

**FEEDER CATTLE
COSTS AND RETURNS**

1959 - 1960

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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 152 lots of feeder cattle on Southern Minnesota farms in the 1959-1960 feeding season. This information was obtained from records kept by individual cattle feeders and by members of the Southeastern, Southwestern, and West Central Minnesota Farm Management Services. The purpose of this report is to make available data regarding the average results from feeding operations, to show the relative importance of feeding efficiently and price spread in feeder cattle production, and average labor requirements as affected by feeding program and size of lot.

* Assistance of H. G. Routh and Paul Hasbargen in the preparation of this report is appreciated.

The data presented cover averages of individual lots of cattle from purchase as feeders to sale of fat cattle. Eight different programs and a miscellaneous group are represented: (1) long-fed steer calves; (2) long-fed heifer calves; (3) long-fed mixed calves; (4) long-fed yearling steers; (5) short-fed yearling steers; (6) short-fed yearling heifers; (7) long-fed mixed yearlings; and (8) short-fed mixed yearlings. Cattle on feed 240 days or less are classified as "short-fed" and those fed for longer periods than 240 days as "long-fed." "Mixed" groups refer to lots where both heifers and steers were combined and fed in the same lot. 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

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 1959 and 1960. 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	1959	1960
Alfalfa hay, per ton	\$19.75	\$19.50
Timothy or brome hay, per ton	11.50	11.20
Oats or hay silage, per ton	6.10	6.00
Corn silage, per ton	6.60	6.50
Ear corn, per bushel98	.96
Oats, per bushel58	.58
Linseed oil meal, per 100 lbs.	4.20	4.20
Soybean oil meal, per 100 lbs.	3.85	3.85
Pasture, per month per head	2.50	2.50

Monthly prices of stockers and feeder cattle at South St. Paul from January, 1959, through February, 1961, 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.

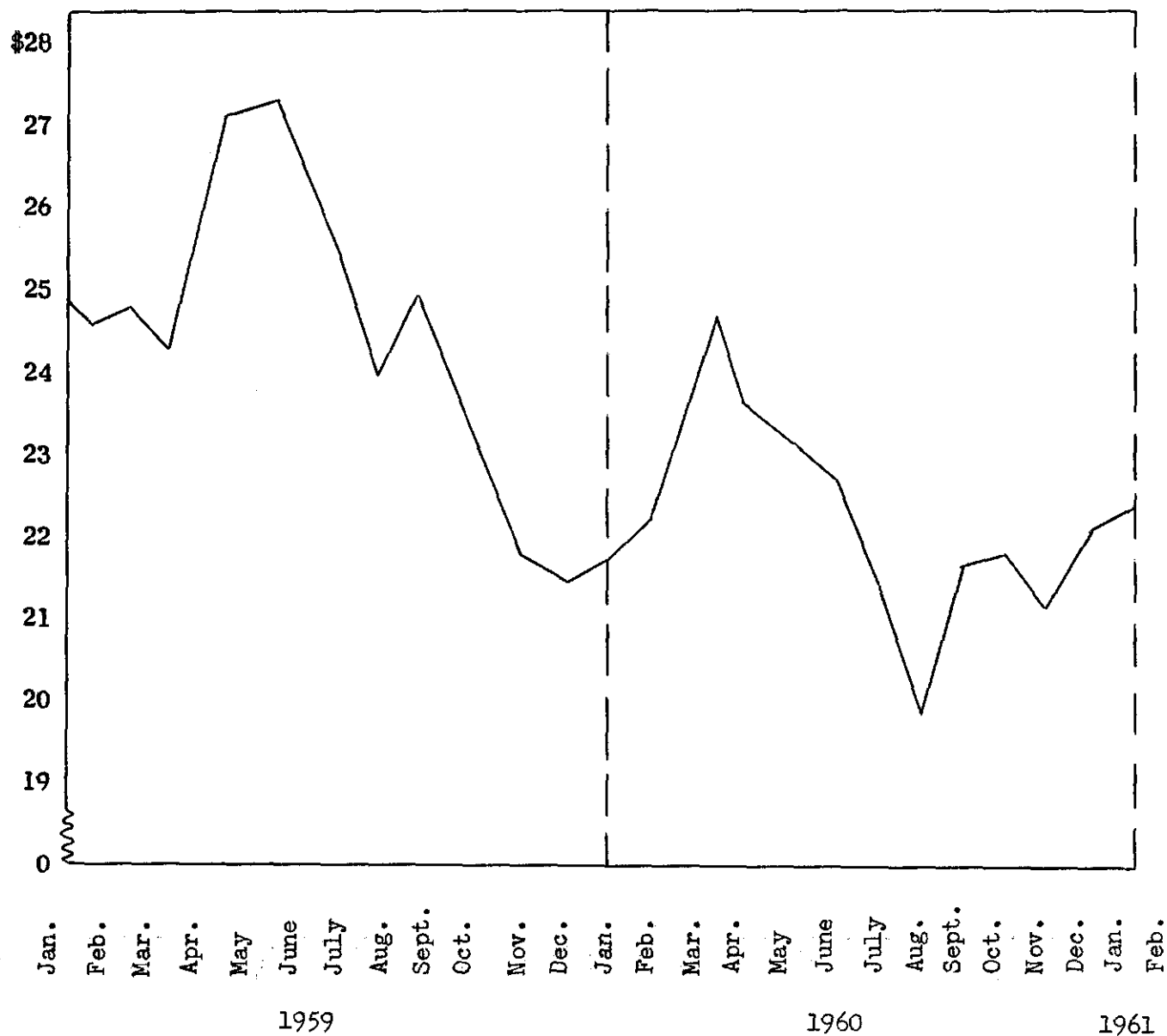


Figure 1. Average monthly prices per 100 pounds of stockers and feeders, all weights, South St. Paul, January, 1959 -- February, 1961 (compiled from Livestock Market News Statistics and Related Data, USDA, PMA, 1959-1961.)

The average purchase and sales prices per 100 pounds of feeder cattle for the years 1956-1960 by type of feeding program are shown in Figure 2.

