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FEEDER CATTLE  
COSTS AND RETURNS  
1961-1962

UNIVERSITY OF MINNESOTA  
Institute of Agriculture  
and  
UNITED STATES DEPARTMENT OF AGRICULTURE  
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# FEEDER CATTLE COSTS AND RETURNS

1961-1962

A. R. Wells and T. R. Nodland

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## INTRODUCTION

The return over feed costs from feeder cattle fluctuates from year to year and from farm to farm. The variation in returns is accounted for by two primary factors: (1) the price spread between the purchase price and the sale price of the cattle, and (2) the feed cost per pound of gain. This is emphasized by this study of costs and returns for 51 lots of feeder cattle on Southern Minnesota farms in the 1961-1962 feeding season. This information was obtained from records kept by individual cattle feeders and by members of the Southeastern and Southwestern Minnesota Farm Management Services. The purpose of this report is to make available data regarding the average results from feeding operations, to provide examples of individual lot records and to show the relative importance of feeding efficiently and price spread in feeder cattle production.

The data presented cover averages of individual lots of cattle from purchase as feeders to sale of fat cattle. Four different programs are represented: (1) long-fed calves; (2) long-fed yearlings; (3) short-fed yearling steers; and (4) short-fed yearling heifers. Cattle on feed 240 days or less are classified as "short-fed" and those fed for longer periods than 240 days as "long-fed." All lots with an average weight of 500 pounds or less per head at purchase are classed as calves. All lots with an average weight of more than 500 pounds per head at purchase are classed as yearlings.

Simple arithmetic averages are used throughout the report. In computing group averages each lot was given equal weight regardless of the number of animals in it.

PRICES

Monthly prices of feeder cattle at South St. Paul from January 1961 through May 1963 are shown in Figure 1. Southern Minnesota farmers secure their feeder cattle from a variety of sources but the South St. Paul quotations are reasonably representative of price trends during this period.

Price  
per cwt.

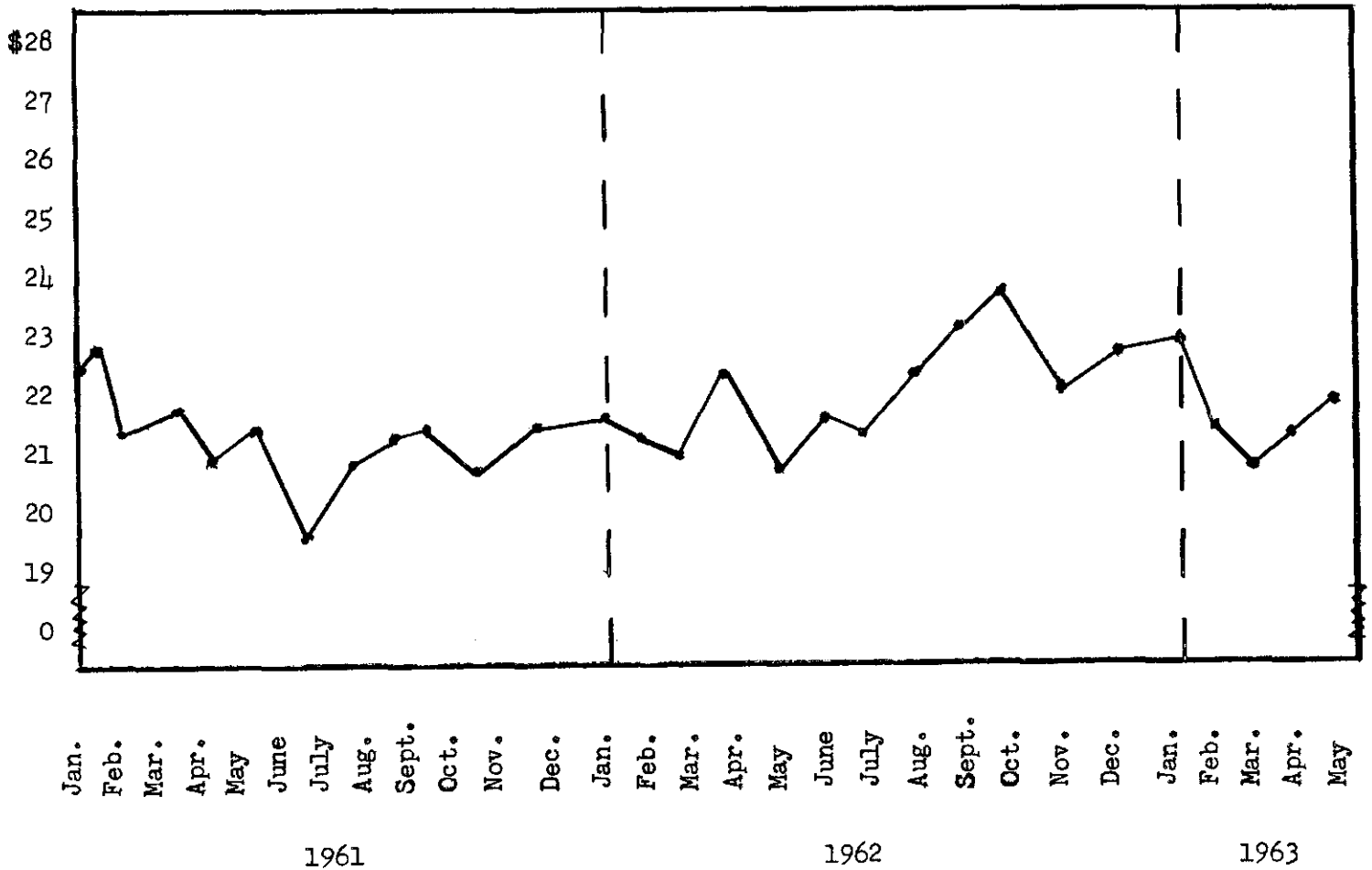


Figure 1. Average monthly prices per 100 pounds of feeders, all weights, South St. Paul, January 1961 -- May 1963 (compiled from Livestock Market News Statistics and Related Data, USDA, PMA, (1961-1963))

The average yearly prices at which the principal feeds used in cattle feeding were charged on the farms studied are shown in Table 1 for 1961 and 1962. The farm-raised feeds are valued at average prices on the farm. Purchased feeds are listed at the prices paid for them. Feeds for which there is no established market, such as corn silage, are valued on the basis of their feeding value relative to similar feeds for which a market price is available. Corn is priced on a dry corn basis. High moisture corn is adjusted to a dry corn basis in the lot summary information.

Table 1. Average Annual Feed Prices

Feed	1961	1962
Alfalfa hay, per ton	\$19.50	\$19.00
Timothy or brome hay, per ton	11.30	11.00
Oats or hay silage, per ton	6.00	5.75
Corn silage, per ton	6.75	6.50
Ear corn, per bushel	.94	.96
Oats, per bushel	.60	.61
Soybean oil meal, per 100 lbs.	4.35	4.40
Pasture, per month per head	2.50	2.50

The average purchase and sales prices per 100 pounds of feeder cattle for the years 1958-1962 by type of feeding program are shown in Figure 2.

