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## Seasonal performance of finishing steers

### Abstract

Analysis of 10 years of closeouts from a western Kansas feedlot demonstrated that steer performance exhibits significant seasonal variation. Steers weighing 700 to 800 lb when placed on feed in September through December had feed conversions roughly 12% higher than those placed in March and April. Although feed conversion varied seasonally, dry matter feed intake varied much less, causing daily gain to mirror feed conversion. Gain was seasonally highest for steers placed in March and April and lowest for those placed in September through December. Cattle feeders should consider these variations in seasonal performance, as they develop profit projections for steers being placed on feed.

### Keywords

Cattlemen's Day, 1991; Kansas Agricultural Experiment Station contribution; no. 91-355-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 623; Beef; Feeding performance; Seasonality; Steers

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## SEASONAL PERFORMANCE OF FINISHING STEERS

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### Summary

Analysis of 10 years of closeouts from a western Kansas feedlot demonstrated that steer performance exhibits significant seasonal variation. Steers weighing 700 to 800 lb when placed on feed in September through December had feed conversions roughly 12% higher than those placed in March and April. Although feed conversion varied seasonally, dry matter feed intake varied much less, causing daily gain to mirror feed conversion. Gain was seasonally highest for steers placed in March and April and lowest for those placed in September through December. Cattle feeders should consider these variations in seasonal performance, as they develop profit projections for steers being placed on feed.

(Keywords: Feeding Performance, Seasonality, Steers.)

### Introduction

Cattle performance in a feedlot has a profound impact on profitability. For example, a 5% increase in dry matter feed/gain conversion from 6.2 to 6.5 can result in more than a \$10/head increase in feed costs alone for finishing yearling steers (using October 1990 dry matter feed costs of \$.078/lb extracted from feedlot closeout summaries reported by Kuhl, [KSU Focus on Feedlots](#) newsletter, November 1990). When developing projected budgets, cattle feeders need to consider factors that may alter performance. Weather is one primary factor beyond the control of feedlots that needs to be considered. Fluctuations in weather lead

to seasonal fluctuations in cattle performance that exceed 5% and may approach 15% from one extreme to the other. This study documents the seasonal variation in feedlot performance associated with finishing yearling steers.

### Experimental Procedures

Monthly closeouts of steers placed on feed from 1980 through 1989 were collected from a feedlot in western Kansas. Seasonal patterns of feed conversion, daily gain, feed intake, and death loss were evaluated based on 1223 lots representing over 250,000 head of 700 to 800 lb steers. Feed conversions were collected on an as-fed basis and converted to a dry matter basis by adjusting the monthly figures to levels that yielded an average annual dry matter feed conversion of 6.4. This adjustment did not change the relationship between monthly feed conversions.

### Results and Discussion

Table 1 presents the monthly averages and standard deviations for dry matter feed conversion, gain, dry matter feed intake, and death loss. Feed conversion exhibited a significant seasonal pattern (Figure 1). Steers weighing 700 to 800 lb placed on feed during the September through December period had average feed conversions of approximately 6.8, which were over 12% higher than feed conversions for similar steers placed on feed in March and April. Variation in feed conversion over time and across pens also differed by season. Steers placed on feed in September through December averaged 45% greater

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variation (plus or minus) in feed conversion than those placed in March and April. This indicates that departures from normal feed conversions can be expected to be 45% greater for steers placed on feed in September through December than for steers placed in March and April.

Daily gain also exhibited a significant seasonal pattern (Figure 2). Steers placed on feed in September through December had gains of roughly 2.90 lb. In contrast, steers placed in March and April had 12% higher gains (3.24 lb). Variation in gain was highest for steers placed on feed in December and lowest for steers placed in May.

Although gain and feed conversion varied seasonally, average dry matter feed intake was relatively constant over the year (Table 1). Average daily dry matter feed intake over the entire feeding period ranged from a high of 19.77 lb for steers placed in January to a low of 18.77 for those placed in May. This indicates that much of the seasonal variation in gain is attributed to variation in feed conversion. That is, because the cattle are consuming essentially the same amount of feed over the entire feeding period, regardless of placement month, variations in gains are a result of differing feed conversions. This conjecture is reinforced by the approximate mirror images exhibited in the seasonal patterns of feed conversion and gain (Figures 1 and 2).

Death loss also varied seasonally (Table 1). The highest death losses were noted for steers placed in November (0.72%), and lowest death losses occurred for those placed in March (0.35%).

**Table 1. Averages and Standard Deviations of Selected Feeding Performance Measures by Month Placed on Feed for 700 to 800 lb Steers, 1980-89**

Month placed On Feed	Feed Conversion <sup>1</sup>		Daily Gain <sup>2</sup>		Feed Intake <sup>3</sup>		Death Loss <sup>4</sup>	
	Avg	SD <sup>5</sup>	Avg	SD <sup>5</sup>	Avg	SD <sup>5</sup>	Avg	SD <sup>5</sup>
January	6.38	0.63	3.12	0.30	19.77	1.19	0.49	0.75
February	6.26	0.49	3.19	0.27	19.91	1.28	0.49	0.69
March	6.04	0.37	3.26	0.26	19.60	1.06	0.35	0.55
April	6.06	0.37	3.22	0.25	19.46	1.04	0.43	0.65
May	6.08	0.39	3.10	0.22	18.77	1.02	0.46	0.73
June	6.16	0.38	3.16	0.25	19.36	0.88	0.47	0.57
July	6.20	0.35	3.21	0.29	19.81	1.24	0.46	0.56
August	6.42	0.45	3.09	0.26	19.71	1.01	0.42	0.56
September	6.78	0.55	2.91	0.28	19.59	0.93	0.61	0.67
October	6.79	0.50	2.90	0.26	19.59	1.13	0.55	0.78
November	6.89	0.52	2.87	0.28	19.65	1.29	0.72	0.97
December	6.79	0.59	2.91	0.35	19.64	1.47	0.58	0.85

<sup>1</sup>Feed/gain, dry matter basis.