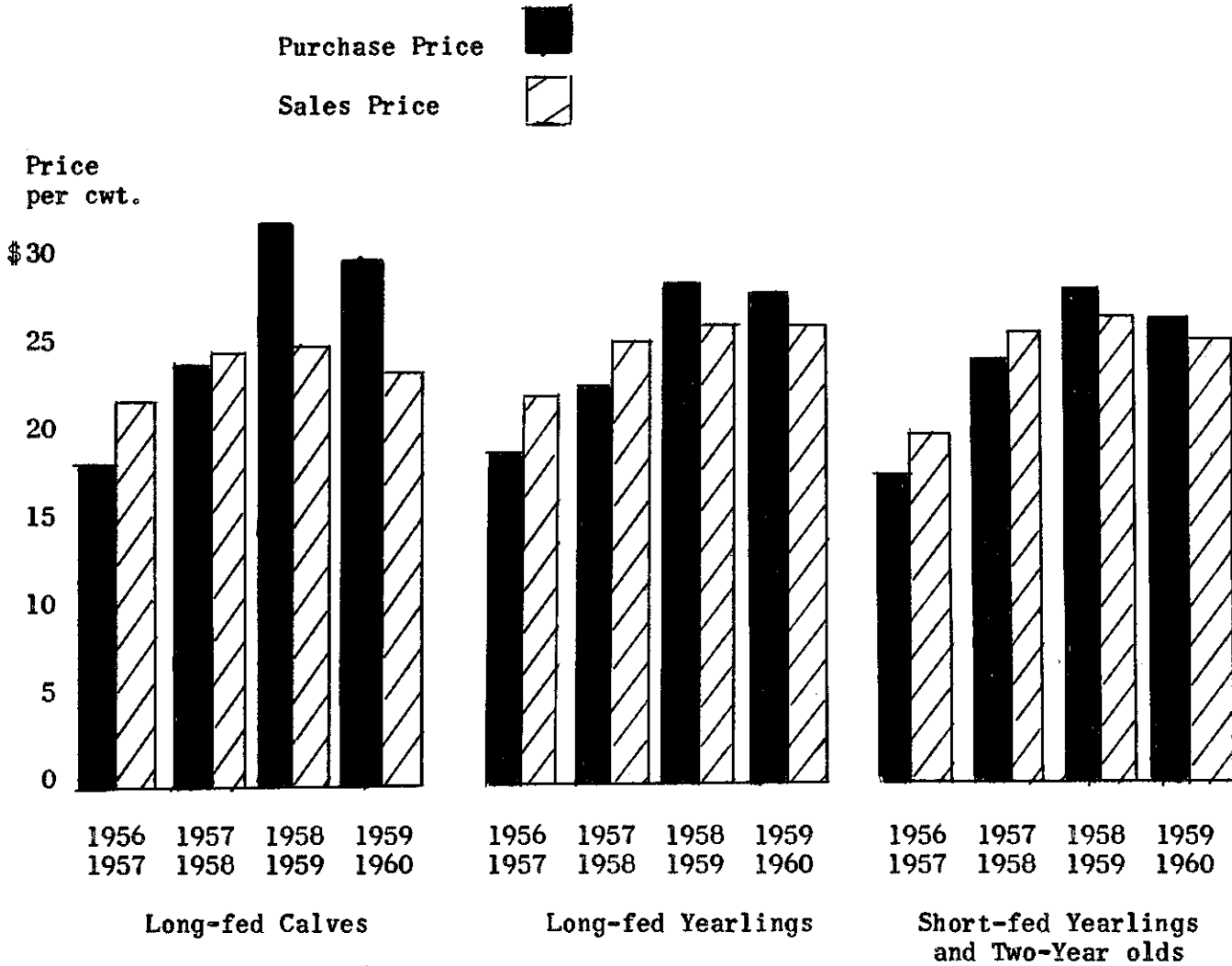


FIGURE 2. Average purchase and sale prices per 100 pounds of feeder cattle by feeding program on farms studied, 1956-1960.

NUMBERS AND WEIGHTS OF CATTLE FED

The individual lots of cattle for the 1959-60 feeding period included a wide range as to numbers per lot, gain per head, and daily gain. The data in Table 2 indicates 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 58 of the 152 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

	33 lots long-fed steer calves			17 lots long-fed heifer calves			33 lots long-fed mixed calves		
	Avg.	High	Low	Avg.	High	Low	Avg.	High	Low
Number of head in lot	88	225	30	94	230	26	101	573	25
Avg. purchase weight	447	532*	372	425	490	372	424	490	321
Avg. sale weight	1082	1241	950	913	975	817	979	1136	847
Avg. gain in weight/hd.	635	775	523	488	603	362	555	765	400
Avg. daily gain/hd.	1.85	2.40	1.27	1.70	2.02	1.30	1.73	2.10	1.22

	10 lots long-fed year- ling steers			21 lots short-fed year- ling steers			9 lots short-fed year- ling heifers		
	Avg.	High	Low	Avg.	High	Low	Avg.	High	Low
Number of head in lot	67	124	28	85	160	17	71	154	17
Avg. purchase weight	627	793	516	720	900	550	621	713	526
Avg. sale weight	1186	1305	1079	1131	1294	931	970	1173	904
Avg. gain in weight/hd.	559	752	411	411	512	267	349	489	258
Avg. daily gain/head	1.82	2.08	1.64	2.26	3.61	1.53	2.04	3.11	1.39

	7 lots long-fed mixed yearlings			10 lots short-fed mixed yearlings			12 lots miscellaneous		
	Avg.	High	Low	Avg.	High	Low	Avg.	High	Low
Number of head in lot	64	128	21	78	175	15	113	233	19
Avg. purchase weight	610	709	536	686	741	588	531	779	374
Avg. sale weight	1115	1249	972	1071	1153	941	936	1211	617
Avg. gain in weight/hd.	505	614	425	385	483	272	405	676	101
Avg. daily gain/head	1.69	1.84	1.41	2.08	3.64	1.25	2.02	3.09	1.33

* This lot was purchased later in feeding season, but is typical of a calf feeding program.