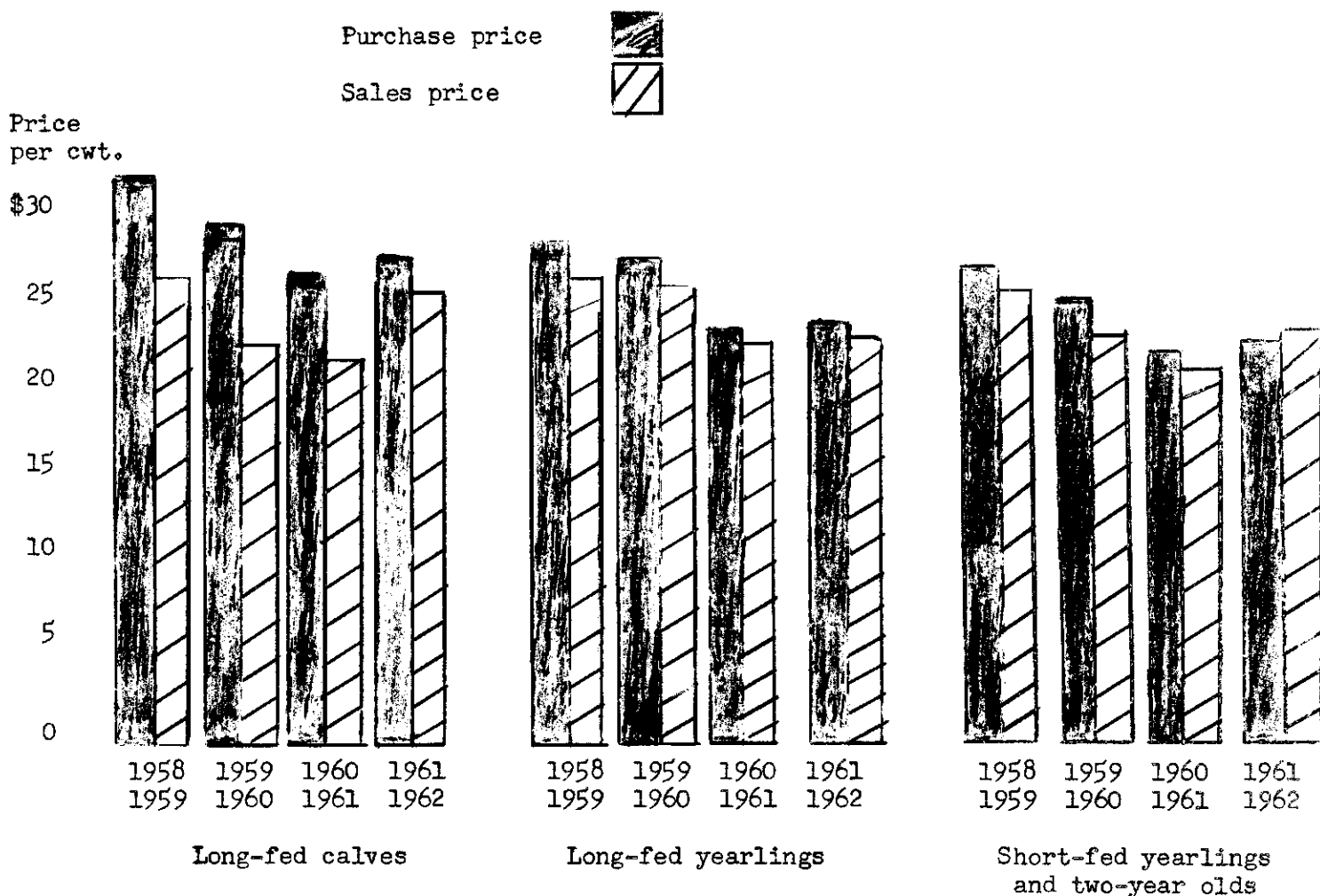


Figure 2. Average purchase and sale prices per 100 pounds of feeder cattle by feeding program on farms studied, 1958-1962

NUMBERS AND WEIGHTS OF CATTLE FED

The individual lots of cattle for the 1961-1962 feeding period included a wide range as to numbers per lot, gain per head, and daily gain. The data in Table 2 indicate the range from high to low for each item and also give a comparison between the various feeding programs used by farmers included in this study.

Daily gains were greatest for the short-fed cattle. This was due in part to their larger size and greater capacity for feed and to the fact that they were pushed along more rapidly. Death losses occurred in 24 of the 51 lots. In a few of the cases it was an important factor limiting the profits for these lots.

Table 2. Range in Numbers and Weights for Individual Lots, 1961-1962

	18 lots long-fed calves			11 lots long-fed yearlings		
	Avg.	High	Low	Avg.	High	Low
Number of head in lot	86	200	12	99	205	18
Avg. purchase weight	406	486	221	570	767	504
Avg. sale weight	940	1080	798	1011	1246	859
Avg. gain in weight/hd.	534	697	421	441	570	301
Avg. daily gain/hd.	1.49	2.07	1.05	1.46	1.90	1.21

	10 lots short-fed yearling heifers			12 lots short-fed yearling steers		
	Avg.	High	Low	Avg.	High	Low
Number of head in lot	77	173	33	69	162	11
Avg. purchase weight	630	759	506	743	849	535
Avg. sale weight	901	999	782	1096	1214	791
Avg. gain in weight/hd.	271	324	211	353	479	256
Avg. daily gain/hd.	1.61	2.11	1.22	2.00	2.56	1.49

## FEEDING DATA

The average numbers and weights of cattle fed, the quantities of feed used and the costs and returns from feeding operations for the 1961-62 feeding season are shown in Tables 3 through 6 for the various feeding programs.

The information on costs and returns includes the average prices paid for cattle, the average cost and returns per lot, per 100 pounds gain in weight and per head. Interest, building, equipment, veterinary, trucking and commission costs and other costs are included for the average of those farmers reporting these items of cost. The numbers in parentheses on lines 33 through 37 indicate the number of lots reporting these costs composing the average.

Net returns or profits in cattle feeding are the result of sales income minus costs. The major items of cost are purchase price of cattle and the feed they consume. Profits result when the total of these plus other costs are below the amount received for the cattle.

Two factors contribute to return over feed cost, (1) a gain in weight produced in the lot at less cost than the selling price, and (2) a positive price spread between the cost of the feeders and that of the fed cattle when sold. The combined effect of these two factors determines how much profit or loss is made on any given lot of feeder cattle. The amount each contributes to the return over feed cost is shown on lines 30 and 31 of the tables. The return from feeding (line 31) is the difference between the feed cost per 100 pounds gain in weight and the selling price per 100 pounds. The remainder of return over feed cost is the price spread minus death loss. The return per \$100 feed cost (line 32) is obtained by dividing the total return by the total feed cost. This tells what was received on the average per \$100 spent for feed. The non-feed costs are included (line 33 to line 37) for those lots reporting these costs.

Table 3. Costs and Returns from Long-fed Calves, 1961-1962

	Average of 18 lots		Individual lot numbers	
			1	2
<u>Number and weight of cattle fed:</u>				
1. Number of head bought	86		60	78
2. Days on farm	367		345	340
3. Days on pasture	22		--	--
4. Percent death loss	1.1		--	2.6
5. Average purchase wt., lbs.	406		342	418
6. Average sales wt., lbs.	940		841	909
7. Gain per head, lbs.	534		499	491
8. Gain per head per day, lbs.	1.49		1.45	1.44
9. Pounds of beef produced	45750		29895	38305
<u>Feed used per:</u>				
	Head	Cwt.	Cwt.	Cwt.
10. Corn (bu. per head)(lbs./cwt.)	53.6	571	656	585
11. Small grain (bu. per hd.)(#/cwt.)	3.0	19	3	8
12. Commercial feed, lbs.	344	67	26	22
13. Total concentrates, lbs.	3445	657	685	615
14. Legume hay, lbs.	1303	246	273	204
15. Other hay, lbs.	133	26	91	--
16. Total dry roughage, lbs.	1436	272	364	204
17. Corn silage, lbs.	1815	315	--	--
18. Grass or oat silage, lbs.	784	145	--	553
19. Total silage, lbs.	2599	460	--	553
20. Pasture, days	22	4	--	--
<u>Price of cattle per:</u>				
	Head	Cwt.	Cwt.	Cwt.
21. Price paid	110.67	27.49	27.75	27.05
22. Price received	237.75	25.32	25.84	26.27
23. Price spread or gross margin	127.08	-2.17	-1.91	-.78
<u>Cost and return per:</u>				
	Lot		Lot	Lot
24. Total value produced	11190.09		7334.59	9807.36
25. Total feed cost	7636.39		4024.35	5625.05
26. Total return over feed	3553.70		3310.24	4182.31
<u>Cost and return per:</u>				
	Head	Cwt.	Cwt.	Cwt.
27. Value produced	127.08	23.88	24.53	25.60
28. Feed costs	89.43	16.86	13.46	14.68
29. Return over feed cost	37.65	7.02	11.07	10.92
30. Return over feed cost from price spread	--	-1.43	-1.31	-.67
31. Return over feed cost from feeding	--	8.45	12.38	11.59
32. Return per \$100 feed cost	--	144	182	174
33. Veterinary costs (2)	.33	.07	.04	--
34. Commission, yardage & trucking (3)	4.17	.87	.40	--
35. Interest (1)	5.26	1.13	--	--
36. Building & equipment costs (2)	3.66	.76	.77	--
37. Total other costs (2)	1.50	.32	.27	--
38. Total listed costs	--	--	14.94	14.68
39. Return over listed costs	--	--	9.59	10.92



Table 3. Costs and Returns from Long-fed Calves, 1961-1962 (continued)

