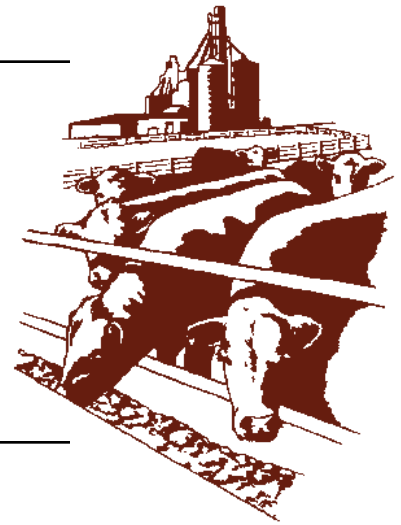


Beef Cattle Handbook



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Seasonal Performance, Cost of Gain, and Profit Patterns for Finishing Steers

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Seasonality of performance, cost of gain, and prices have a profound impact on break-even prices and profits of finishing steers. For example, performance can vary up to 15% from one part of the year to the next. These wide fluctuations in performance translate into a \$3 to \$4 difference in break-even prices. Thus, when developing budget projections, producers need to consider seasonal fluctuations in their expected break-even and profit calculations. This handbook publication documents the seasonal pattern of feed conversion, daily gain, cost of gain, corn price, feeder price, fed cattle price, and profitability.

Feedyard Closeout Study

Results from a recent study (1) conducted at Kansas State University (KSU) can be used to examine the seasonal patterns of performance, cost of gain, prices, and profits. The KSU study utilized closeout data on 6,696 pens of steers placed on feed from January, 1980, through May, 1991, at two western Kansas custom feedyards. Only pens of steers weighing between 600 and 899 lbs. at placement were used. The steers were divided into three 100-lb. placement weight categories.

Seasonality of Performance

Tables 1 through 3 present placement month averages for feed conversion (as fed) and average daily gain for three weight categories of steers. Both feed conversion and average daily gain exhibit a significant seasonal pattern. There is about a 15% difference in feed conversions and average daily gains among some placement months. Steers placed from February

through August had the lowest feed conversions and highest daily gains. Steers placed from October through December had the highest feed conversions and the lowest daily gains.

There are some differences in seasonal performance (feed conversion and average daily gain) among the three weight groups. Steers weighing from 700-899 lbs. at placement had below average performance in January, while the lighter weight steers had above average performance for this month. In fact, for the heavier weight placements, January performance was lower than September performance. Lightweight placements tended to have relatively lower performance in September.

Seasonality of Cost of Gain

Feeding cost of gain consists of feed costs, veterinary costs, processing and yardage fees, interest charges, and miscellaneous costs. The primary performance factors affecting cost of gain are average daily gain, feed conversion, and death loss. Cattle performance, feed grain prices, and forage prices all influence feed costs—the largest component of cost of gain. Feed costs will rise as a result of higher feed conversion rates or death loss. Conversely, feed costs typically decline as rate of gain increases. Increases in veterinary costs and cattle health problems both increase feeding cost of gain.

Tables 1 through 3 report the cost of gain indexes for steers placed between 600 and 899 lbs. over the January, 1980, to May, 1991, placement period. An index value of 100 is the average value. An index of 110 means that value is 10 percent above the average. For

Table 1. Seasonal Indexes and Values of Feeding Costs, Prices, and Performance Factors for Steers Placed Between 600 and 699 lbs.