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 1959-1960 feeding season are shown in Table 3 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 parenthesis 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 30) is the difference between the feed cost per 100 pounds gain in weight and the selling price per 100 pounds. The remainder 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. Average Costs and Returns from Various Cattle Feeding Programs

	Long-fed steer calves		Long-fed heifer calves	
Number of lots	33		17	
<u>Number and weight of cattle fed:</u>				
1. Number of head bought	88		94	
2. Days on farm	351		288	
3. Days on Pasture	15		6	
4. Percent death loss	.84		.53	
5. Average purchase weight, lbs.	447		425	
6. Average sales weight, lbs.	1082		913	
7. Gain per head, lbs.	635		488	
8. Gain per head per day, lbs.	1.85		1.70	
9. Pounds of beef produced	56595		47188	
<u>Feed used:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
10. Corn (bu. per hd.) (lbs.cwt)	57.1	508	44.3	508
11. Small grain (bu. per hd) #cwt.	2.7	14	1.8	10
12. Commercial feed, lbs.	389	60	291	60
13. Total concentrates, lbs.	3673	582	2823	578
14. Legume hay, lbs.	866	140	783	165
15. Other hay, lbs.	66	10	42	9
16. Total dry roughage, lbs.	932	150	825	174
17. Corn silage, lbs.	2317	365	1836	381
18. Grass or oat silage, lbs.	232	33	147	29
19. Total silage, lbs.	2549	398	1983	410
20. Pasture, days	15	2	6	1
<u>Prices of cattle:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
21. Price paid	\$137.90	\$30.97	\$117.54	\$27.60
22. Price received	264.80	24.45	213.21	23.39
23. Price spread or gross margin	126.90	-6.52	95.67	-4.21
<u>Cost and returns:</u>	<u>Per Lot</u>		<u>Per Lot</u>	
24. Total value produced	\$11751.52		\$9473.11	
25. Total feed cost	8216.62		7022.14	
26. Total return over feed	\$ 3534.90		\$2451.57	
<u>Cost and returns:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
27. Value produced	\$126.90	\$19.84	\$95.67	\$19.47
28. Feed costs	91.99	14.49	72.09	14.80
29. Return over feed cost	\$ 34.91	\$ 5.35	\$23.58	\$ 4.67
30. Return over feed cost from price spread	-	-\$ 4.61	-	-\$ 3.93
31. Return over feed cost from feeding	-	\$ 9.96	-	\$ 8.60
32. Return per \$100 feed cost	-	\$142.00	-	\$135.00
33. Veterinary costs (22)	\$ 1.26	\$.19 (9)	\$.67	\$.13
34. Commission, yardage and trucking	(22) \$ 5.53	\$.88 (11)	\$ 3.50	\$.70
35. Interest (17)	\$ 8.62	\$ 1.30 (6)	\$ 5.50	\$ 1.13
36. Building and equipment costs (21)	\$ 9.41	\$ 1.46 (8)	\$ 8.48	\$ 1.62
37. Total other costs (4)	\$ 2.00	\$.32	-	-

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TABLE 3. Average Costs and Returns from Various Cattle Feeding Programs - (continued)

	Long-fed mixed calves		Long-fed yearling steers	
Number of lots	33		10	
<u>Number and weight of cattle fed:</u>				
1. Number of head bought	101		67	
2. Days on farm	321		308	
3. Days on pasture	9		32	
4. Percent death loss	1.43		.50	
5. Average purchase weight, lbs.	424		627	
6. Average sales weight, lbs.	979		1186	
7. Gain per head, lbs.	555		559	
8. Gain per head per day, lbs.	1.73		1.82	
9. Pounds of beef produced	58238		37968	
<u>Feed used:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
10. Corn (bu. per hd.) (lbs/cwt.)	53.8	537	54.2	559
11. Small grain (bu. per hd) (#/cwt.)	2.3	14	.8	5
12. Commercial feed, lbs.	295	54	258	46
13. Total concentrates, lbs.	3372	605	3320	610
14. Legume hay, lbs.	957	174	745	134
15. Other hay, lbs.	56	10	194	41
16. Total dry roughage, lbs.	1013	184	939	175
17. Corn silage, lbs.	1766	335	2163	398
18. Grass or oat silage, lbs.	319	51	286	56
19. Total silage, lbs.	2085	386	2449	454
20. Pasture, days	9	2	32	6
<u>Prices of cattle:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
21. Price paid	\$123.40	\$29.25	\$178.42	\$28.47
22. Price received	229.66	23.40	306.20	25.77
23. Price spread or gross margin	106.26	-5.85	127.78	-2.70
<u>Cost and returns:</u>	<u>Per Lot</u>		<u>Per Lot</u>	
24. Total value produced	\$11447.93		\$8659.08	
25. Total feed cost	8465.40		5551.13	
26. Total return over feed	\$ 2982.53		\$3107.95	
<u>Cost and return:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
27. Value produced	\$106.26	\$19.04	\$127.78	\$22.71
28. Feed costs	81.45	14.74	81.17	14.91
29. Return over feed cost	\$ 24.81	\$ 4.30	\$ 46.61	\$ 7.80
30. Return over feed cost from price spread	-	-\$ 4.36	-	-\$ 3.06
31. Return over feed cost from feeding	-	\$ 8.66	-	\$10.86
32. Return per \$100 feed cost	-	\$135.00	-	\$157.00
33. Veterinary Costs (18)	\$ 1.33	\$.24 (6)	\$ 1.22	\$.21
34. Commission, yardage and trucking (23)	\$ 5.63	\$ 1.03 (7)	\$ 7.00	\$ 1.29
35. Interest (8)	\$ 4.95	\$.83 (3)	\$ 6.96	\$ 1.16
36. Building and equipment costs (8)	\$ 5.30	\$.90 (7)	\$ 7.88	\$ 1.52
37. Total other costs (6)	\$ 1.39	\$.27 (2)	\$ 3.52	\$.50

TABLE 3. Average Costs and Returns from Various Cattle Feeding Programs - (continued)