	Individual lot numbers					
	3	4	5	6	7	8
1.	153	188	99	75	111	16
2.	367	299	339	396	278	336
3.	78	--	--	64	--	--
4.	1.3	1.6	1.1	0	--	0
5.	417	418	378	418	438	221
6.	1055	901	905	1080	859	918
7.	638	483	527	662	421	697
8.	1.74	1.62	1.56	1.67	1.54	2.07
9.	97614	90835	52140	49655	46765	11140
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
10.	439	663	635	636	648	631
11.	12	20	--	--	--	43
12.	82	74	53	65	56	30
13.	533	757	688	701	704	704
14.	232	40	221	30	210	215
15.	12	--	82	--	--	--
16.	244	40	303	30	210	215
17.	449	242	--	303	684	--
18.	--	330	--	209	--	--
19.	449	572	--	512	684	--
20.	12	--	--	10	--	--
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
21.	29.07	29.49	28.08	31.26	25.67	33.47
22.	27.28	28.39	26.24	27.69	25.81	26.56
23.	-1.79	-1.10	-1.84	-3.57	+.14	-6.91
	Lot	Lot	Lot	Lot	Lot	Lot
24.	25484.66	24924.51	12993.56	12629.79	12135.93	2713.40
25.	15109.76	15505.78	8177.62	8333.28	8401.08	1865.84
26.	10374.90	9418.73	4815.94	4296.51	3734.85	847.56
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
27.	26.11	27.44	24.92	25.44	25.95	24.36
28.	15.48	17.07	15.68	16.79	17.96	16.75
29.	10.63	10.37	9.24	8.65	7.99	7.61
30.	-1.17	-.95	-1.32	-2.25	+.14	-2.20
31.	11.80	11.32	10.56	10.90	7.85	9.81
32.	169	161	159	152	144	145
33.	--	--	--	--	--	--
34.	--	.90	--	--	--	--
35.	--	--	--	--	--	--
36.	--	--	--	--	--	--
37.	--	--	--	--	--	--
38.	15.48	17.97	15.68	16.79	17.96	16.75
39.	10.63	9.47	9.24	8.65	7.99	7.61

Table 3. Costs and Returns from Long-fed Calves, 1961-1962 (continued)

	<u>Individual lot numbers</u>			
	9	10	11	12
<u>Number and weight of cattle fed:</u>				
1. Number of head bought	32	50	200	135
2. Days on farm	334	367	257	601
3. Days on pasture	--	--	--	79
4. Percent death loss	--	--	--	1.5
5. Average purchase wt., lbs.	448	478	450	409
6. Average sales wt., lbs.	879	1029	942	1040
7. Gain per head, lbs.	431	551	492	631
8. Gain per head per day, lbs.	1.29	1.50	1.91	1.05
9. Pounds of beef produced	13775	27550	98486	85245
<u>Feed used per:</u>				
	Cwt.	Cwt.	Cwt.	Cwt.
10. Corn (lbs./cwt.)	634	414	622	374
11. Small grain (#cwt.)	10	--	24	--
12. Commercial feed, lbs.	33	40	101	54
13. Total concentrates, lbs.	677	454	747	428
14. Legume hay, lbs.	436	305	173	402
15. Other hay, lbs.	--	--	--	--
16. Total dry roughage, lbs.	436	305	173	402
17. Corn silage, lbs.	--	436	467	777
18. Grass or oat silage, lbs.	--	--	--	47
19. Total silage, lbs.	--	436	467	824
20. Pasture, days	--	--	--	13
<u>Price of cattle per:</u>				
	Cwt.	Cwt.	Cwt.	Cwt.
21. Price paid	25.10	28.20	26.95	28.38
22. Price received	24.71	24.11	25.89	24.18
23. Price spread or gross margin	-.39	-4.09	-1.06	-4.20
<u>Cost and return per:</u>				
	Lot	Lot	Lot	Lot
24. Total value produced	3347.26	5666.25	24547.23	18297.79
25. Total feed cost	2317.59	3658.97	17656.75	12643.82
26. Total return over feed	1029.67	2007.28	6890.48	5653.97
<u>Cost and return per:</u>				
	Cwt.	Cwt.	Cwt.	Cwt.
27. Value produced	24.30	20.57	24.93	21.47
28. Feed costs	16.83	13.28	17.93	14.84
29. Return over feed cost	7.47	7.29	7.00	6.63
30. Return over feed cost from price spread	-.41	-3.54	-.96	-2.71
31. Return over feed cost from feeding	7.88	10.83	7.96	9.34
32. Return per \$100 feed cost	144	155	139	145
33. Veterinary costs	--	--	--	--
34. Commission, yardage and trucking	--	--	--	--
35. Interest	--	--	--	--
36. Building and equipment costs	--	--	--	--
37. Total other costs	--	--	--	--
38. Total listed costs	16.83	13.28	17.93	14.84
39. Return over listed costs	7.47	7.29	7.00	6.63

Table 3. Costs and Returns from Long-fed Calves, 1961-1962 (continued)

	Individual lot numbers					
	13	14	15	16	17	18
1.	133	45	43	57	12	65
2.	304	486	292	532	375	360
3.	--	172	--	--	--	--
4.	2.3	4.4	--	3.5	0	1.5
5.	386	486	417	416	350	421
6.	853	1041	860	1079	798	928
7.	467	555	443	663	448	507
8.	1.54	1.14	1.52	1.25	1.20	1.41
9.	62005	24960	19035	37765	5370	32970
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
10.	547	454	827	483	586	445
11.	42	--	--	--	143	44
12.	357	11	53	50	83	11
13.	946	465	880	533	812	500
14.	215	345	244	312	402	173
15.	--	--	71	--	--	219
16.	215	345	315	312	402	392
17.	--	--	--	1573	--	734
18.	--	1298	--	--	--	182
19.	--	1298	--	1573	--	916
20.	--	31	--	--	--	--
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
21.	26.40	20.79	27.75	30.78	28.00	20.61
22.	26.25	21.76	25.81	25.05	24.90	19.00
23.	-.15	+.97	-1.94	-5.73	-3.10	-1.61
	Lot	Lot	Lot	Lot	Lot	Lot
24.	16201.96	5641.34	4564.44	8100.37	1207.31	5825.95
25.	12523.36	4206.09	3764.32	7136.55	1109.27	5396.99
26.	3678.60	1435.25	800.12	963.82	98.04	428.96
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
27.	26.13	22.60	23.98	21.45	22.48	17.67
28.	20.20	16.85	19.78	18.90	20.66	16.37
29.	5.93	5.75	4.20	2.55	1.82	1.30
30.	-.12	+.84	-1.83	-3.60	-2.42	-1.33
31.	6.05	4.91	6.03	6.15	4.24	2.63
32.	130	134	121	114	109	108
33.	.10	--	--	--	--	--
34.	1.32	--	--	--	--	--
35.	1.13	--	--	--	--	--
36.	.74	--	--	--	--	--
37.	.36	--	--	--	--	--
38.	23.85	16.85	19.78	18.90	20.66	16.37
39.	2.28	5.75	4.20	2.55	1.82	1.30

Table 4. Costs and Returns from Long-fed Yearlings, 1961-1962

	Average of 11 lots	Individual lot numbers	
		19	20
<u>Number and weight of cattle fed:</u>			
1. Number of head bought	99	102	43
2. Days on farm	303	282	267
3. Days on pasture	21	--	66
4. Percent death loss	1.2	--	2.3
5. Average purchase wt., lbs.	570	535	656
6. Average sales wt., lbs.	1011	1070	1024
7. Gain per head, lbs.	441	535	368
8. Gain per head per day, lbs.	1.46	1.90	1.38
9. Pounds of beef produced	46644	54615	15835
<u>Feed used per:</u>			
	Head	Cwt.	Cwt.
10. Corn (bu. per head)(lbs. cwt.)	48	581	552
11. Small grain (bu. per hd.)(#cwt.)	.4	3	--
12. Commercial feed, lbs.	252	56	65
13. Total concentrates, lbs.	2953	640	617
14. Legume hay, lbs.	917	215	195
15. Other hay, lbs.	155	34	--
16. Total dry roughage, lbs.	1072	249	195
17. Corn silage, lbs.	2109	520	--
18. Grass or oat silage, lbs.	1013	212	952
19. Total silage, lbs.	3122	732	952
20. Pasture, days	21	7	--
<u>Price of cattle per:</u>			
	Head	Cwt.	Cwt.
21. Price paid	140.19	24.73	26.67
22. Price received	242.39	23.86	26.94
23. Price spread or gross margin	102.20	-.87	+.27
<u>Cost and return per:</u>			
	Lot	Lot	Lot
24. Total value produced	10867.53	14856.49	3778.33
25. Total feed cost	8516.35	8982.17	2487.86
26. Total return over feed	2351.18	5874.32	1290.47
<u>Cost and return per:</u>			
	Head	Cwt.	Cwt.
27. Value produced	102.19	23.05	27.20
28. Feed costs	79.83	17.94	16.45
29. Return over feed cost	22.36	5.11	10.75
30. Return over feed cost from price spread	--	-.80	+.26
31. Return over feed cost from feeding	--	5.91	10.49
32. Return per \$100 feed cost	--	133	165
33. Veterinary costs (1)	.78	.15	.15
34. Commission, yardage and trucking (4)	4.88	1.17	1.03
35. Interest (2)	5.53	1.37	1.20
36. Building and equipment costs (3)	5.38	1.18	.61
37. Total other costs (1)	1.25	.23	.23
38. Total listed costs	--	--	19.67
39. Return over listed costs	--	--	7.53
			8.15

