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CARCASS CHARACTERISTICS OF STEERS AND HEIFERS PREVIOUSLY GRAZED AT THREE STOCKING RATES AND FEEDLOT FINISHED

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Background. A total of 272 Simmental-sired steers and heifers and Angus x Brahman steers was grazed on rye-ryegrass pastures from December-May in each of 1997-98 and 1998-99. Three stocking rates (1.6, 2.2, and 2.8 600-lb stockers/ac) resulted in a range of ADG from about 1 to 3 lbs/day and final, off-pasture weights of 750 to 1050 lbs/hd. Cattle were fed in a commercial feedlot in Hereford, TX to an estimated visual backfat of about 0.4 inch. At feedlot finishing, cattle were harvested at a commercial packing plant near Hereford. All carcass data were collected by Cattlemen's Carcass Data Service at West Texas A&M University. Two companion reports provide details on the grazing and feedlot phases. The objective of this research was to evaluate effects of pre-feedlot, stocker gain and feedlot entry weight on carcass traits.

Research Findings. In year 1, 1997-98, two pens of cattle were fed for each pasture stocking rate (SR). The division of "heavy" and "lighter" cattle allowed for closer weight grouping and potential finish date for each pen. Three pens (both low SR and the heavy weight medium SR) were fed for 114 days and three pens (light weight medium SR and both high SR) for 148 days (Table 1). Hot carcass weight (HCW) averaged about 800 to 930 lbs across the six pens. With average HCW of 932 lbs for Pen 1-Low SR, this pen could not have been fed much longer without significant price discounts attributable to carcass weight. Except for the heavy weight high SR cattle (Pen 1), dressing percent averaged 63 to 64%. The average USDA Quality Grade ranged from Select- to Select+ for all 6 pens. Cattle fed for 148 days had higher quality grades than those cattle from low SR pastures and fed for 114 days. This is in agreement with most feedlot studies in that days on feed has profound influence on intramuscular (marbling) fat content.

The objective of finishing all pens to a uniform backfat of .4 inch was successfully met by the trained feedlot personnel. Backfat ranged from 0.38 to 0.42-inch average for all 6 pens. Ribeye areas ranged from 14 to 15 square inches and were deemed to be of appropriate size to meet most retail demands. The USDA Yield Grades were acceptable at 2.4 to 2.8. Thus, these genotypes of cattle continued to increase in lean, muscle growth for these feeding periods.

Steers and heifers entering the feedlot in year 2, 1998-99, were approximately 100 lbs lighter than cattle in year 1. Thus, feeding periods were longer for all stocking rates and final live and HCW were slightly less in year 2, but HCW was similar across all three pens. Dressing percent ranged from 62 to 65%. Cattle which were fed for 175 days (high-stocked cattle) were fatter, had

higher USDA Quality Grade, and a higher USDA Yield Grade.

Application. The genetic makeup of steers and heifers used in this experiment graded USDA Select- to Select+ after 114 to 175 days on feed. Given the feedlot entrance weights and previous pasture performance, the target grade for finishing these types of cattle should likely be Select rather than higher grades due to possible discounts related to heavy weight carcasses. In order to economically optimize life-time or component stages of cattle, it becomes mandatory to add weight as cost-effectively as possible. Using grazing systems and animal genotypes which allow for unusually high rates of gain (2.5 to 3 lbs/da) or unusually low rates of gain (<1 lb/da), retained ownership through the feedlot phase often becomes a reality. Knowledge or expectations of feedlot performance and carcass characteristics become of paramount importance in decision-making for reducing potential marketing discounts associated with HCW, Quality Grade, and/or Yield Grade.

Table 1. Carcass traits of steers and heifers grazed at three stocking rates 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
Days on feed	114	114	114	148	148	148
Final live pay wt (lbs)	1451	1275	1368	1305	1403	1239
Hot carcass wt (lbs)	932	807	872	827	883	792
Dressing percent	64.13	63.25	63.74	63.42	60.32	63.96
Marbling score	SL10	SL40	SL30	SL80	SL90	SL50
USDA Quality Grade	Select-	Select-	Select-	Select+	Select+	Select
Fat thickness (in)	0.38	0.42	0.41	0.39	0.39	0.40
Ribeye area (in ²)	14.45	13.96	13.87	14.54	15.02	14.18
Internal fat	2.23	2.14	2.05	2.07	2.04	2.12
USDA Yield Grade	2.80	2.58	2.80	2.39	2.44	2.40

Table 2. Carcass traits of steers and heifers grazed at three stocking rates during 1998-99.

ITEM	LOW SR	MEDIUM SR	HIGH SR
Number	36	48	50
Days on feed	131	131	175
Final live pay wt (lbs)	1263	1213	1272
Hot carcass wt (lbs)	806	788	799
Dressing percent	61.9	64.9	62.8
Marbling score	SL 50	SL 20	SL 90
USDA Quality Grade	Select	Select-	Select+
Fat thickness (in)	0.35	0.31	0.42
Ribeye area (in ²)	14.02	13.40	12.86
Internal fat	1.64	1.54	1.88
USDA Yield Grade	2.87	2.77	3.04