	Short-fed yearling steers		Short-fed yearling heifers		Long-fed mixed yearlings	
Number of lots	21		9		7	
1.	85		71		64	
2.	189		177		304	
3.	9		5		10	
4.	.29		.41		1.03	
5.	720		621		610	
6.	1131		970		1115	
7.	411		349		505	
8.	2.26		2.04		1.69	
9.	35078		23661		33264	
	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
10.	45.0	623	35.4	567	58.2	659
11.	1.2	9	1.9	19	1.0	7
12.	232	58	113	33	319	63
13.	2790	690	2156	619	3610	729
14.	498	127	544	161	1036	221
15.	96	25	35	10	138	26
16.	594	152	579	171	1174	247
17.	1128	259	1462	465	3459	647
18.	118	37	-	-	-	-
19.	1246	296	1462	465	3459	647
20.	9	2	5	2	10	2
	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
21.	\$185.13	\$25.84	\$151.20	\$24.37	\$169.03	\$27.67
22.	284.85	25.07	234.14	24.09	274.73	24.63
23.	99.72	-.77	82.94	-.28	105.70	-3.04
	<u>Per Lot</u>		<u>Per Lot</u>		<u>Per Lot</u>	
24.	\$8433.23		\$5604.20		\$6922.86	
25.	5473.77		3586.53		6079.66	
26.	\$2959.46		\$2017.67		\$ 843.20	
	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
27.	\$99.72	\$24.26	\$82.94	\$24.00	\$105.70	\$20.92
28.	64.38	15.90	51.48	15.01	96.20	19.31
29.	\$35.34	\$ 8.36	\$31.46	\$ 8.99	\$ 9.50	\$ 1.61
30.	-	\$ -.81	-	\$ -.09	-	\$ 3.71
31.	-	\$ 9.17	-	\$ 9.08	-	\$ 5.32
32.		\$162.00		\$165.00		\$110.00
33. (8)	\$.81	\$.18	(6) \$.79	\$.23	(3) \$.90	\$.20
34. (15)	\$ 5.20	\$ 1.23	(7) \$ 6.16	\$ 1.89	(7) \$ 6.92	\$ 1.38
35. (8)	\$ 4.99	\$ 1.28	(5) \$ 5.05	\$ 1.56	(2) \$11.66	\$ 2.08
36. (17)	\$ 7.98	\$ 1.93	(9) \$ 5.51	\$ 1.61	(2) \$10.73	\$ 1.92
37. (2)	\$ 1.80	\$.40	(2) \$.78	\$.24	(2) \$ 1.34	\$.24

TABLE 3. Average Costs and Returns from Various Cattle Feeding Programs (concluded)

	Short-fed mixed yearlings		Miscellaneous cattle	
Number of lots	10		12	
<u>Number and weight of cattle fed:</u>				
1. Number of head bought	78		113	
2. Days on farm	185		205	
3. Days on pasture	10		8	
4. Percent death loss	.62		.37	
5. Average purchase weight, lbs.	686		531	
6. Average sales weight, lbs.	1071		936	
7. Gain per head, lbs.	385		405	
8. Gain per head per day, lbs.	2.08		2.02	
9. Pounds of beef produced	30134		44712	
<u>Feed used:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
10. Corn (bu. per hd.) (lbs./cwt)	37.4	545	33.3	461
11. Small grain (bu. per hd) (#/cwt.)	.3	3	1.4	11
12. Commercial feed, lbs.	201	52	272	66
13. Total concentrates, lbs.	2304	600	2157	538
14. Legume hay, lbs.	935	286	546	140
15. Other hay, lbs.	-	-	98	24
16. Total dry roughage, lbs.	935	286	644	164
17. Corn silage, lbs.	1672	444	3671	1062
18. Grass or oat silage, lbs.	68	16	11	2
19. Total silage, lbs.	1740	460	3682	1064
20. Pasture, days	10	3	8	1
<u>Prices of cattle:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
21. Price paid	\$177.44	\$25.74	\$136.48	\$26.72
22. Price received	265.13	24.88	223.43	24.26
23. Price spread or gross margin	87.69	-.86	86.95	-2.46
<u>Cost and returns:</u>	<u>Per Lot</u>		<u>Per Lot</u>	
24. Total value produced	\$7257.85		\$9268.57	
25. Total feed cost	4578.20		6894.89	
26. Total return over feed	\$2679.65		\$2373.68	
<u>Cost and returns:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
27. Value produced	\$87.69	\$22.80	\$86.95	\$21.92
28. Feed costs	57.86	15.08	61.25	15.69
29. Return over feed cost	\$29.83	\$ 7.72	\$25.70	\$ 6.23
30. Return over feed cost from price spread	-	-\$ 2.08	-	-\$ 2.33
31. Return over feed cost from feeding	-	\$ 9.80	-	\$ 8.56
32. Return per \$100 feed cost	-	\$156.00	-	\$147.00
33. Veterinary costs (4)	\$.69	\$.21 (4)	\$.78	\$.37
34. Commission, yardage and trucking (6)	\$ 6.59	\$ 1.85 (9)	\$ 4.75	\$ 1.58
35. Interest (2)	7.02	2.08 (3)	\$ 5.08	\$ 1.46
36. Building and equip- ment costs (2)	\$ 3.43	\$.88 (8)	\$ 5.17	\$ 1.48
37. Total other costs	-	-	\$.94	\$.22

TABLE 4. Comparison of Long-fed Steer Calves on Liberal Grain and Liberal Roughage

