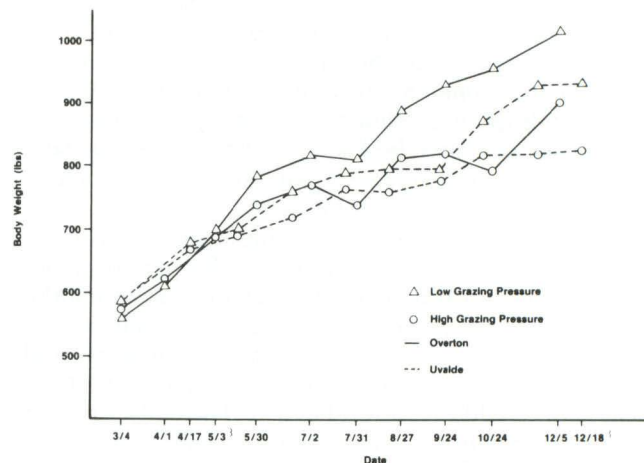


Figure 2. Cumulative body weight of heifers on low and high grazing pressures at either Overton or Uvalde.

occurred during the last half of the grazing season. The 35-lb advantage of Overton-based heifers in July was extended to a 72-lb advantage by mid-October and a 110-lb advantage by December. Thus, forage quality differences between locations are expected to be greater during the mid- to late-summer period. The nitrogen fertilizer and above-average rainfall in July (6.74 inches) for Overton played a significant role in enhancing forage quality and subsequent animal gains during August.

This one-year trial provides some trends which may be substantiated during subsequent years. The second of several trials is in progress and will be combined with the initial trial to more clearly define growth and development of heifers as influenced by environment and available forage.

TABLE 7. CUMULATIVE BODY WEIGHT OF HEIFERS AT EACH OF FOUR GRAZING PRESSURES FROM BOTH OVERTON AND UVALDE

Date	Overton				Uvalde			
	H	MH	ML	L	H	MH	ML	L
	Pounds							
3-4	573	566	576	560				
3-8 ¹					587	588	579	586
4-1	623	625	643	611				
4-17					669	678	655	678
5-3	697	691	720	699				
5-16					692	707	691	704
5-30	737	748	784	786				
6-19					719	770	722	759
7-2	770	772	808	818				
7-24					766	775	748	790
7-31	735	744	794	813				
8-20					761	770	763	792
8-27	815	808	849	891				
9-20					775	772	761	794
9-24	821	863	917	932				
10-18					818	831	809	874
10-24	793	905	965	957				
11-20					821	860	830	930
12-5	903	966	1021	1018				
12-18					824	869	844	934
Total Gain								
Mar.-Oct.	220	339	389	397	231	243	230	288
Mar.-Dec.	330	400	445	458	237	281	265	348
Apr.-Oct.	170	280	322	346	149	153	154	196
Apr.-Dec.	280	341	378	407	155	191	189	256

¹Animals not on grazing pressure treatments, but were grouped in a common herd.

TABLE 9. CONDITION SCORE OF HEIFERS AS INFLUENCED BY FOUR GRAZING PRESSURES AT OVERTON AND UVALDE

Date	Overton				Uvalde			
	H	MH	ML	L	H	MH	ML	L
3-4-85	4.8 ¹	5.4	5.0	4.8				
3-8 ²					4.4	4.7	4.4	4.6
4-17					5.2	5.4	5.0	5.4
5-16					4.9	4.8	5.0	4.8
6-19					4.7	5.1	4.7	4.9
7-24	5.4	6.3	5.8	6.1	4.9	5.2	4.9	5.0
8-20					4.9	4.9	4.9	5.1
9-20	5.9	6.9	7.4	8.3	4.6	4.9	5.0	4.9
10-18	6.0	6.8	7.0	7.1	4.3	4.9	4.8	5.0
11-20					4.5	4.9	5.0	4.9
12-5 ²	6.1	6.6	6.9	7.1				
12-18					4.5	5.0	5.0	5.2

¹Condition score based on scale of 1 = extremely thin, no fat over ribs/withers; 9 = excessively fat with tail ponies.

²Animals not on grazing pressure treatments, but were in a common herd.

TABLE 10. HEIGHT OF HEIFERS GRAZING AT FOUR LEVELS OF AVAILABLE FORAGE THROUGHOUT THE SEASON AT TWO LOCATIONS

Date	Overton				Uvalde			
	H	MH	ML	L	H	MH	ML	L
	inches							
3-4-85	47.6	47.6	48.0	47.6				
4-17					46.5	46.6	46.4	46.7
5-16					50.6	50.3	50.5	50.6
6-19					50.9	51.0	50.7	51.4
7-24	50.3	50.4	50.6	50.0	51.2	51.5	51.3	52.0
8-20					50.8	50.1	51.0	50.6
9-20	51.5	51.8	52.6	52.6	52.1	52.6	52.4	52.8
10-18	51.6	52.2	52.7	52.3	51.8	52.1	52.1	53.1
11-20					51.9	52.1	51.6	52.8

TABLE 8. GAIN PER ANIMAL AND GAIN PER ACRE RELATIONSHIPS FROM FOUR GRAZING PRESSURES AT TWO LOCATIONS

Grazing Pressure	Stocking Rate ¹		Location			
	OVT	UVL	Overton		Uvalde	
			Gain/An	Gain/A	Gain/An	Gain/A
	An/A		Pounds			
High	2.11	.0889	330 ^a	696	237	21
			220 ^b	464	231	21
Mod. High	2.00	.0592	400 ^a	800	281	17
			339 ^b	678	243	14
Mod. Low	1.80	.0545	445 ^a	801	265	14
			389 ^b	700	230	13
Low	1.77	.0407	458 ^a	811	348	14
			397 ^b	703	288	12

¹One animal = 750 lb.

^aNumbers within this row reflect animal performance from March to December.

^bNumbers within this row reflect animal performance from March to October.

TABLE 11. FRAME SCORE OF UVALDE HEIFERS GRAZING AT FOUR LEVELS OF AVAILABLE FORAGE

Date	Uvalde			
	H	MH	ML	L
4-17-85	4.3 ¹	4.4	4.3	4.4
5-16	4.6	4.6	4.4	4.6
6-19	4.7	4.5	4.8	4.7
7-24	4.7	4.8	5.0	5.1
8-20	5.0	4.5	5.0	5.0
9-20	4.7	4.7	4.9	5.0
10-18	4.7	4.9	4.9	5.0
11-20	4.7	4.9	5.0	4.7
12-18	4.7	4.9	4.9	5.2

¹Frame score based on scale of 1=short height; short-bodied; extremely small stature; 7=tall height; long-bodied; extremely large stature.

TABLE 12. PREGNANCY RATE OF HEIFERS AT EACH OF THE TWO LOCATIONS

Grazing Pressure	Location	
	Overton	Uvalde
	Percent	
High	88	72
Mod. High	63	80
Mod. Low	88	69
Low	75	80
Average	78.5	75.3