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## Factors Affecting Prices of Calves and Yearlings in Kansas

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### Summary

Data were collected on 85,195 cattle sold in 15 Kansas auctions during October and November 1981. Buyers discounted sick cattle heavily, and discounts were heavier on sick calves than yearlings. The discount for bulls vs. steers increased as weight increased, but the discount for heifers vs. steers decreased with increasing weight. Buyers pay little if any premium for thin cattle, but severely discount very thin or fat cattle. Cattle with average fill sold as well or better than shrunk cattle. Gaunt or tanked cattle were heavily discounted. Best prices were paid for lots of 20 to 40 head, with heavy discounts for lots less than 5. Since the price advantage to uniform lots was small, sorting should be kept to a minimum. Large framed, thick muscled cattle sold best, and smaller framed cattle were discounted more in western than eastern Kansas.

### Introduction

This research was designed to determine management and marketing factors affecting the price of calves and yearlings. We made an effort to place a dollar value on the differences in management and marketing, especially the factors a producer could control.

### Procedure

The data were gathered by trained evaluators at 15 cooperating Kansas auctions. Cattle were evaluated as they went through the ring. Traits evaluated and recorded were price, weight, time of sale, sex, breed, horns, frame, muscle, fleshing, health, fill, uniformity and lot size. A total of 85,915 cattle were evaluated during the study conducted October and November of 1981. The study was a joint effort of the Departments of Animal Science and Industry and Agricultural Economics at Kansas State University.

### Results

The producer can take advantage of many of the price differences we measured simply by adjusting his management and marketing program. In each of the following tables, average prices for the highest selling category are listed. Minus figures are discounts from that price. This paper is a summary of our results. A complete report of results can be obtained by ordering Ag Fact Sheet #MF-667 from Weber Hall, Kansas State University, Manhattan 66506.

### EFFECTS OF HEALTH 77,692 cattle

Health	Percent	<600 lbs		600-900 lbs	
		Steers	Heifers	Steers	Heifers
Thrifty	96.5	\$63.76	\$55.14	\$60.98	\$54.02
Stale	2.6	-2.86	-2.69	-4.57	-2.71
Few Sick	.65	-4.62	-4.00	-7.08	.85
Obviously ill	.2	-15.67	-9.19	-6.48	-9.13
Chronic	.05	-24.78	-21.50	-7.45	-7.61

It will pay to either sell calves fresh off the cow or keep them long enough after weaning to have them straightened out. It is better to keep them until they are eating and have some of their bloom back. Calves in less than healthy categories were discounted \$2.75 to \$25.00 per hundred weight. Sick yearlings were discounted less than sick calves. No one else wants to own your sick cattle anymore than you do.

### EFFECTS OF SEX AND WEIGHT 76,314 cattle

Weight	Percent	57.6%	3.4%	.3%	38.7%
		Steers	Bulls	Bulls & Steers	Heifers
<400	12.4	\$66.26	- 2.74	- .03	-9.46
400-499	25.9	64.10	- 3.80	- .04	-9.05
500-599	21.6	62.06	- 4.58	-1.69	-8.23
600-699	17.6	61.02	- 7.08		-6.94
700-799	16.2	61.20	- 8.03		-7.12
800-899	6.3	60.39	-10.05		-7.10

Castrate calves before going to grass in the spring or before selling in the fall. Bulls sold for \$2.75 to \$10.00 per hundred weight less than steers, depending on what they weighed. Heifer discounts decreased from \$9.50 to \$7.00 as weights increased from 400 to 900 pounds.

Producers should study the steer-heifer price spread. It may pay to sell steers and grow or winter heifers. The price for steers was highest for all weights. Keeping cattle to heavier weights will depend on the producers' cost of production and cash flow situation.

### EFFECTS OF HORNS 48,022 cattle

	Percent	<600 lbs			600-900 lbs		
		Bulls	Steers	Heifers	Bulls	Steers	Heifers
Dehorned	72.6	\$60.39	\$64.15	\$55.31	\$53.06	\$61.21	\$54.42
Horned	8.0	-1.07	-.58	-.24	-1.08	-2.62	-1.72
Mixed	18.6	2.29	.83	.70	4.07	.44	-.31
Tipped	.8	1.42	.24	-1.29	-4.56	-1.87	-1.66

Horned calves sell for about \$1.00 per hundred weight less than calves with no horns, but yearlings with horns are discounted more. Other traits such as grade or breed are more important than horns. In this study, cattle with tipped horns or mixed cattle actually sold for more than either horned or dehorned cattle.

