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## FEEDLOT PERFORMANCE OF STEERS AND HEIFERS GRAZED AT THREE STOCKING RATES ON RYE-RYEGRASS PASTURES

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**Background.** During the winter pasture grazing period (Dec.-May) of both 1997-98 and 1998-99, a total of 272 steers and heifers grazed 'Maton' rye-'TAM 90' ryegrass at three stocking rates (SR). Simmental-sired steers and heifers and Angus x Brahman (F-1) steers were stocked at an average of 1.6, 2.2, and 2.8 600-lb stockers at initiation of grazing in December. Pasture performance for steers only is presented in a companion report. On May 18, 1998 and May 18, 1999, cattle were transported to a commercial feedlot in Hereford, TX. In 1998, each of the three SR groups were divided into "heavy" and "lighter" weight feedlot pens (Pen 1 = heavy wt., Pen 2 = lighter wt). This division was made because of variation in off-pasture weights among each SR, and availability of feedlot space. In 1999, feedlot pen availability did not permit a division among SR treatments based on weight. The primary objective of this feeding experiment was to determine the influence of previous pasture stocking and animal growth rate on feedlot performance attributes and evidence of compensatory gain.

**Research Findings.** Steers and heifers were 25 to 50 lbs heavier from each SR in 1998 compared to 1999 due to forage availability and gain on pasture (Tables 1 and 2). Averaged over the two years, feedlot arrival weights were 946 lb for low SR, 848 lb for medium SR, and 706 lb for high SR; whereas, respective off-truck ADG were 3.64, 3.75, and 3.99 lbs/da, and respective pay-weight ADG were 3.09, 3.25, and 3.60 lb/da. Compensatory gains were noted for both years for low vs high SR; the 2-year averages were primarily due to gain differences among SR in 1999 (Table 2). Differences in days on feed were due to time cattle reached similar visual back fat and individual weight of cattle. The longer feeding periods in 1999 compared to 1998 were due primarily to entry weights. Average consumption ranged from 22 to 26 lb/hd; however, average daily intake increased from low to high SR cattle and ranged from 2.06% to 2.74% body weight (BW). The feed:gain (dry matter) ranged from 4.6:1 to 5.8:1 for "off-truck" and 5.1:1 to 7.2:1 on a "pay weight" basis. Thus, total cost/lb gain was economically advantageous at all SR.

**Application.** Although compensatory gains are usually prominent for cattle deprived of *ad libitum* intake for a prolonged period prior to feedlot finishing, certain biotypes of cattle make biological and economic gains even when entering the feedlot at 900 to 1000 lbs. Knowledge of performance attributes of specific cattle (breeds, types, etc.) allows for economic advantages during partial or total stages of production.

Table 1. Feedlot performance of steers and heifers grazed at three stocking rates (SR) on ryegrass pastures during 1997-98.

ITEM	LOW SR		MEDIUM SR		HIGH SR	
	Pen 1	Pen 2	Pen 1	Pen 2	Pen 1	Pen 2
Number	22	21	22	23	24	26
Arrival date	5-19-98	5-19-98	5-19-98	5-19-98	5-19-98	5-19-98
Feedlot arrival wt (lbs)	1037	896	940	814	819	711
Final feedlot wt (lbs)	1511	1328	1425	1359	1461	1290
Final pay wt (lbs)	1451	1275	1368	1305	1403	1239
Days on feed	114	114	114	148	148	148
Total feedlot gain (lbs)	474	433	485	545	643	579
Total pay wt gain (lbs)	414	379	428	491	584	527
<b>Average daily gain</b>						
•Off truck (lb/d)	4.16	3.79	4.25	3.68	4.34	3.91
•Pay wt (lb/d)	3.63	3.33	3.75	3.32	3.95	3.56
<b>Feed:Gain</b>						
•Off truck (dry)	4.93	4.63	4.90	5.21	4.59	4.70
•Pay wt (dry)	5.65	5.28	5.55	5.79	5.05	5.16
Avg consumption (lb/d)	26.05	22.32	26.47	24.37	25.33	23.33
Avg daily intake (% BW)	2.09	2.06	2.29	2.30	2.28	2.39
<b>Total cost/lb gain</b>						
•Off truck (\$)	.3880	.3809	.3840	.4076	.3545	.3742
•Pay wt (\$)	.4446	.4343	.4351	.4527	.3899	.4109

Table 2. Feedlot performance of steers and heifers grazed at three stocking rates (SR) on ryegrass pastures during 1998-99.

ITEM	LOW SR	MEDIUM SR	HIGH SR
Number	36	48	50
Arrival date	5-19-99	5-19-99	5-19-99
Feedlot arrival wt (lbs)	919	822	649
Final feedlot wt (lbs)	1315	1263	1325
Final pay wt (lbs)	1263	1213	1272
Days on feed	131	131	175
Total feedlot gain (lbs)	423	465	676
Total pay wt gain (lbs)	343	391	604
<b>Average daily gain</b>			
•Off truck (lb/d)	3.23	3.55	3.86
•Pay wt (lb/d)	2.62	2.98	3.45
<b>Feed:Gain</b>			
•Off truck (dry)	5.82	5.33	5.33
•Pay wt (dry)	7.17	6.35	5.96
Avg consumption (lb/d)	23.94	24.12	26.28
Avg daily intake (% BW)	2.19	2.37	2.74
<b>Total cost/lb gain</b>			
•Off truck (\$)	.4110	.3730	.3530
•Pay wt (\$)	.5061	.4441	.3949