Table 4. Costs and Returns from Long-fed Yearlings, 1961-1962 (continued)

	<u>Individual lot numbers</u>					
	21	22	23	24	25	26
1.	18	205	35	201	139	36
2.	286	263	266	379	310	248
3.	--	--	--	--	--	167
4.	--	1.9	--	2.0	0.7	2.8
5.	566	504	583	560	506	558
6.	964	904	913	1130	1000	859
7.	398	400	330	570	494	301
8.	1.39	1.52	1.24	1.51	1.59	1.21
9.	7170	81875	11545	114575	68670	10855
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
10.	254	677	468	655	624	272
11.	--	--	3	1	13	--
12.	28	81	61	47	46	38
13.	282	758	532	703	683	310
14.	42	98	615	53	125	11
15.	--	49	--	51	--	--
16.	42	147	615	104	125	11
17.	1395	393	710	335	73	891
18.	--	25	260	--	437	--
19.	1395	418	970	335	510	891
20.	--	--	--	--	--	55
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
21.	19.84	26.33	20.74	28.96	28.63	20.50
22.	19.31	25.91	22.88	24.81	25.46	19.51
23.	-.53	-.42	+2.14	-4.15	-3.17	-.99
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
24.	1329.89	20792.94	3076.72	23749.44	15257.88	1918.72
25.	788.75	15217.57	2392.56	17140.15	11327.20	1545.69
26.	541.14	5575.37	684.16	6609.29	3930.68	373.03
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
27.	18.55	25.39	26.65	20.73	22.22	17.68
28.	11.00	18.59	20.73	14.96	16.49	14.24
29.	7.55	6.80	5.92	5.77	5.73	3.44
30.	-.76	-.52	+3.77	-4.08	-3.24	-1.83
31.	8.31	7.32	2.15	9.85	8.97	5.27
32.	169	137	129	139	135	124
33.	--	--	--	--	--	--
34.	--	--	--	--	--	1.96
35.	--	--	--	--	--	1.54
36.	--	--	--	--	--	.70
37.	--	--	--	--	--	--
38.	11.00	18.59	20.73	14.96	16.49	18.44
39.	7.55	6.80	5.92	5.77	5.73	-.76

Table 4. Costs and Returns from Long-fed Yearlings, 1961-1962 (continued)

	<u>Individual lot numbers</u>		
	27	28	29
<u>Number and weight of cattle fed:</u>			
1. Number of head bought	68	140	100
2. Days on farm	376	264	397
3. Days on pasture	--	--	--
4. Percent death loss	0	0.7	3.0
5. Average purchase wt., lbs.	767	507	531
6. Average sales wt., lbs.	1246	952	1061
7. Gain per head, lbs.	479	445	530
8. Gain per head per day, lbs.	1.27	1.69	1.34
9. Pounds of beef produced	32580	62300	53065
<u>Feed used per:</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
10. Corn (bu. per head)(lbs. cwt.)	730	787	1016
11. Small grain (bu. per head)(#cwt.)	--	--	11
12. Commercial feed, lbs.	89	82	51
13. Total concentrates, lbs.	819	869	1078
14. Legume hay, lbs.	86	273	418
15. Other hay, lbs.	--	273	--
16. Total dry roughage, lbs.	86	546	418
17. Corn silage, lbs.	1505	--	--
18. Grass or oat silage, lbs.	227	321	--
19. Total silage, lbs.	1732	321	--
20. Pasture, days	--	--	--
<u>Price of cattle per:</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
21. Price paid	24.34	25.89	27.68
22. Price received	24.62	24.30	25.71
23. Price spread or gross margin	+.28	-1.59	-1.97
<u>Cost and return per:</u>			
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
24. Total value produced	8163.79	14017.23	12601.57
25. Total feed cost	7780.73	13459.08	12558.25
26. Total return over feed	383.06	558.15	43.32
<u>Cost and return per:</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
27. Value produced	25.06	22.50	23.75
28. Feed costs	23.88	21.60	23.67
29. Return over feed cost	1.18	.90	.08
30. Return over feed cost from price spread	+.44	-1.80	-1.96
31. Return over feed cost from feeding	.74	2.70	2.04
32. Return per \$100 feed cost	105	104	100
33. Veterinary costs	--	--	--
34. Commission, yardage and trucking	1.51	--	.16
35. Interest	--	--	--
36. Building and equipment costs	2.24	--	--
37. Total other costs	--	--	--
38. Total listed costs	27.63	21.60	23.83
39. Return over listed costs	-2.57	.90	-.08

Table 5. Costs and Returns from Short-fed Yearling Steers, 1961-1962

	Average of 12 lots	Individual lot numbers		
		30	31	
<u>Number and weight of cattle fed:</u>				
1. Number of head bought	69	11	66	
2. Days on farm	180	110	153	
3. Days on pasture	3	--	--	
4. Percent death loss	1.1	--	--	
5. Average purchase wt., lbs.	743	819	784	
6. Average sales wt., lbs.	1096	1100	1087	
7. Gain per head, lbs.	353	281	303	
8. Gain per head per day, lbs.	2.00	2.56	1.98	
9. Pounds of beef produced	26509	3095	19994	
<u>Feed used per:</u>				
	Head	Cwt.	Cwt.	Cwt.
10. Corn (bu. per hd.)(lbs./cwt.)	50.3	805	678	868
11. Small grain (bu. per hd.)(#/cwt.)	1.1	9	--	--
12. Commercial feed, lbs.	215	59	36	69
13. Total concentrates, lbs.	3065	873	714	937
14. Legume hay, lbs.	851	241	97	225
15. Other hay, lbs.	103	30	--	--
16. Total dry roughage, lbs.	954	271	97	225
17. Corn silage, lbs.	1375	381	--	--
18. Grass or oat silage, lbs.	76	27	323	--
19. Total silage, lbs.	1451	408	323	--
20. Pasture, days	3	1	--	--
<u>Price of cattle per:</u>				
	Head	Cwt.	Cwt.	Cwt.
21. Price paid	\$168.45	\$22.65	\$21.88	\$22.94
22. Price received	261.46	23.71	23.81	25.50
23. Price spread or gross margin	93.01	1.06	1.93	2.56
<u>Cost and return per:</u>				
	Lot		Lot	Lot
24. Total value produced	6884.68		911.31	6424.40
25. Total feed cost	5345.71		485.77	3776.30
26. Total return over feed	1538.97		425.54	2648.10
<u>Cost and return per:</u>				
	Head	Cwt.	Cwt.	Cwt.
27. Value produced	93.01	26.33	29.45	32.13
28. Feed costs	72.82	20.61	15.69	18.89
29. Return over feed cost	20.19	5.72	13.76	13.24
30. Return over feed cost from price spread	--	2.61	5.64	6.63
31. Return over feed cost from feeding	--	3.11	8.12	6.61
32. Return per \$100 feed cost	--	131	188	170
33. Veterinary costs (1)	.23	.08	--	.08
34. Commission, yardage and trucking (1)	9.57	3.16	--	3.16
35. Interest (1)	4.98	1.64	--	1.64
36. Building and equipment costs (1)	1.71	.56	--	.56
37. Total other costs (1)	.90	.30	--	.30
38. Total listed costs	--	--	15.69	24.63
39. Return over listed costs	--	--	13.76	7.50

Table 5. Costs and Returns from Short-fed Yearling Steers, 1961-1962 (continued)