EFFECTS OF CONDITION  
73,455 cattle

	<u>Percent</u>	<u>&lt;600 lbs</u>		<u>600-900 lbs</u>	
		<u>Steers</u>	<u>Heifers</u>	<u>Steers</u>	<u>Heifers</u>
Very thin	.1	-14.32	-5.60	-7.27	
Thin	9.7	+ .19	+ .16	-1.48	- .80
Average	63.0	\$64.07	\$55.35	\$61.14	\$54.09
Fleshy	27.0	- 1.59	-1.12	+ .04	+ .13
Fat	.2	- 6.57	-8.15	-5.65	-3.35

Buyers may say they like thin cattle but the premium is still on bloom and shine. A little fat can cover a multitude of errors, and average fleshed cattle sell for about the same price per hundred weight as thin cattle. Fleshy calves were discounted \$1.00 to \$1.50. Fleshy and average yearlings sell for about the same price. When feed costs are low, it may even pay to sell cattle fleshy.

EFFECTS OF FILL  
73,434 cattle

<u>Fill</u>	<u>Percent</u>	<u>&lt;600 lbs</u>		<u>600-900 lbs</u>	
		<u>Steers</u>	<u>Heifers</u>	<u>Steers</u>	<u>Heifers</u>
Gaunt	.1	-7.99	-4.01	-3.62	+ .31
Shrunk	14.0	+ .08	- .06	- .63	- .09
Average	57.8	\$64.26	\$55.46	\$61.32	\$54.59
Full	27.7	-1.57	-1.14	- .54	- .91
Tanked	.4	-12.90	-11.40	-6.86	-7.79

In our study shrunk and average fill cattle sold for the same price, with full calves discounted about \$1.00 to \$1.50. The producer might just as well sell fill, since there is no premium for shrunk cattle.

EFFECTS OF LOT SIZE  
33,758 cattle

<u>Head/Lot</u>	<u>Percent</u>	<u>&lt;600 lbs</u>		<u>600-900 lbs</u>	
		<u>Steers</u>	<u>Heifers</u>	<u>Steers</u>	<u>Heifers</u>
1	4.1	-3.97	-3.54	-4.06	-4.65
2-5	18.2	-2.47	-1.92	-2.04	-2.45
5-10	22.4	-1.09	- .98	-1.42	-1.88
10-20	22.3	- .77	- .75	- .42	-1.28
20-30	10.4	- .35	\$57.72	- .17	- .81
30-40	7.0	\$67.07	-2.69	- .09	\$57.40
>40	15.6	- .20	-1.58	\$63.74	- .57

The premium is for lots of 20 to 40 head. Singles are discounted \$3.50 to \$5.00 and small lots sell for less than lots of 20 head or more. So, minimize sorting in order to keep lots large.

#### EFFECTS OF WEIGHT SPREAD 73,947 cattle

<u>Weight spread</u>	<u>Percent of total</u>	<u>Steers</u>	<u>Average head/lot</u> <u>&lt;600 lbs</u>	<u>Heifers</u>	<u>Average head/lot</u>
<25	36.6	-2.43	3.50	-2.26	2.7
26-50	45.4	- .62	8.2	- .98	8.6
51-100	15.8	-1.00	11.2	- .63	11.4
>100	2.2	\$65.60	17.7	\$56.93	15.8

  

<u>&lt;600-900 lbs</u>					
<25		-2.33	4.1	-2.96	3.6
26-50		\$62.24	13.9	- .82	10.6
51-100		- .09	18.3	\$56.08	19.1
>100		\$62.24	28.5	- .10	11.0

This table shows that the premium for larger lots is more than the premium for uniformity. Uniform lots are popular as long as they are over 20 head. Don't sort for uniformity and lose the advantage of big lots.