	Average of 10 lots with Liberal Roughage		Average of 10 lots with Liberal Grain	
<u>Number and weight of cattle fed:</u>				
1. Number of head bought	120		60	
2. Days on farm	354		326	
3. Days on pasture	6		14	
4. Percent death loss	.70		.81	
5. Average purchase weight, lbs.	466		442	
6. Average sales weight, lbs.	1090		1080	
7. Gain per head, lbs.	624		638	
8. Gain per head per day, lbs.	1.79		2.02	
9. Pounds of beef produced	76660		38832	
<u>Feed used:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
10. Corn (bu. per hd.) (lbs./cwt.)	47.6	426	64.1	575
11. Small grain (bu. per hd) (#/cwt.)	1.5	9	2.4	12
12. Commercial feed, lbs.	432	66	406	63
13. Total concentrates, lbs.	3149	501	4069	650
14. Legume hay, lbs.	890	152	759	118
15. Other hay, lbs.	150	23	29	5
16. Total dry roughage, lbs.	1040	175	788	123
17. Corn silage, lbs.	4807	750	171	30
18. Grass or oat silage, lbs.	490	66	-	-
19. Total silage, lbs.	5297	816	171	30
20. Pasture, days	6	1	14	2
<u>Prices of cattle:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
21. Price paid	\$140.73	\$30.30	\$135.12	\$30.81
22. Price received	272.35	24.91	260.48	24.10
23. Price spread or gross margin	131.62	-5.39	125.36	-6.71
<u>Cost and returns:</u>	<u>Per Lot</u>		<u>Per Lot</u>	
24. Total value produced	\$17038.54		\$7696.70	
25. Total feed cost	11340.25		5485.97	
26. Total return over feed	\$ 5698.29		\$2210.73	
<u>Cost and returns:</u>	<u>Per Head</u>	<u>Per Cwt.</u>	<u>Per Head</u>	<u>Per Cwt.</u>
27. Value produced	\$131.62	\$20.70	\$125.25	\$19.64
28. Feed costs	90.88	14.40	91.56	14.44
29. Return over feed cost	\$ 40.74	\$ 6.30	\$ 33.79	\$ 5.20
30. Return over feed cost from price spread	-	-\$ 4.21	-	-\$ 4.44
31. Return over feed cost from feeding	-	\$10.51	-	\$ 9.66
32. Return per \$100 feed cost	-	\$147.00	-	\$146.00
33. Veterinary costs (6)	\$.88	\$.14	(8) \$1.74	\$.26
34. Commission, yardage and trucking (8)	\$ 4.32	\$.71	(5) \$4.21	\$.69
35. Interest (6)	\$ 10.94	\$1.61	(7) \$6.20	\$.98
36. Building and equipment costs (8)	\$ 7.13	\$1.16	(9) \$11.04	\$ 1.72
37. Total other costs (3)	\$ 5.76	\$.90	(2) \$.75	\$.13
38. Total listed costs	\$108.87	\$17.21	\$109.48	\$17.26
39. Return over listed costs	\$22.75	\$ 3.49	\$ 18.81	\$ 2.87

TABLE 5(a). Range in Return Over Feed Cost, 1959-60

	Long-fed steer calves			Long-fed heifer calves		
	Average of 33 lots	18 lots highest in return above feed	15 lots lowest in return above feed	Average of 17 lots	11 lots highest in return above feed	6 lots lowest in return above feed
1. Days on farm	351	356	345	288	286	291
2. Percent death loss	.84	.52	1.23	.53	.24	1.07
3. Average purchase weight, lbs.	447	447	448	425	417	439
4. Average sales weight, lbs.	1082	1097	1065	913	920	902
5. Gain per head, lbs.	635	650	617	488	503	463
6. Gain per head per day, lbs.	1.85	1.87	1.82	1.70	1.80	1.60
<u>Feed used per 100 lbs. gain:</u>						
7. Grain, lbs.	522	491	558	518	495	560
8. Commercial feed, lbs.	60	50	73	60	50	79
9. Total concentrates, lbs.	582	541	632	578	545	639
10. Dry roughage, equiv. lbs.	283	252	319	311	244	434
11. Pasture, days	2	3	1	1	2	-
<u>Prices of cattle:</u>						
12. Price paid per 100 lbs.	\$30.97	\$30.02	\$32.10	\$27.60	\$27.96	\$27.13
13. Price received per 100 lbs.	24.45	24.84	23.97	23.39	23.90	22.46
14. Price spread per 100 lbs.	-6.52	-5.16	-8.13	-4.21	-3.96	-4.67
<u>Cost and returns per 100 lbs. gain:</u>						
15. Value produced	\$19.84	\$21.35	\$18.02	\$19.47	\$20.19	\$18.13
16. Feed costs	14.48	13.19	16.04	14.80	13.48	17.21
17. Return over feed	5.35	8.16	1.98	4.67	6.71	.92
18. Return over feed cost from price spread	-4.61	-3.49	-5.95	-3.93	-3.71	-4.33
19. Return over feed cost from feeding	9.96	11.65	7.93	8.60	10.42	5.25
20. Return per \$100 feed cost	\$142.00	\$164.00	\$116.00	\$135.00	\$148.00	\$107.00

TABLE 5. Range in Return Over Feed Cost 1959-60 (continued)

	Long-fed mixed calves			Short-fed yearling steers		
	Average of 33 lots	17 lots highest in return above feed	16 lots lowest in return above feed	Average of 21 lots	11 lots highest in return above feed	10 lots lowest in return above feed
1. Number of days on farm	321	313	331	189	197	180
2. Percent death loss	1.43	1.56	1.28	.29	.06	.55
3. Average purchase weight, lbs.	424	423	424	720	724	715
4. Average sales weight, lbs.	979	975	983	1131	1152	1107
5. Gain per head, lbs.	555	552	559	411	428	392
6. Gain per head per day, lbs.	1.73	1.77	1.69	2.26	2.25	2.28
<u>Feed used per 100 lbs. gain:</u>						
7. Grain, lbs.	551	502	604	632	583	687
8. Commercial feed, lbs.	54	56	52	58	52	65
9. Total concentrates, lbs.	605	558	656	690	635	752
10. Dry roughage, equiv. lbs.	313	314	310	251	271	229
11. Pasture, days	2	1	2	2	4	-
<u>Price of cattle:</u>						
12. Price paid per 100 lbs.	\$29.25	\$27.22	\$31.40	\$25.84	\$26.05	\$25.62
13. Price received per 100 lbs.	23.40	23.60	23.18	25.07	26.31	23.71
14. Price spread per 100 lbs.	-5.85	-3.62	-8.22	-.77	.26	-1.91
<u>Cost and returns per 100 lbs. gain:</u>						
15. Value produced	\$19.04	\$21.00	\$16.96	\$24.26	\$26.80	\$21.46
16. Feed costs	14.74	13.50	16.06	15.90	14.92	16.98
17. Return over feed	4.30	7.50	.90	8.36	11.88	4.48
18. Return over feed cost from price spread	-4.36	-2.60	-6.22	.81	.49	-2.25
19. Return over feed cost from feeding	8.66	10.10	7.12	9.17	11.39	6.73
20. Return per \$100 feed cost	\$135.00	\$158.00	\$111.00	\$162.00	\$189.00	\$132.00