	<u>Individual lot numbers</u>			
	32	33	34	35
<u>Number and weight of cattle fed:</u>				
1. Number of head bought	150	11	162	38
2. Days on farm	204	184	225	223
3. Days on pasture	--	--	33	--
4. Percent death loss	7.0	--	1.2	--
5. Average purchase wt., lbs.	806	830	675	737
6. Average sales wt., lbs.	1214	1145	1154	1073
7. Gain per head, lbs.	408	315	479	336
8. Gain per head per day, lbs.	2.00	1.71	2.13	1.51
9. Pounds of beef produced	61340	3465	77630	12745
<u>Feed used per:</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
10. Corn (bu. per head)(lbs. cwt.)	635	801	673	715
11. Small grain (bu. per hd.)(#cwt.)	--	--	2	31
12. Commercial feed, lbs.	54	7	53	124
13. Total concentrates, lbs.	689	808	728	870
14. Legume hay, lbs.	150	404	165	173
15. Other hay, lbs.	22	--	--	173
16. Total dry roughage, lbs.	172	404	165	346
17. Corn silage, lbs.	769	--	497	--
18. Grass or oat silage, lbs.	--	--	--	--
19. Total silage, lbs.	769	--	497	--
20. Pasture, days	--	--	7	--
<u>Price of cattle per:</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
21. Price paid	24.25	19.76	25.19	25.75
22. Price received	25.32	21.90	24.99	26.34
23. Price spread or gross margin	1.07	2.14	-.20	.59
<u>Cost and return per:</u>				
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
24. Total value produced	16831.15	954.21	19188.94	3520.48
25. Total feed cost	10837.04	617.20	13978.18	2735.43
26. Total return over feed	5994.11	337.01	5210.76	785.05
<u>Cost and return per:</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
27. Value produced	27.44	27.54	24.72	27.62
28. Feed costs	17.67	17.81	18.01	21.46
29. Return over feed cost	9.77	9.73	6.71	6.16
30. Return over feed cost from price spread	2.12	5.64	-.27	1.28
31. Return over feed cost from feeding	7.65	4.09	6.98	4.88
32. Return per \$100 feed cost	155	155	137	129
33. Veterinary costs	--	--	--	--
34. Commission, yardage and trucking	--	--	--	--
35. Interest	--	--	--	--
36. Building and equipment costs	--	--	--	--
37. Total other costs	--	--	--	--
38. Total listed costs	17.67	17.81	18.01	21.46
39. Return over listed costs	9.77	9.73	6.71	6.16



Table 5. Costs and Returns from Short-fed Yearling Steers, 1961-1962 (continued)

	<u>Individual lot numbers</u>					
	36	37	38	39	40	41
1.	86	53	82	13	90	61
2.	168	185	181	142	211	172
3.	--	--	--	--	--	--
4.	--	3.8	--	--	--	1.6
5.	683	719	724	760	849	535
6.	1057	1109	1149	1068	1210	791
7.	374	390	425	308	361	256
8.	2.23	2.11	2.35	2.17	1.71	1.49
9.	32195	20640	34840	4000	32545	15618
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
10.	701	1000	595	1389	1001	610
11.	--	--	73	--	--	--
12.	89	44	103	34	66	26
13.	790	1044	771	1423	1067	636
14.	205	170	258	150	670	231
15.	--	68	--	100	--	--
16.	205	238	258	250	670	231
17.	770	--	1005	--	--	1537
18.	--	--	--	--	--	--
19.	770	--	1005	--	--	1537
20.	--	--	--	--	--	--
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
21.	24.43	24.00	22.51	18.31	23.00	19.84
22.	25.18	24.49	23.32	20.84	24.13	18.79
23.	.75	.49	.81	2.53	1.13	-1.05
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
24.	8551.41	5239.32	8606.76	1083.75	8716.47	2588.32
25.	6805.49	4430.10	7613.38	1088.67	8814.99	2966.25
26.	1745.92	809.22	993.38	-4.92	-98.52	-377.93
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
27.	26.56	25.38	24.70	27.09	26.78	16.57
28.	21.14	21.46	21.85	27.22	27.09	18.99
29.	5.42	3.92	2.85	-.13	-.31	-2.42
30.	1.38	.89	1.38	6.25	2.65	-2.22
31.	4.04	3.03	1.47	-6.38	-2.96	-.20
32.	126	118	113	100	99	87
33.	--	--	--	--	--	--
34.	--	--	--	--	--	--
35.	--	--	--	--	--	--
36.	--	--	--	--	--	--
37.	--	--	--	--	--	--
38.	21.14	21.46	21.85	27.22	27.09	18.99
39.	5.42	3.92	2.85	-.13	-.31	-2.42

Table 6. Costs and Returns from Short-fed Yearling Heifers, 1961-1962

	Average of 10 lots	Individual lot numbers	
		42	43
<u>Number and weight of cattle fed:</u>			
1. Number of head bought	77	173	82
2. Days on farm	170	191	171
3. Days on pasture	16	--	10
4. Percent death loss	1.7	2.9	--
5. Average purchase wt., lbs.	630	646	506
6. Average sales wt., lbs.	901	904	782
7. Gain per head, lbs.	271	258	276
8. Gain per head per day, lbs.	1.61	1.35	1.61
9. Pounds of beef produced	20564	44720	22595
<u>Feed used per:</u>			
	Head	Cwt.	Cwt.
10. Corn (bu. per hd.)(lbs./cwt.)	34.4	711	613
11. Small grain (bu. per hd.)(#/cwt.)	.3	4	--
12. Commercial feed, lbs.	155	59	56
13. Total concentrates, lbs.	2093	774	669
14. Legume hay, lbs.	694	264	47
15. Other hay, lbs.	55	21	--
16. Total dry roughage, lbs.	749	285	47
17. Corn silage, lbs.	850	358	850
18. Grass or oat silage, lbs.	918	365	671
19. Total silage, lbs.	1768	723	1521
20. Pasture, days	16	6	--
			4
<u>Price of cattle per:</u>			
	Head	Cwt.	Cwt.
21. Price paid	144.08	22.92	19.22
22. Price received	213.00	23.67	22.03
23. Price spread or gross margin	68.92	.75	2.81
			1.80
<u>Cost and return per:</u>			
	Lot	Lot	Lot
24. Total value produced	5299.67	12997.06	6592.85
25. Total feed cost	4117.95	8343.40	4328.33
26. Total return over feed	1181.72	4653.66	2264.52
<u>Cost and return per:</u>			
	Head	Cwt.	Cwt.
27. Value produced	68.92	25.53	29.06
28. Feed costs	54.69	20.51	18.65
29. Return over feed cost	14.23	5.02	10.41
30. Return over feed cost from price spread	--	1.86	7.03
31. Return over feed cost from feeding	--	3.16	3.38
32. Return per \$100 feed cost	--	128	156
33. Veterinary costs (1)	2.17	.84	--
34. Commission, yardage and trucking (2)	6.50	2.77	--
35. Interest (2)	3.92	1.70	--
36. Building and equipment costs (2)	5.21	2.34	--
37. Total other costs (1)	.50	.19	--
38. Total listed costs	--	--	18.65
39. Return over listed costs	--	--	10.41

Table 6. Costs and Returns from Short-fed Yearling Heifers, 1961-1962 (continued)

	<u>Individual lot numbers</u>				
	<u>44</u>	<u>45</u>	<u>46</u>	<u>47</u>	<u>48</u>
1.	42	47	33	49	40
2.	202	166	185	187	143
3.	--	30	82	--	--
4.	2.4	--	--	--	--
5.	614	716	605	571	759
6.	935	990	929	862	974
7.	321	274	324	291	215
8.	1.59	1.65	1.75	1.56	1.50
9.	13460	12915	10700	14215	8605
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
10.	455	761	834	724	607
11.	--	6	12	--	--
12.	44	45	54	60	97
13.	499	812	900	784	704
14.	311	472	65	169	--
15.	--	15	37	14	--
16.	311	487	102	183	--
17.	--	--	--	--	2107
18.	--	--	--	1280	103
19.	--	--	--	1280	2210
20.	--	11	25	--	--
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
21.	23.50	22.60	24.31	25.27	23.50
22.	23.32	23.55	24.21	25.39	24.16
23.	-.18	.95	-.10	.12	.66
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
24.	3091.55	3360.31	2570.67	3644.71	2278.62
25.	1848.67	2719.68	2073.42	3007.79	1947.11
26.	1242.88	640.63	497.25	636.92	331.51
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
27.	22.97	26.02	24.02	25.64	26.48
28.	13.74	21.06	19.37	21.16	22.63
29.	9.23	4.96	4.65	4.48	3.85
30.	-.35	2.47	-.19	.25	2.32
31.	9.58	2.49	4.84	4.23	1.53
32.	167	124	124	121	117
33.	--	--	--	--	--
34.	--	--	--	--	2.91
35.	--	--	--	--	2.11
36.	--	--	--	--	3.75
37.	--	--	--	--	--
38.	13.74	21.06	19.37	21.16	31.40
39.	9.23	4.96	4.65	4.48	-4.92

