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FEEDER CATTLE
COSTS AND RETURNS

1954 - 1955

UNIVERSITY OF MINNESOTA
Institute of Agriculture
and
UNITED STATES DEPARTMENT OF AGRICULTURE
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Cooperating

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FEEDER CATTLE COSTS AND RETURNS
1954-1955

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INTRODUCTION

Returns from cattle feeding fluctuate from year to year and vary from farm to farm. Variation in marketing margins and in feed costs are the major factors accounting for the wide difference in returns from beef cattle feeding programs. This is emphasized by this study of costs and returns for 62 lots of cattle fed out on southern Minnesota farms in the 1954-55 feeding season. This information was obtained from records kept 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 and also to provide examples of individual lot records for comparison and study.

The data presented cover individual lots of cattle from purchase as feeders to sale as fat cattle. Three different feeding programs are represented (1) long-fed calves, (2) long-fed yearlings, and (3) short-fed yearlings and two-year-olds. Cattle on feed 240 days or less are classed as "short-fed" and those fed for longer periods as "long-fed." Steers and heifers are combined in these lots. All lots with an average weight of 500 pounds or less per head at purchase are classed as calves.

The variation in average costs and returns among these three classes of cattle was much less than the variations in the same items within each group. The comparison of the lots above and below average returns on page 18 indicate the differences and similarities between the high profit and low profit lots.

Simple arithmetic averages are used throughout this 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 farm studied are shown in Table 1 for 1954 and 1955. The farm raised feeds are valued at average prices on the farm. Purchased feeds are listed at the prices farmers 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.

Table 1. Average Annual Feed Prices

	1954	1955
Alfalfa hay, per ton	\$17.00	\$18.00
Timothy or brome hay, per ton	9.80	10.40
Hay silage, per ton	6.05	6.35
Corn silage, per ton	5.75	6.00
Ear corn, per bu.	1.35	1.23
Oats, per bu.	.70	.61
Linseed oil meal, per 100 lbs.	4.20	4.10
Soybean oil meal, per 100 lbs.	5.17	3.60

Monthly prices of stocker and feeder cattle at South St. Paul from January, 1954, through April, 1956, 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.