TABLE 6. A Four-year Comparison of Feeder Cattle Costs and Returns
Long-fed calves

	1956-57 Average 39 lots	1957-58 Average 25 lots	1958-59 Average 39 lots	1959 -60 Average 83 lots
<u>Number and weight of cattle fed:</u>				
1. Number of head bought	58	89	69	94
2. Days on farm	313	321	313	326
3. Days on pasture	28	13	11	11
4. Percent death loss	.8	.9	1.2	1.0
5. Average purchase weight, lbs.	402	398	418	433
6. Average sales weight, lbs.	931	966	974	1007
7. Gain per head, lbs.	529	568	556	574
8. Gain per head per day, lbs.	1.7	1.8	1.8	1.77
9. Pounds beef produced per lot	29588	51393	38229	55324
<u>Feed used per 100 lbs. gain:</u>				
10. Corn, lbs.	470	489	529	520
11. Small grain, lbs.	22	26	32	12
12. Commercial feed, lbs.	<u>45</u>	<u>40</u>	<u>59</u>	<u>59</u>
13. Total concentrates, lbs.	537	555	620	591
14. Legume hay, lbs.	263	209	184	158
15. Other hay and stover, lbs.	<u>48</u>	<u>14</u>	<u>11</u>	<u>10</u>
16. Total dry roughage, lbs.	311	223	195	168
17. Silage, lbs.	389	353	425	395
18. Pasture days	6	2	2	1
<u>Prices of cattle:</u>				
19. Price paid per 100 pounds	\$18.81	\$24.51	\$33.51	\$29.60
20. Price received per 100 pounds	22.48	24.97	25.09	23.81
21. Price spread, per 100 pounds	3.67	.46	-8.42	-5.79
<u>Cost and returns per 100 lbs. gain:</u>				
22. Value produced	\$25.52	\$25.46	\$18.62	\$19.44
23. Feed costs	<u>15.82</u>	<u>13.93</u>	<u>15.67</u>	<u>14.65</u>
24. RETURN OVER FEED COSTS	\$ 9.70	\$11.53	\$ 2.95	\$ 4.79
25. Return over feed cost from price spread	\$ 3.04	\$.49	\$-6.47	\$-4.37
26. Return over feed cost from feeding	6.66	11.04	9.42	9.16
27. Return per \$100 feed cost	\$166.00	\$189.00	\$123.00	\$138.00
28. Estimated costs other than feed & labor ^{L/}	\$ 2.61*	\$ 2.74*	\$ 2.79*	\$ 3.16*
29. Estimated return to labor & management	\$ 7.09	\$ 8.79	\$.16	\$ 1.63
<u>Returns to labor:</u>				
30. Estimated hours of labor**	1.62	1.52	1.59	1.40
31. Estimated return per hour of labor	\$ 4.38	\$ 5.78	\$.10	\$ 1.16
32. Estimated return per head to labor & mgt.	\$37.51	\$49.93	\$.89	\$ 6.66

^{L/} 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.

TABLE 6. A Four-year Comparison of Feeder Cattle Costs and Returns (Cont'd)

	Long-fed yearlings				Short-fed yearlings and two-year olds			
	1956-57 Average 14 lots	1957-58 Average 16 lots	1958-59 Average 8 lots	1959-60 Average 17 lots	1956-57 Average 26 lots	1957-58 Average 30 lots	1958-59 Average 20 lots	1959-60 Average 40 lots
1.	66	63	67	66	53	41	58	80
2.	303	309	286	306	184	169	178	185
3.	25	38	23	23	15	12	13	8
4.	1.1	1.1	.5	.7	.3	.5	.5	.4
5.	614	608	621	620	684	730	697	689
6.	1125	1094	1070	1157	1054	1088	1066	1080
7.	511	486	449	537	370	358	369	391
8.	1.7	1.6	1.6	1.76	2.0	2.1	2.1	2.17
9.	33340	32545	27608	36031	19592	14437	22209	31273
10.	511	475	627	600	600	668	603	591
11.	6	12	24	6	9	10	12	10
12.	<u>45</u>	<u>24</u>	<u>43</u>	<u>53</u>	<u>59</u>	<u>56</u>	<u>68</u>	<u>51</u>
13.	562	511	694	659	668	734	683	652
14.	263	212	363	170	273	225	191	175
15.	<u>23</u>	<u>22</u>	<u>6</u>	<u>35</u>	<u>31</u>	<u>15</u>	<u>48</u>	<u>15</u>
16.	286	234	369	205	304	240	239	190
17.	835	601	202	533	508	458	340	375
18.	5	7	5	5	4	3	-	2
19.	\$19.11	\$22.63	\$28.93	\$28.14	\$17.06	\$24.20	\$27.42	\$25.49
20.	22.48	25.54	26.31	25.30	20.35	26.05	25.92	24.81
21.	3.37	2.91	-2.62	-2.84	3.29	1.85	-1.50	-.68
22.	\$26.51	\$28.70	\$23.77	\$21.97	\$26.85	\$30.09	\$22.74	\$23.84
23.	<u>19.05</u>	<u>15.32</u>	<u>18.26</u>	<u>16.72</u>	<u>19.03</u>	<u>17.00</u>	<u>16.98</u>	<u>15.49</u>
24.	\$ 7.46	\$13.38	\$ 5.51	\$ 5.25	\$ 7.82	\$13.09	\$ 5.76	\$ 8.35
25.	\$ 4.03	\$ 3.16	\$-2.54	\$-3.33	\$ 6.50	\$ 4.03	\$-3.18	\$ -.97
26.	3.43	10.22	8.05	8.58	-1.82	9.06	8.94	9.31
27.	\$149.00	\$196.00	\$135.00	\$137.00	\$147.00	\$187.00	\$135.00	\$161.00
28.	\$ 3.01*	\$ 3.22*	\$ 3.10*	\$ 3.38*	\$ 2.80*	\$ 3.21*	\$ 3.31*	\$ 3.33
29.	\$ 4.45	\$10.16	\$ 2.41	\$ 1.87	\$ 5.02	\$ 9.88	\$ 2.45	\$ 5.02
30.	1.17	1.19	1.16	1.17	1.23	1.33	1.23	1.06
31.	\$ 3.80	\$ 8.54	\$ 1.00	\$ 1.60	\$ 4.08	\$ 7.43	\$ 1.99	\$ 4.74
32.	\$22.74	\$49.38	\$ 4.49	\$10.04	\$18.57	\$35.37	\$ 7.34	\$18.52