Table 6. Costs and Returns from Short-fed Yearling Heifers, 1961-1962 (continued)

	<u>Individual lot numbers</u>		
	49	50	51
<u>Number and weight of cattle fed:</u>			
1. Number of head bought	169	60	72
2. Days on farm	134	149	173
3. Days on pasture	--	40	--
4. Percent death loss	--	1.7	9.7
5. Average purchase wt., lbs.	622	659	606
6. Average sales wt., lbs.	905	916	817
7. Gain per head, lbs.	283	257	211
8. Gain per head per day, lbs.	2.11	1.72	1.22
9. Pounds of beef produced	47875	15395	15155
<u>Feed used per:</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
10. Corn (bu. per hd.)(lbs./cwt.)	748	1017	665
11. Small grain (bu. per hd.)(#/cwt.)	--	--	--
12. Commercial feed, lbs.	77	75	56
13. Total concentrates, lbs.	825	1092	721
14. Legume hay, lbs.	58	244	726
15. Other hay, lbs.	--	102	39
16. Total dry roughage, lbs.	58	346	765
17. Corn silage, lbs.	627	--	--
18. Grass or oat silage, lbs.	209	--	1386
19. Total silage, lbs.	836	--	1386
20. Pasture, days	--	16	--
<u>Price of cattle per:</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
21. Price paid	21.78	21.63	23.29
22. Price received	22.13	22.35	23.70
23. Price spread or gross margin	.35	.72	.41
<u>Cost and return per:</u>			
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
24. Total value produced	10966.43	3724.16	3770.36
25. Total feed cost	9280.39	3689.24	3941.53
26. Total return over feed	1686.04	34.92	-171.17
<u>Cost and return per:</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
27. Value produced	22.91	24.19	24.88
28. Feed costs	19.39	23.96	26.00
29. Return over feed cost	3.52	.23	-1.12
30. Return over feed cost from price spread	.78	1.84	1.18
31. Return over feed cost from feeding	2.74	-1.61	-2.30
32. Return per \$100 feed cost	118	101	96
33. Veterinary costs	--	.84	--
34. Commission, yardage and trucking	--	2.63	--
35. Interest	--	1.29	--
36. Building and equipment costs	--	.92	--
37. Total other costs	--	.19	--
38. Total listed costs	19.39	29.83	26.00
39. Return over listed costs	3.52	-5.64	-1.12

COMPARISON OF RETURNS FROM PRICE SPREAD AND FROM FEEDING  
FOR THE DIFFERENT CATTLE FEEDING PROGRAMS

The data in Table 7 serve to illustrate the comparative importance of price spread and feed costs in determining cattle feeding profits for cattle of different beginning weights and different lengths of feeding period, as are presented by these lots of long-fed calves, long-fed yearlings, short-fed yearling steers and short-fed yearling heifers.

Returns from feeding are of most importance in the calf feeding program and become relatively less important for long-fed yearlings and least in importance for short-fed yearlings and two-year-olds. Calves are purchased at lighter weights, are fed for a longer period for more gain in weight and put on gain at less cost per pound.

The return from price spread is of most importance for short-fed yearlings and two-year-olds because of their higher initial weight and becomes relatively less important as the purchase weights decrease and the gain in weight increases with the younger and lighter calves. Price spread per 100 pounds for the 1961-1962 lots is greatest for the long-fed calves in comparison with long-fed yearlings and short-fed yearlings. Effects of a high purchase weight on returns from price spread and returns over feed costs are noted in comparing long-fed yearlings with short-fed yearlings. The price spread per 100 pounds is \$-.87 for the long-fed yearlings and \$1.06 for the short-fed yearling steers while the short-fed yearling heifers had \$.75 price spread.

These illustrations serve to emphasize that low feed cost is an important determinant of profit for all types of cattle feeding programs but comparatively more so for calves or light weight cattle. Price spread becomes relatively more important for cattle that are purchased at heavier weights. The higher the purchase weight in relation to the selling weight, the more important price spread becomes. The buying and selling phase of the heavy cattle feeding program becomes extremely important because price spread is one of the main factors determining profits.

LABOR REQUIREMENTS FOR FEEDING CATTLE

The average labor requirements for feeding cattle were determined in a study conducted during the 1956-57 cattle feeding season.<sup>1/</sup> These labor requirements for three feeding systems are presented in Table 8.

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<sup>1/</sup>Johnson, R. G. and Nodland, T. R., "Labor Used in Cattle Feeding," Station Bulletin 451, University of Minnesota Agricultural Experiment Station, March, 1960, pp. 12-15.

Table 7. Returns from Price Spread and from Feeding, 1961-1962

	Long-fed		Short-fed	
	calves 18 lots	yearlings 11 lots	yearling steers 12 lots	yearling heifers 10 lots
Price spread per 100 lbs.	\$-2.17	\$-.87	\$1.06	\$ .75
Return over feed cost from price spread	\$-1.43	\$-.80	\$2.61	\$1.86
Return over feed cost from feeding	\$ 8.45	\$5.91	\$3.11	\$3.16
Return over feed cost per 100 pounds gain	\$ 7.02	\$5.11	\$5.72	\$5.02
Average purchase weight, lbs.	406	570	743	630
Gain per head, lbs.	534	441	353	271
Gain per head per day, lbs.	1.49	1.46	2.00	1.61

Table 8. Hours of Labor, Total per Head and per 100 Pounds Gain in Weight for Three Feeding Programs

	Number of head in the lot						Per 10 added
	20	40	60	80	100	120	
	(hours of labor)						
<u>Long-fed calves (550 lbs. gain)</u>							
Total for 47 wks.	319.01	423.33	525.97	630.29	732.98	835.67	51.67
Per head	15.95	10.58	8.77	7.88	7.33	6.96	
Per 100 lbs. gain	2.90	1.92	1.59	1.43	1.33	1.26	
<u>Long-fed yearlings (500 lbs. gain)</u>							
Total for 36 wks.	221.85	293.70	364.50	436.35	507.09	577.83	35.60
Per head	11.09	7.34	6.08	5.45	5.07	4.82	
Per 100 lbs. gain	2.22	1.47	1.22	1.09	1.01	.96	
<u>Short-fed yearlings (425 lbs. gain)</u>							
Total for 27 wks.	163.03	228.76	293.97	359.70	424.67	489.64	32.66
Per head	8.15	5.72	4.90	4.50	4.25	4.08	
Per 100 lbs. gain	1.92	1.34	1.15	1.06	1.00	.96	

These data are for cattle fed twice a day using conventional hand feeding methods. Included is the labor for hay, grain, and silage feeding; bedding, watering and observation, care and treatment of sick animals, feed grinding, equipment repair, buying and selling, and manure removal using a tractor manure loader.

The three cattle feeding systems upon which the labor requirements are based are typical of those used for long-fed calves, long-fed yearlings, short-fed yearlings and two-year-olds as presented in this report. These three cattle feeding systems are described in the following paragraphs.

Long-fed calves on a liberal roughage ration: Good to choice steer calves weighing about 400 pounds are purchased in the fall. They are fed a limited amount of grain and good hay for the first four weeks. This is followed by a full feed of silage, limited grain, and hay for the next 22 weeks. For the last 21 weeks they are fed a full feed of grain and some hay. In the 47 weeks on feed, these cattle should gain about 550 pounds; they are sold in the early fall at approximately 950 pounds.

Long-fed yearling steers fed a liberal roughage ration: Good to choice yearling steers weighing about 650 pounds are purchased in the fall. They are placed on corn-stalk pasture for the first six weeks. This is followed by a full feed of silage, and limited pasture grain and hay for the next 12 weeks. For the last 18 weeks a full feed of grain with hay is fed. In the 36 weeks on feed these cattle should gain about 500 pounds; they are sold in the early summer at approximately 1150 pounds.

Short-fed yearling steers fed a liberal grain ration: Good to choice yearling steers weighing about 700 pounds are purchased in the fall and are put on cornstalk pasture for the first three weeks. This is followed by a full feed of grain with hay for the next 24 weeks. In the 27 weeks on feed these cattle should gain about 425 pounds; they are sold in the late spring at approximately 1125 pounds.