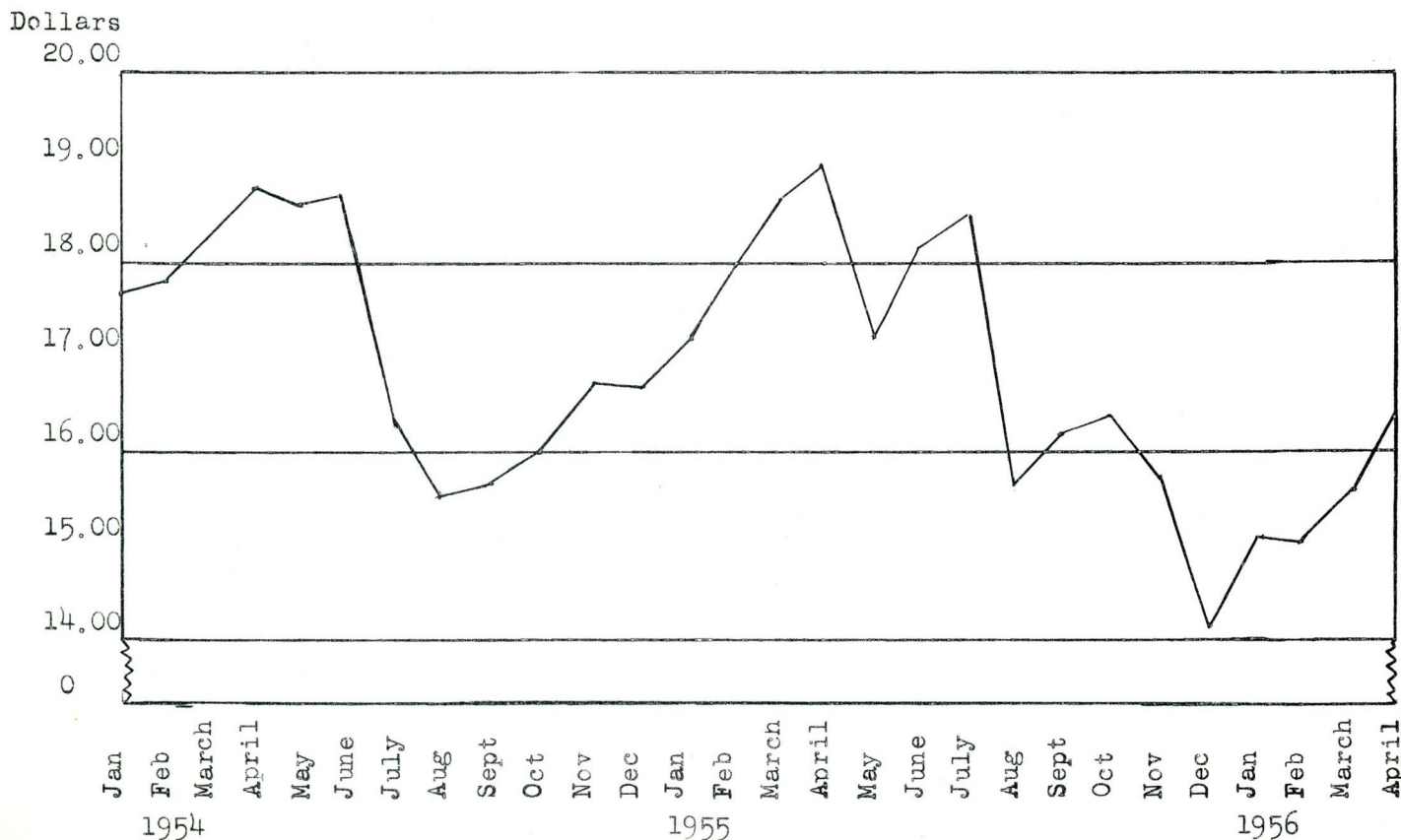


Figure 1. Average Monthly Prices per 100 lbs. of Stockers and Feeders, All Weights, South St. Paul, January, 1954-April, 1956. (Compiled from Livestock Market News Statistics and Related Data. USDA, PMA 1954-1956.)

FEEDING DATA PRESENTED

The number and weight of cattle fed, the quantities of feed used and the costs and returns from feeding operations for the 1954-55 feeding season are shown in the following pages. In Table 3 is the report on the long-fed calves, in Table 4 for the long-fed yearlings, and in Table 5 for the short-fed yearlings and two-year-olds. A comparison of this data for the last three years is given in Table 6.

The comparison of the factors affecting the costs and returns for the lots with above average return and those with below average return for each of the three types of feeding operations is given in Table 7 on page 18. A comparative analysis of price spread, feed costs and returns for the lots with above average return and those with below average return includes Tables 8 and 9. A comparison of returns from price spread and from feeding for the different cattle feeding programs concludes the report.

NUMBERS AND WEIGHTS OF CATTLE FED

The individual lots of cattle for the 1954-55 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 calves, long-fed yearlings and the short-fed yearlings and two-year-olds.

Table 2. Range in Numbers and Weights for Individual Lots

	Long-Fed Calves			Long-Fed Yearlings			Short-Fed Yearlings and two-year-olds		
	Avg.	High	Low	Avg.	High	Low	Avg.	High	Low
Number of head in lot	64	204	18	58	190	21	48	306	10
Average purchase weight	410	476	325	621	763	508	746	921	556
Average sale weight	946	1165	734	1123	1300	899	1083	1287	807
Average gain in weight per hd.	537	719	409	502	783	346	338	493	166
Average daily gain per head	1.7	2.0	1.2	1.6	2.2	1.2	2.0	2.5	1.2

Daily gains were greatest for the short-fed cattle. This was due in part to their larger size and capacity for feed and to the fact that they were pushed along more rapidly. Death losses occurred in 21 of the 62 lots. In a few of the cases it was the major factor limiting the profits for the lot.