COMPARISON OF LONG-FED STEER CALVES ON LIBERAL GRAIN AND LIBERAL ROUGHAGE

Ten lots fed a liberal grain ration, and ten lots a liberal roughage ration were sorted out of the total of 33 lots of long-fed steer calves. These two programs are compared in Table 4. One measure of the relative profitability is return over feed cost found on Line 29. Return over feed cost per head was \$40.74 in the liberal roughage group and \$33.79 in the liberal grain group. Caution should be exercised in using these figures. Considerable differences in the average size of lot, number days on farm and price spread are found between these two groups. Long-fed steer calves on liberal roughage had a \$5.39 price spread as compared to \$6.71 for the liberal grain group. Cattle receiving liberal roughage were kept in the feed lot 354 days as compared to 326 days for lots receiving a heavy grain ration. Similarly, there was a difference of 60 head in the average number of head per lot.

COMPARISON OF LOTS ABOVE AVERAGE WITH THOSE BELOW AVERAGE IN RETURN OVER FEED COST

Table 3 indicates a wide variation among the different lots as to cost and returns. In Table 5, the averages of the high return lots are compared with the low return lots. These data show that the lots above average in return over feed costs have both lower feed costs per 100 pounds gain and a higher value produced per 100 pounds gain.

Some of the differences in feed costs may be due to an over or under estimate in the amount of feeds fed. Most of them, however, are due to variations in the feed, the cattle, and the cattle feeder.

The quality of the feed produced is especially important in this study because most home grown feeds are valued at the same price with little regard for quality. Thus, the lots fed low quality feed will tend to have higher feed costs per 100 pounds gain. The selection and combination of feeds used also determines the feed cost per 100 pounds gain. The least cost ration is one which will put on weight with the lowest feed cost per 100 pounds of gain. Another factor affecting feed costs is the amount of feed wasted.

The type of cattle has an effect on feed costs per 100 pounds of gain. In general, the heavier and older cattle require more feed per pound of gain than the lighter cattle. The degree of finish put on and the inherent feeding efficiency of the cattle have an effect on feed requirements.

Differences in the value of 100 pounds of cattle produced resulted from differences in the purchase price of feeders, the sale price of cattle marketed and the death loss, if any, during the feeding period. Both the price received and the price spread are higher for the lots with above average returns than for those with below average returns. A high value produced per 100 pounds gain is obtained by a high selling price, a large price spread, or a combination of these two. The effect of price spread becomes more important as the purchase weight becomes a large proportion of the total weight.

Table 6 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, 1956-1960.

TABLE 7. RETURNS FROM PRICE SPREAD AND FROM FEEDING, 1959-60

	Long-fed				Short-fed				Long-fed			
	Steer calves	Heifer calves	Mixed calves	Yearling steers	Yearling steers	Yearling heifers	Mixed yearlings	Mixed yearlings	Misc.			
	33 lots	17 lots	33 lots	10 lots	21 lots	9 lots	7 lots	10 lots	12 lots			
Price spread per 100 lbs	\$-6.52	\$-4.21	\$-5.85	\$-2.70	\$ -.77	\$ -.28	\$-3.04	\$ -.86	\$-2.46			
Return over feed cost from price spread	-4.61	-3.93	-4.36	-3.06	-.81	-.09	-3.71	-2.08	-2.33			
Return over feed cost from feeding	9.96	8.60	8.66	10.86	9.17	9.08	5.32	9.80	8.56			
Return over feed cost per 100 pounds gain	5.35	4.67	4.30	7.80	8.36	8.99	1.61	7.72	6.23			
Average purchase weight, lbs.	447	425	424	627	720	621	610	686	531			
Gain per head, lbs.	635	488	555	559	411	349	505	385	405			
Gain per head per day, lbs.	1.85	1.70	1.83	1.82	2.26	2.04	1.69	2.08	2.02			

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 steer calves, long-fed heifer calves, long-fed mixed calves, long-fed yearling steers, short-fed yearling steers, short-fed yearling heifers, long-fed mixed yearlings and short-fed mixed yearlings.

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 1959-60 lots is greatest for the long-fed steer calves in comparison with long-fed yearlings and short-fed yearlings and two-year-olds. 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 -\$2.70 for the long-fed steers and -\$0.77 for the short-fed yearling steers. The short-fed yearling heifers had -\$0.28 price spread while the short-fed mixed yearlings had a -\$0.86 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 was determined in a study conducted during the 1956-57 cattle feeding season.^{2/} These labor requirements for three feeding systems are presented in Table 8.

^{2/} 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 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 cornstalk pasture for the first six weeks. This is followed by a full feed of silage, and limited 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 is 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.

EFFECT OF SIZE OF LOT UPON LABOR RETURNS PER HOUR

The effect of size of lot on the return per hour of labor in the same feeding system is shown in Table 9. Twenty lots of long-fed steer calves were separated into two groups of 10 lots each. The average number of head per lot is 60 in the one group and 120 in the other group. Labor requirement estimates per 100 pounds of gain were obtained from data included in Table 8 of this report. Labor required in hours per 100 pounds gain for 60 head is 1.59 hours, for 120 head 1.26 hours. The smaller size lots had a return for labor and management per 100 pounds gain \$.47 less than the lots with an average size of 120 head. The return per hour of labor per 100 pounds gain was \$.76 less. This emphasizes the effect of lot size on returns to labor.