For all three cattle feeding systems the labor requirements per head and per 100 pounds gain in weight decrease when larger numbers of cattle are fed. These economies of labor are obtained by spreading the fixed time needed in doing each task over a greater number of animals. The lower labor requirements per 100 pounds gain for the yearlings than for the calves are due mainly to the higher rate of gain for the yearlings. For small lots of cattle the short-fed yearlings require less labor per 100 pounds of gain than the long-fed yearlings. This difference is largely explained by the fact that for the long-fed yearlings the feeding program includes silage while for the short-fed yearlings silage is not fed. Silage feeding requires a large amount of time per head for small lots and therefore increases the labor requirements.

#### ESTIMATED RETURNS OVER ALL COSTS PER HOUR OF LABOR

The return over feed costs does not give the complete picture as to returns for feeding cattle. In Table 9 is presented the estimated return to labor and management per 100 pounds gain in weight and the return per hour of labor for each of the feeding programs in 1961-1962.

Interest is computed at 6.5 percent of the purchase value times the fraction of the year the cattle were on the farm. Power, equipment, shelter and miscellaneous cash costs are average costs based on detailed cost studies.<sup>2/</sup> This includes fixed costs for shelter and equipment, such as depreciation.

The hours of labor spent per 100 pounds gain are based on the detailed labor study carried out during the 1956-57 feeding season, as reported in Table 8. Labor requirements are reported on the basis of 80 head in a lot for all feeding systems.

The return per hour of labor is the return for each hour spent to pay for the labor used and give a return for management. The estimated average return per hour in 1961-1962 for the four feeding programs was \$1.57.

The costs and returns upon which the table is based will vary from farm to farm and from year to year. The individual feeder can determine his interest and other costs for his lot and subtract this from his return over feed costs to get his return for labor and management. Dividing this by the number of hours spent per 100 pounds gain will give the return per hour of labor.

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<sup>2/</sup> Hasbargen, P. R., and Pond, G. A., "Planning Farms for Increased Profits," University of Minnesota Station Bulletin No. 445, December, 1957.



Table 9. Estimated Returns per Hour of Labor from Feeder Cattle  
(Adjusted to lot size of 80 head)

	18	11	12	10
NUMBER OF LOTS	Long-fed calves	Long-fed yearlings	Short-fed yearling steers	Short-fed yearling heifers
Value produced per 100 pounds gain	\$23.88	\$23.05	\$26.33	\$25.53
Cost per 100 pounds gain				
Feed costs	\$16.86	\$17.94	\$20.61	\$20.51
Interest at 6.5%	1.37	1.72	1.53	1.61
Miscellaneous cash	.50	.50	.50	.50
Power	.40	.40	.40	.40
Equipment	.30	.30	.30	.30
Shelter	.65	.65	.65	.65
<b>TOTAL</b>	\$20.08	\$21.51	\$23.99	\$23.97
Return to labor and management	\$ 3.80	\$ 1.54	\$ 2.34	\$ 1.56
Hours of labor spent*	1.65	1.49	1.21	1.51
Return per hour of labor	\$ 2.30	\$ 1.03	\$ 1.93	\$ 1.03
Number of days on farm	367	303	180	170
Gain per head, lbs.	534	441	353	271

\*Adjusted for number of days on farm and the gain per head.

Table 10. A Four-year Comparison of Feeder Cattle Costs and Returns

	Long-fed calves			
	1958-59 average 39 lots	1959-60 average 83 lots	1960-61 average 28 lots	1961-62 average 18 lots
<u>Number and weight of cattle fed:</u>				
1. Number of head bought	69	94	77	86
2. Days on farm	313	326	326	367
3. Days on pasture	11	11	7	22
4. Percent death loss	1.2	1.0	.9	1.1
5. Average purchase weight, lbs.	418	433	410	406
6. Average sales weight, lbs.	974	1007	943	940
7. Gain per head, lbs.	556	574	533	534
8. Gain per head per day, lbs.	1.8	1.77	1.63	1.49
9. Pounds beef produced per lot	38229	55324	42549	45750
<u>Feed used per 100 lbs. gain:</u>				
10. Corn, lbs.	529	520	516	571
11. Small grain, lbs.	32	12	18	19
12. Commercial feed, lbs.	59	59	53	67
13. Total concentrates, lbs.	620	591	587	657
14. Legume hay, lbs.	184	158	273	246
15. Other hay and stover, lbs.	11	10	46	26
16. Total dry roughage, lbs.	195	168	319	272
17. Silage, lbs.	425	395	326	460
18. Pasture, days	2	1	2	4
<u>Price of cattle:</u>				
19. Price paid per 100 pounds	\$33.51	\$29.60	\$26.50	\$27.49
20. Price received per 100 pounds	25.09	23.81	22.89	25.32
21. Price spread, per 100 pounds	-8.42	-5.79	-3.61	-2.17
<u>Cost and returns per 100 lbs. gain:</u>				
22. Value produced	\$18.62	\$19.44	\$20.13	\$23.88
23. Feed costs	15.67	14.65	14.99	16.86
24. RETURN OVER FEED COSTS	\$ 2.95	\$ 4.79	\$ 5.14	\$ 7.02
25. Return over feed cost from price spread	\$-6.47	\$-4.37	\$-2.75	\$-1.43
26. Return over feed cost from feeding	9.42	9.16	7.89	8.45
27. Return per \$100 feed cost	\$123.00	\$138.00	\$138.00	\$144.00
28. Estimated costs other than feed and labor <sup>2/</sup>	\$ 2.79*	\$ 3.16*	\$ 3.03*	\$ 3.22*
29. Estimated return to labor & management	\$ .16	\$ 1.63	\$ 2.11	\$ 3.80
<u>Returns to labor:</u>				
30. Estimated hours of labor**	1.59	1.40	1.48	1.61
31. Estimated return per hour of labor	\$ .10	\$ 1.16	\$ 1.43	\$ 2.36
32. Estimated return per head to labor & mgt.	\$ .89	\$ 9.36	\$11.25	\$20.29

<sup>2/</sup>Hasbargen, P. R., and Pond, G. A., "Planning Farms for Increased Profits," University of Minnesota Station Bulletin 445, December, 1957.

\*Interest charge adjusted according to purchase value and time period lot was held.

\*\*Adjusted for size of lot, number of days on farm and gain per head.

Table 10. A Four-year Comparison of Feeder Cattle Costs and Returns (continued)

	Long-fed yearlings				Short-fed yearlings and two-year-olds			
	1958-59	1959-60	1960-61	1961-62	1958-59	1959-60	1960-61	1961-62
	average 8 lots	average 17 lots	average 21 lots	average 11 lots	average 20 lots	average 40 lots	average 21 lots	average 22 lots
1.	67	66	78	99	58	80	61	72
2.	286	306	292	303	178	185	185	175
3.	23	23	29	21	13	8	8	9
4.	.5	.7	1.2	1.2	.5	.4	1.0	1.4
5.	621	620	596	570	697	689	691	692
6.	1070	1157	1061	1011	1066	1080	1042	1008
7.	449	537	465	441	369	391	351	316
8.	1.6	1.76	1.63	1.46	2.1	2.17	1.90	1.82
9.	27608	36031	37649	46644	22209	31273	22535	23807
10.	627	600	598	581	603	591	623	763
11.	24	6	9	3	12	10	8	6
12.	<u>43</u>	<u>53</u>	<u>59</u>	<u>56</u>	<u>68</u>	<u>51</u>	<u>58</u>	<u>59</u>
13.	694	659	666	640	683	652	689	828
14.	363	170	226	215	191	175	222	252
15.	<u>6</u>	<u>35</u>	<u>15</u>	<u>34</u>	<u>48</u>	<u>15</u>	<u>6</u>	<u>26</u>
16.	369	205	241	249	239	190	228	278
17.	202	533	611	732	340	375	824	552
18.	5	5	7	7	--	2	2	3
19.	\$28.93	\$28.14	\$24.13	\$24.73	\$27.42	\$25.49	\$22.11	\$22.77
20.	26.31	25.30	22.24	23.86	25.92	24.81	21.81	23.70
21.	-2.62	-2.84	-1.89	-.87	-1.50	-.68	-.30	.93
22.	\$23.77	\$21.97	\$19.86	\$23.05	\$22.74	\$23.84	\$21.45	\$25.97
23.	<u>18.26</u>	<u>16.72</u>	<u>17.68</u>	<u>17.94</u>	<u>16.98</u>	<u>15.49</u>	<u>17.93</u>	<u>20.56</u>
24.	\$ 5.51	\$ 5.25	\$ 2.18	\$ 5.11	\$ 5.76	\$ 8.35	\$ 3.52	\$ 5.41
25.	\$-2.54	\$-3.33	\$-2.37	\$ -.80	\$-3.18	\$ -.97	\$ -.36	\$ 2.28
26.	8.05	8.58	4.55	5.91	8.94	9.32	3.88	3.13
27.	\$135.00	\$137.00	\$117.00	\$133.00	\$135.00	\$161.00	\$126.00	\$130.00
28.	\$ 3.10*	\$ 3.38*	\$ 3.46*	\$ 3.57	\$ 3.31*	\$ 3.33*	\$ 3.28*	\$ 3.40*
29.	\$ 2.41	\$ 1.87	\$-1.28	\$ 1.54	\$ 2.45	\$ 5.02	\$ .24	\$ 2.01
30.	1.16	1.17	1.37	1.39	1.23	1.06	1.36	1.36
31.	\$ 1.00	\$ 1.60	\$ -.93	\$ 1.11	\$ 1.99	\$ 4.74	\$ .18	\$ 1.48
32.	\$10.82	\$10.04	\$-5.95	\$ 6.79	\$ 9.04	\$19.63	\$ .84	\$ 6.35