Placement Month	Cost of Gain Index	Corn Price Index	Feed Conversion 9feed/gain)	Avg. Daily Gain	Profit (\$/head) ^a	Standard Deviation of Profit (\$/head)	Feeder Price Index	Fed Price Index ^b
January	97.80	100.18	7.95	3.13	31.64	61.19	102.56	103.82
February	97.51	100.18	7.83	3.23	3.88	64.86	103.73	99.80
March	96.82	101.58	7.85	3.27	16.01	58.75	102.31	98.80
April	98.13	104.58	7.96	3.24	8.99	60.31	100.21	97.90
May	98.17	107.68	7.93	3.17	14.82	51.49	97.71	97.09
June	96.98	108.07	7.88	3.23	31.45	45.05	97.29	98.18
July	97.51	105.89	8.21	3.10	30.26	39.47	97.87	99.77
August	100.41	99.59	8.35	3.05	28.46	47.69	99.27	99.90
September	103.91	94.75	8.67	2.87	20.94	44.67	98.85	99.06
October	104.20	93.78	8.88	2.79	29.69	57.56	97.76	99.71
November	102.05	95.13	8.55	2.86	52.72	47.67	97.43	101.56
December	99.51	95.80	8.46	2.93	46.31	59.98	98.41	101.28

^a Profit reflects the average profit per head for steers placed on feed during that month.

^b Fed price index is an index of the sale price received by steers placed during that month.

Table 2. Seasonal Indexes and Values of Feeding Costs, Prices, and Performance Factors for Steers Placed Between 700 and 799 lbs.

Placement Month	Cost of Gain Index	Corn Price Index	Feed Conversion 9feed/gain)	Avg. Daily Gain	Profit (\$/head) ^a	Standard Deviation of Profit (\$/head)	Feeder Price Index	Fed Price Index ^b
January	103.84	99.64	8.39	3.11	34.22	66.78	103.32	105.09
February	98.68	99.62	7.98	3.29	7.99	68.45	105.05	103.02
March	97.96	101.27	7.96	3.31	6.16	66.86	103.08	100.00
April	97.70	104.10	7.83	3.34	17.67	66.51	99.91	98.40
May	98.91	106.56	7.92	3.26	19.55	58.20	98.07	97.73
June	98.31	108.89	8.02	3.29	35.79	53.39	97.52	98.53
July	96.75	105.57	7.92	3.37	44.21	40.51	99.06	99.64
August	98.87	99.11	8.27	3.25	32.90	42.73	100.70	100.20
September	103.07	94.06	8.80	3.05	21.87	50.73	100.05	99.13
October	104.27	93.83	8.94	2.99	22.57	51.44	98.76	99.23
November	103.17	94.83	8.83	2.98	36.79	50.99	98.52	100.76
December	102.40	94.82	8.74	3.00	38.93	60.11	99.72	102.71

^a Profit reflects the average profit per head for steers placed on feed during that month.

^b Fed price index is an index of the sale price received by steers placed during that month.

example, the January cost of gain index value for steers placed at 700 to 799 lbs. is nearly 104 (See Table 2). This means that steers placed between 700 and 799 lbs. in January will, on average, have a cost of gain 4 percent higher than the average cost of gain for steers placed at the same weight throughout the year.

The three placement weights have similar seasonal cost-of-gain patterns. Steers placed on feed from February through July had below average cost of gain. All steers placed on feed during October and November had above average cost of gain. Examining each month individually reveals some distinct differences across

Table 3. Seasonal Indexes and Values of Feeding Costs, Prices, and Performance Factors for Steers Placed Between 800 and 899 lbs.

Placement Month	Cost of Gain Index	Corn Price Index	Feed Conversion 9feed/gain)	Avg. Daily Gain	Profit (\$/head) ^a	Standard Deviation of Profit (\$/head)	Feeder Price Index	Fed Price Index ^b
January	102.43	100.37	8.93	3.14	29.36	58.59	103.72	105.39
February	98.12	98.73	8.50	3.21	16.16	59.11	103.82	103.39
March	98.44	102.87	8.25	3.37	-1.65	60.21	102.05	99.81
April	96.43	104.88	8.10	3.36	7.43	76.90	99.99	98.31
May	98.52	107.90	8.14	3.26	18.72	64.80	98.85	97.15
June	97.49	109.83	8.10	3.37	39.05	56.80	97.76	98.61
July	97.17	106.54	7.94	3.47	37.94	56.21	99.39	97.68
August	97.72	99.03	8.31	3.40	38.24	61.02	100.69	100.48
September	99.18	95.25	8.76	3.22	25.40	48.99	100.23	99.22
October	103.50	94.59	9.33	3.04	24.48	50.50	98.90	98.66
November	103.69	95.53	9.09	3.08	34.62	54.78	99.04	100.29
December	102.19	95.78	9.34	3.01	34.93	64.14	100.56	102.13

^a Profit reflects the average profit per head for steers placed on feed during that month.