TABLE 9. Comparison of Estimated Returns per Hour of Labor by Size of Lot for Long-fed Steer Calves, 1959-1960

	10 lots with 60 head	10 lots with 120 head
<u>Cost and returns per 100 lbs. gain:</u>		
Value produced	\$19.64	\$20.70
Feed costs	\$14.44	\$14.40
Estimated other costs	<u>2.83</u>	<u>3.46</u>
TOTAL	\$17.27	\$17.86
Return for labor and management	\$ 2.37	\$ 2.84
Hours of labor spent*	1.59	1.26
Return per hour of labor	\$ 1.49	\$ 2.25

* Adjusted for size of lot

TABLE 10. Estimated Returns per Hour of Labor from Feeder Cattle
(Adjusted to lot size of 80 head)

	33	17	33	10	21	9	7	10
	Long- fed steer calves	Long- fed heifer calves	Long- fed mixed calves	Long- fed yearling steers	Short- fed yearling steers	Short- fed yearling heifers	Long- fed mixed yearlings	Short- fed mixed yearlings
Number of lots	33	17	33	10	21	9	7	10
Cost and returns per 100 pounds gain:								
Value produced	\$19.84	\$19.47	\$19.04	\$22.71	\$24.26	\$24.00	\$20.92	\$22.80
Feed costs	\$14.49	\$14.80	\$14.74	\$14.91	\$15.90	\$15.01	\$19.31	\$15.08
Interest at 6.5%	1.35	1.23	1.28	1.76	1.53	1.34	1.13	1.52
Miscellaneous cash	.50	.50	.50	.50	.50	.50	.50	.50
Power	.40	.40	.40	.40	.40	.40	.40	.40
Equipment	.30	.30	.30	.30	.30	.30	.30	.30
Shelter	.65	.65	.65	.65	.65	.65	.65	.65
TOTAL	\$17.69	\$17.88	\$17.87	\$18.52	\$19.28	\$18.20	\$22.29	\$18.45
Return to labor and management	\$ 2.15	\$ 1.59	\$ 1.17	\$ 4.19	\$ 4.98	\$ 5.80	\$-1.37*	\$ 4.35
Hours of labor spent **	1.29	1.35	1.06	1.36	1.11	1.21	1.35	1.14
Return per hour of labor	\$ 1.67	\$ 1.18	\$ 1.10	\$ 3.08	\$ 4.49	\$ 4.79	\$-1.01	\$ 3.82

* These 7 lots of cattle had high feed costs in comparison to other feeding programs.

** Hand feeding methods assumed.

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 10 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 1959-1960, except for the miscellaneous group.

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.^{3/} This includes fixed costs for shelter and equipment, such as depreciation.

The hours of labor spent per 100 pounds gain is 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 1959-60 for the eight feeding programs was \$2.39.

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.

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.

^{3/} Hasbargen, P. R., and Pond, G. A., "Planning Farms for Increased Profits," University of Minnesota Station Bulletin No. 445, December, 1957.

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 on the last page of this report will provide data which can be used.

STEP 1. Determine Cost of Producing Finished Animal ^{4/}

(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 _____(per cent) = \$ _____
(interest rate

Miscellaneous costs ^{5/} _____(lbs. gain) x \$ ~~1.75~~ ^{for number of months on feed} _{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: Total cost per head ÷ _____ \$ _____
 sales weight

STEP 3. Your estimated sale value of steer

_____cwt. x \$ _____Your Estimated Price \$ _____

PROFIT PER HEAD \$ _____

^{4/}Route, 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.

^{5/}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 = 450 lbs. @ \$27.00 per cwt. \$121.50
 (b) Feed and other costs per head: 635 lbs. gain

<u>Feed Cost</u>	<u>Amount Fed</u>	<u>Price</u>	<u>Cost</u>	
Corn (bu.)	57.1 bu.	\$.96	\$54.82	
Small grains (bu.)	2.7 bu.	.58	1.57	
Supplement (lbs.)	389 lbs.	.04	15.56	
All hay (tons)	.47 tons	19.75	9.28	
Silage (tons)	1.27 tons	6.50	8.26	
Pasture (days)	15 days	.083	<u>1.25</u>	
Total feed cost				\$ 90.74
<u>Estimated other costs</u>				
Labor cost 8.20 hours per head x \$1.50 per hour (80 head basis)				12.30
Interest: \$121.50 (original cost per head) x 6.5 (percent) (number of days on farm - 351)				7.58
Miscellaneous costs: 635 lbs. gain x \$1.10 per cwt. (includes only variable costs)				6.99
Other overhead costs for equipment and shelter: (635 lbs. gain x \$.75 per cwt.)...				<u>4.76</u>
(c) Total cost per head				\$ 243.87

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

$$\frac{\text{Total cost per head}}{\text{sale weight}} = \frac{\$243.87}{1085} = \$22.48$$

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 9 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.

TABLE 12. Feed Requirements Based on 1959-60 Lot Averages

	Long- fed	Long- fed	Long- fed	Long- fed	Short- fed	Short- fed	Long- fed	Short- fed
	Steer Calves	Heifer Calves	Mixed Calves	Yearling Steers	Yearling Steers	Yearling Heifers	Mixed Yearlings	Mixed Yearlings
Number of lots	33	17	33	10	21	9	7	10
Purchase weight	447	425	424	627	720	621	610	686
Gain in weight	635	488	555	559	411	349	505	385
Days on farm	351	288	321	308	189	177	304	185
Gain per head per day	1.85	1.70	1.73	1.82	2.26	2.04	1.69	2.08
<u>Requirements per head:</u>								
Corn (bu.)	57.1	44.3	53.8	54.2	45.0	35.4	58.2	37.4
Small grain (bu.)	2.7	1.8	2.3	.8	1.2	1.9	1.0	.3
Supplement (lbs.)	389	291	295	258	232	113	319	201
All hay (tons)	.47	.41	.51	.47	.30	.29	.59	.47
Silage (tons)	1.27	.99	1.04	1.22	.62	.73	1.73	.84
Pasture (days)	15	6	9	32	9	5	10	10
Labor (hours)(hand methods)	8.20	6.61	7.38	7.62	4.57	4.22	6.80	4.40
Interest (percent)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
<u>Requirements per cwt.:</u>								
Miscellaneous costs	\$1.10	\$1.10	\$1.10	\$1.10	\$1.10	\$1.10	\$1.10	\$1.10
Overhead costs for shelter and equipment	\$.75	\$.75	\$.75	\$.75	\$.75	\$.75	\$.75	\$.75