<sup>2</sup>Lb per head daily.

<sup>3</sup>Lb dry matter per head daily.

<sup>4</sup>Percent.

<sup>5</sup>Standard deviation.

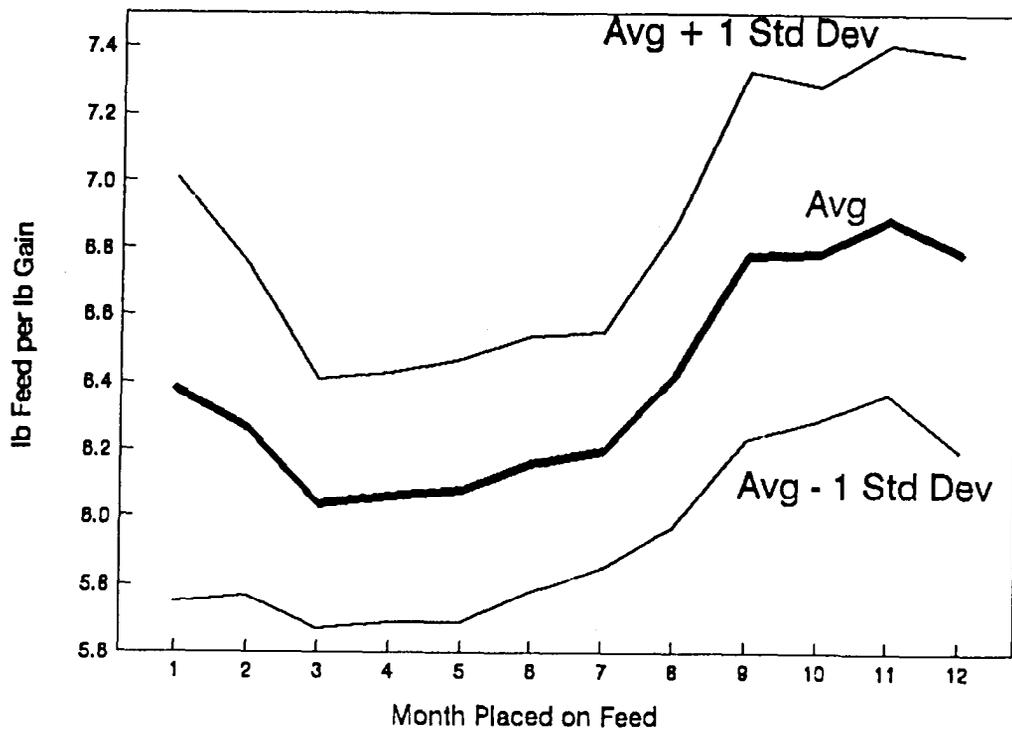


Figure 1. Average Feed Conversion by Month Placed on Feed for 700 to 800 lb Steers

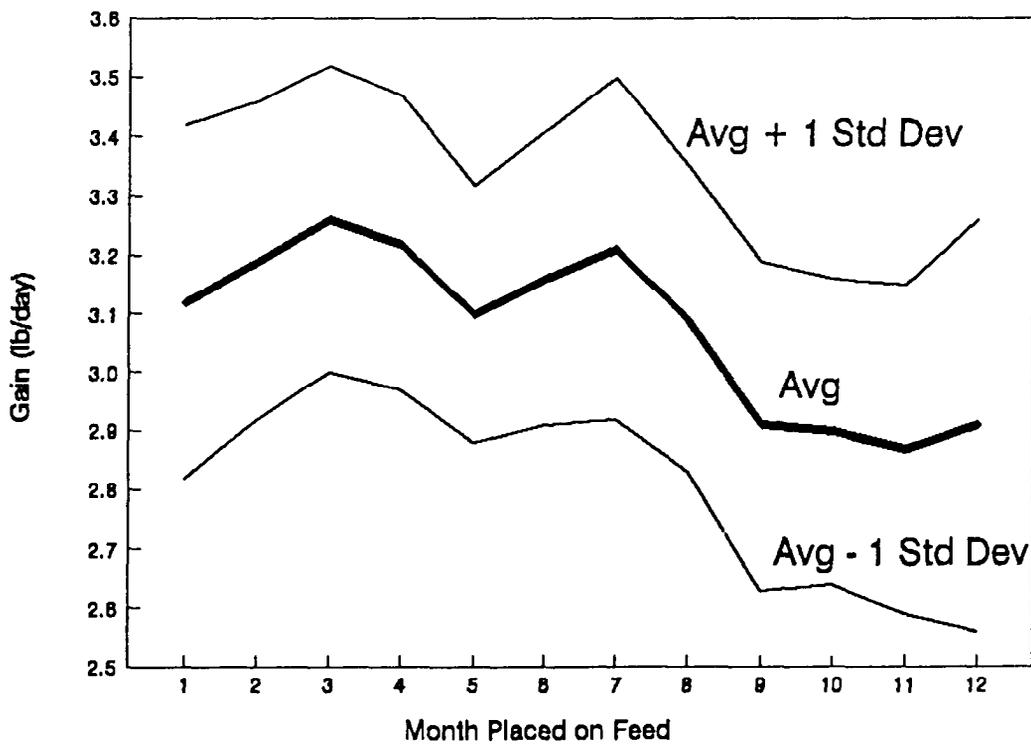


Figure 2. Average Daily Gain by Month Placed on Feed for 700 to 800 lb Steers