Table 10 presents a four-year comparison of feeder cattle costs and returns. The estimated returns per hour of labor and estimated returns to management and labor per head indicate a wide variation in returns over the four feeding periods, 1958-1962.

### DETERMINING PROFIT PROSPECTS

The selling price required to cover all costs (feed, interest, buildings, equipment and miscellaneous cash costs) and provide a return for labor and management depends on three main factors. The factors are: (1) the level of feeder cattle prices; (2) the cost of putting on a pound of gain; and (3) the weight and type of cattle fed.

The level of feeder cattle prices in the future is difficult to estimate. In making an estimate, number of cattle on feed and demand prospects for the various classes of feeder cattle are factors to be considered. Market outlook publications are sources of this type of information.

The cost of putting on a pound of gain depends upon the price of feeds, the weight and finish to which animals are fed, the percent death loss, the efficiency of feed utilization and age of the animals, and the ability of the farmer as a cattle feeder.

Profit prospects for the coming feeding season can be calculated by using the following work sheet. Past records of feed requirements over a period of years for comparable types of cattle fed to similar weights and finish should be used as a basis for the calculations. For farmers who do not have feed records the averages shown in Tables 11 and 12 of this report will provide data which can be used.

Table 11. Feed Requirements Based on 1953-59 Lot Averages

	Long-fed calves	Long-fed yearlings	Short-fed two-year-olds
Purchase weight	400 lbs.	622 lbs.	722 lbs.
Gain	550 lbs.	500 lbs.	340 lbs.
<u>Requirements per head:</u>			
Corn (bu.)	48	47	40.3
Small grains (bu.)	3.8	1.8	2.4
Supplement (lbs.)	244	223	215
All hay (tons)	.71	.77	.52
Silage (tons)	1.79	1.75	1.06
Pasture (days)	15	41	21
Labor (hours)	(See Table 8 for labor requirements by size of lot)		
Interest	6.5%	6.5%	6.5%
Miscellaneous costs	\$1.10 per cwt.	\$1.10 per cwt.	\$1.10 per cwt.
Overhead, shelter and equipment costs	\$ .75 per cwt.	\$ .75 per cwt.	\$ .75 per cwt.

STEP 1. Determine cost of producing finished animal<sup>4/</sup>

(a) Original cost per head.....(wt.) x \$ \_\_\_\_\_ (price) = \$ \_\_\_\_\_

(b) Feed and other costs per head:

<u>Feed cost</u>	<u>Amount fed</u>	<u>Price</u>	<u>Cost</u>
Corn (bu.)	_____	_____	_____
Small grain (bu.)	_____	_____	_____
Supplement (lbs.)	_____	_____	_____
All hay (tons)	_____	_____	_____
Silage (tons)	_____	_____	_____
Pasture (days)	_____	_____	_____
Total feed cost.....			= \$ _____

Estimated other costs:

Labor cost \_\_\_\_\_ (hrs. per head) x \$ \_\_\_\_\_ (per hour) = \$ \_\_\_\_\_  
 Interest \$ \_\_\_\_\_ (original cost per head x \_\_\_\_\_ (percent) = \$ \_\_\_\_\_  
 (interest rate for  
 number of months on feed)  
 Miscellaneous costs<sup>5/</sup> \_\_\_\_\_ (lbs. gain) x \$1.10 (per cwt.) = \$ \_\_\_\_\_  
 Other overhead costs for equipment and shelter:  
 \_\_\_\_\_ (lbs. gain) x \$ .75 (per cwt.) = \$ \_\_\_\_\_

(c) Total cost per head..... = \$ \_\_\_\_\_

STEP 2. Determine selling price you need to cover costs

Divide:  $\frac{\text{total cost per head}}{\text{sales weight}}$  = \_\_\_\_\_ = \$ \_\_\_\_\_

STEP 3. Your estimated sale value of steer

\_\_\_\_\_ cwt. x \$ \_\_\_\_\_ Your estimated price = \$ \_\_\_\_\_  
 Profit per head = \$ \_\_\_\_\_

<sup>4/</sup>Routhe, Hal, Thomas, Kenneth H., and Johnson, Roger, "How Does the Level of Feeder Prices Affect Cattle Feeding Profits?" Report, Agricultural Extension Service, University of Minnesota, September, 1957.

<sup>5/</sup>Adapted from Hasbargen, P. R., and Pond, G. A., "Planning Farms for Increased Profits," University of Minnesota Station Bulletin 445, December, 1957.

Examples of Various Feeding Programs

Long-fed steer calves--good to choice grade

STEP 1. Determine cost of producing finished animal

(a) Original cost per head = 400 lbs. @ \$27.00 per cwt..... = \$108.00

(b) Feed and other costs per head: 550 lbs. gain

<u>Feed cost</u>	<u>Amount fed</u> <sup>6/</sup>	<u>Price</u>	<u>Cost</u>
Corn (bu.)	48 bu.	\$ .96	\$46.08
Small grains (bu.)	3.8 bu.	.61	2.32
Supplement (lbs.)	244 lbs.	.04	9.76
All hay (tons)	.71 tons	19.00	13.49
Silage (tons)	1.79 tons	6.50	11.64
Pasture (days)	15 days	.083	1.25

Total feed cost..... = \$ 84.54

Estimated other costs

Labor cost 7.88 hours per head x \$1.50 per hour  
(80 head basis)..... = \$ 11.82

Interest: \$108.00 (original cost per head) x 6.5 (percent)  
(number of days on farm - 329)..... = \$ 6.33

Miscellaneous costs: 550 lbs. gain x \$1.10 per cwt.  
(includes only variable costs)..... = \$ 6.05

Other overhead costs for equipment and shelter:  
(550 lbs. gain x \$ .75 per cwt.)..... = \$ 4.13

(c) Total cost per head..... = \$220.87

STEP 2. Determine selling price farmer must receive to cover all costs

Total cost per head =  $\frac{\$220.87}{950}$  = \$23.25

<sup>6/</sup>See Table 11 for feed requirements.

Table 12. Feed Requirements Based on 1961-1962 Lot Averages

	Long-fed calves	Long-fed yearlings	Short-fed yearling steers	Short-fed yearling heifers
<b>NUMBER OF LOTS</b>	18	11	12	10
Purchase weight	406	570	743	630
Gain in weight	534	441	353	271
Days on farm	367	303	180	170
Gain per head per day	1.49	1.46	2.00	1.61
<u>Requirements per head:</u>				
Corn (bu.)	53.6	48.0	50.3	34.4
Small grain (bu.)	3.0	.4	1.1	.3
Supplement (lbs.)	344	252	215	155
All hay (tons)	.72	.54	.48	.37
Silage (tons)	1.30	1.56	.73	.88
Pasture (days)	22	21	3	16
Labor (hours)	8.79	6.56	4.28	4.08
Interest (percent)	6.5	6.5	6.5	6.5
<u>Requirements per cwt.:</u>				
Miscellaneous cost	\$1.10	\$1.10	\$1.10	\$1.10
Overhead cost for shelter and equipment	\$ .75	\$ .75	\$ .75	\$ .75