#### THE EFFECTS OF AUCTION SIZE 73,755 cattle

<u>Cattle/Year</u>	<u>Number Auctions</u>
<25,000	3
25-70,000	8
70-110,000	3
>110,000	1

Transportation costs, individual auction management and personal preference of the seller are larger factors than the number of cattle an auction sells per year.

#### EFFECTS OF QUARTILE OF SALE ON PRICE 32,199 cattle evaluated

<u>Quarter of sale</u>	<u>Percent</u>	<u>&lt;600 lbs</u>		<u>600-900 lbs</u>	
		<u>Steers</u>	<u>Heifers</u>	<u>Steers</u>	<u>Heifers</u>
1st	12.2	\$66.02	\$57.05	- .37	- .62
2nd	30.8	- .20	- .61	+ .05	- .30
3rd	37.1	- .94	- .88	\$62.57	\$55.79
4th	19.9	-1.50	-1.27	- .36	- .51

Calves sell for the most money in the first quarter of the auction. They sell for \$1.25 to \$1.50 less in the fourth. The price spread is less than \$1.00 for yearlings but those sold in the second quarter have a slight advantage.

Cattle should be sold in the normal flow of the auction. Other factors are more important than the time within the sale day. Work with your auction manager in advance and have an orderly marketing program.

#### EFFECTS OF FRAME 73,485 cattle

	Percent	<600 lbs		600-900 lbs	
		Steers	Heifers	Steers	Heifers
Large	9.2	\$65.13	\$56.03	\$60.91	\$54.66
Medium	87.8	-.92	-.68	+.32	-.47
Small	3.1	-7.44	-4.25	-3.94	-5.70

In calves, medium frame cattle were discounted \$1.00 and small frame cattle, \$4.25 to \$7.50. Medium and large framed feeder cattle sold at the same price, but small framed feeders were docked \$4.00 to \$5.70 per hundred weight.

#### EFFECTS OF GRADE 73,449 cattle

Frame	Grade	Percent	<600 lbs		600-900 lbs	
			Steers	Heifers	Steers	Heifers
Large	1	8.5	\$65.81	\$56.38	\$61.53	\$55.14
	2	.7	-4.00	-3.59	-3.84	-3.44
	3	.01	-13.15	--	-10.16	--
Medium	4	84.7	-1.51	-.97	-.37	-.87
	5	3.0	-2.74	-1.29	-1.91	-2.27
	6	.09	-8.22	-9.95	-12.84	--
Small	7	2.91	-7.91	-4.66	-4.51	-5.91
	8	.08	-8.04	-2.96	--	--
	9	.01	-25.6	-7.32	--	--

When frame and muscling are combined as grade, large frame thick cattle (Grade 1) sell highest. However, large frame medium muscled cattle (Grade 2) are discounted more than either medium frame thick muscled or medium frame medium muscled cattle (Grades 4 and 5). So, it pays breeders of large frame cattle to select for thick muscling.

EFFECT OF GRADE  
East Half of Kansas (38,043 hd)  
vs. West Half (35,298 hd)

Grade	Percent		<600 lbs		600-900 lbs	
	East	West	East	West	East	West
1	6.6	10.5	\$64.13	\$66.88	\$60.56	\$62.20
2	.4	1.2	-2.68	-4.79	-5.15	-3.47
4	84.5	85.2	-.02	-2.23	+.51	-.47
5	5.1	.6	-1.37	-.36	-1.09	-.45
7	3.4	2.5	-6.12	-9.93	-3.28	-5.73

Different types of farming operations and climates affect the type of cattle in demand. There is a premium for large frame (Grade 1) cattle in the west half of Kansas.

Medium frame (Grade 4) cattle sell as well as Grade 1 in the east. Small frame (Grade 7) cattle are discounted less in the east.

The size of auction had little influence on prices, and is probably much less important than transportation costs, management of the individual auction, and seller's personal preferences.

During the data collection, steer calves averaged \$63.66 and heifers, \$55.07 per CWT, with spreads among the weekly averages of \$3.64 and \$3.95, respectively. During the same time, yearling steers averaged \$60.83 and heifers, \$53.87, with spreads of \$1.62 and \$3.18.