^b Fed price index is an index of the sale price received by steers placed during that month.

placement weights. Lightweight steers placed in January and December had considerably lower cost of gains than the heavier placements. Heavyweight steers placed in August and September had below average cost of gains, whereas the lightweight steers had above average cost of gains for these two placement months.

Feed grain prices have a large impact on cost of gain. Each \$0.10 change in feed grain prices changes feeding cost gain by \$1.35 per cwt. (2). Indexes of monthly average corn prices are reported in Tables 1 through 3. Corn prices typically trend upward to a peak in June, and then fall to seasonal lows in the last quarter of the year.

Seasonality of Profit

Net returns to steer feeding are subject to risks from fluctuating feeder and fed cattle prices, feed prices, cattle performance, and interest rates. Producers should consider these risks as they develop budget projections and when placing cattle on feed. Rising feeder cattle prices, feed grain prices, interest rates, and poor cattle performance increase costs and break-even levels.

The seasonal pattern of steer feeding profits (dollars per head) for steers placed between 600 to 899 lbs. is illustrated in Tables 1 through 3. The standard deviation of profits is also given. The standard deviation is a measure of the risk of steer feeding profit. A relatively higher standard deviation for any given month indicates that profits for that month are more variable from one year to the next.

Profit levels for 600 to 699 lb. steers are lowest for February and April. Profits increase in late spring and are then relatively stable from June through October

before peaking at the end of the year. Steer feeding profits have the smallest standard deviation for cattle placed from June through September, indicating that profit is less volatile for this placement period. Conversely, less confidence can be placed in predicting profit levels for steers placed from December through April as these months have a larger standard deviation.

Profit levels for 700 to 799-lb. steers are at their seasonal lows for February through May placements. Profits peak both in July and at the end of the year. Steers in this weight category placed during July and August have the smallest profit standard deviations. In other words, more confidence can be placed in predicting profit levels for these placements during these two months. Conversely, steers placed during the first four months of the year at 700 to 799 lbs. have the most volatile or risky profits.

Profits for steers placed on feed weighing between 800 and 899 lbs. reach a seasonal low in March and then increase to a peak for June, July, and August placements. The variability of profit is greatest for heavyweight steers placed in April. Profit levels tend to be more stable for September, October, and November placements.

Seasonal fluctuations in feeder and fed cattle prices have a large impact on steer feeding profits. The index values for feeder steer price and fed steer price are given in Tables 1 through 3. Feeder steer price peaks in February and then declines to its seasonal low in June. Feeder prices rebound in August before declining in September through November. For heavyweight steers, fed price is greatest for December, January, and February placements. For lightweight steers, fed price is

above average for November, December, and January placements and below average for the rest of the year.

Management Recommendations

Seasonal patterns in feed conversions, daily gains, feed prices, and feeder cattle prices have a large impact on break-even price and potential profitability of a pen of cattle. Knowledge of seasonal patterns helps increase the accuracy of cost of gain, break-even, and expected profit calculations. For example, seasonal performance and price patterns can be used by cow-calf and stocker producers to more readily access the expected profitability derived from retaining ownership of cattle through the finishing phase.

Cattle finishers should use seasonal performance, price, and profit information when placing cattle and in the development of marketing plans. Seasonal averages can be used as initial budget estimates. Sensitivity analysis can then be conducted to adjust for cattle quality, weather, and any other factors specific to the pen of cattle being placed.

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