Table 3. Long-Fed Calves, 1954-55

	Average of 29 lots	Individual lot numbers				
		1	2	3	4	5
<u>No. and Wt. of Cattle Fed:</u>						
1. Number of head bought	64	21	45	78	51	68
2. Days on farm	324	404	260	286	290	310
3. Percent death loss	1.1	0	0	1.3	0	1.5
4. Avg. purchase wt. lbs.	410	426	398	402	397	450
5. Avg. sale wt. lbs.	947	1089	854	866	824	990
6. Gain per head, lbs.	537	663	456	464	427	540
7. Gain per head per day, lbs.	1.7	1.6	1.8	1.6	1.5	1.7
8. Lb. beef produced per lot	34212	13920	20525	35360	21760	35765
<u>Feed Used per 100 lbs. Gain</u>						
9. Corn, lb.	515	475	323	418	525	428
10. Small grain, lb.	20	-	34	11	3	18
11. Commercial feed, lb.	47	42	69	64	38	37
12. Total concentrates, lb.	582	517	426	493	566	483
13. Legume hay, lb.	199	298	195	147	124	94
14. Other hay and stover, lb.	23	31	7	-	-	13
15. Total dry roughage, lb.	222	329	202	147	124	107
16. Silage, lb.	395	-	599	79	565	716
17. Pasture days	9	12	-	5	8	5
18. Total days on pasture	50	82	-	21	35	26
<u>Prices of Cattle</u>						
19. Price paid per 100 lbs.	\$19.15	\$20.50	\$18.51	\$18.20	\$17.09	\$20.78
20. Price received per 100 lbs.	20.71	26.35	20.82	20.23	20.94	21.61
21. Price spread, per 100 lbs.	1.56	5.85	2.31	2.03	3.85	.83
<u>Cost and Returns per Lot</u>						
22. Total value produced	\$7431.22	\$4192.09	\$4686.57	\$7791.98	\$5336.47	\$7988.17
23. Total feed cost	5873.52	2437.32	2927.05	4901.50	3640.91	5324.17
24. Total return over feed cost	1557.70	1754.77	1759.52	2890.48	1695.56	2664.00
<u>Cost and Returns per 100 lbs. Gain</u>						
25. Value produced	\$22.00	\$30.12	\$22.83	\$22.04	\$24.52	\$22.33
26. Feed costs	17.63	17.51	14.26	13.86	16.73	14.88
27. RETURN OVER FEED COST	4.37	12.61	8.57	8.18	7.79	7.45
28. Return over feed cost from price spread	1.30	3.77	2.01	1.81	3.58	.72
29. Return over feed cost from feeding	3.07	8.84	6.56	6.37	4.21	6.73
30. Return per \$100 feed cost	127	172	160	159	146	150
31. Est. costs other than feed	4.49	4.49	4.49	4.49	4.49	4.49
32. Estimated net return	-.12	8.12	4.08	3.69	3.30	2.96

Table 3. Long-Fed Calves, 1954-55 (continued)

	Individual Lot Numbers									
	6	7	8	9	10	11	12	13	14	15
1.	204	40	31	39	140	56	35	18	81	57
2.	354	320	298	264	231	341	512	299	335	310
3.	0.5	2.5	0	0	0	3.6	0	0	0	0
4.	388	395	432	451	475	356	415	467	406	392
5.	980	949	841	887	946	951	1110	1031	923	899
6.	592	554	409	436	471	595	695	564	517	507
7.	1.7	1.7	1.4	1.7	2.0	1.7	1.4	1.9	1.5	1.6
8.	119822	21215	12700	16995	65935	31410	24360	10160	41860	28934
9.	458	428	518	515	481	499	547	494	559	480
10.	8	10	-	-	15	75	2	11	10	9
11.	44	8	35	53	60	71	56	21	12	56
12.	<u>510</u>	<u>446</u>	<u>553</u>	<u>568</u>	<u>556</u>	<u>645</u>	<u>605</u>	<u>526</u>	<u>581</u>	<u>545</u>
13.	67	290	148	174	273	72	330	191	121	28
14.	32	-	41	20	-	-	-	65	33	-
15.	<u>99</u>	<u>290</u>	<u>189</u>	<u>194</u>	<u>273</u>	<u>72</u>	<u>330</u>	<u>256</u>	<u>154</u>	<u>28</u>
16.	646	559	866	-	480	-	41	1181	387	463
17.	9	25	-	14	14	-	23	9	14	24
18.	54	138	-	63	68	-	161	52	72	120
19.	\$19.92	\$20.50	\$17.50	\$17.05	\$17.81	\$19.47	\$18.02	\$17.28	\$21.39	\$18.12
20.	21.19	22.04	20.70	19.25	21.31	20.64	22.93	20.81	21.80	20.23
21.	1.27	1.54	3.20	2.20	3.50	1.17	4.91	3.53	.41	2.11
22.	\$26396.29	4919.04	3053.72	3657.68	16374.79	6720.10	6300.43	2411.00	9264.66	6327.25
23.	<u>17504.73</u>	<u>3441.02</u>	<u>2185.84</u>	<u>2732.91</u>	<u>12888.30</u>	<u>5073.78</u>	<u>5036.07</u>	<u>1892.37</u>	<u>7143.71</u>	<u>4915.08</u>
24.	8891.56	1478.02	867.88	924.77	3486.49	1646.32	1264.36	518.63	2120.95	1412.17
25.	\$22.03	\$23.19	\$24.04	\$21.52	\$24.83	\$21.39	\$25.86	\$23.73	\$22.13	\$21.87
26.	<u>14.61</u>	<u>16.22</u>	<u>17.21</u>	<u>16.08</u>	<u>19.55</u>	<u>16.15</u>	<u>20.67</u>	<u>18.62</u>	<u>17.06</u>	<u>16.99</u>
27.	7.42	6.97	6.83	5.44	5.28	5.24	5.19	5.11	5.07	4.88
28.	.84	1.15	3.34	2.27	3.52	.75	2.93	2.92	.33	1.64
29.	6.58	5.82	3.49	3.17	1.76	4.49	2.26	2.19	4.74	3.24
30.	151	143	140	134	127	132	125	127	130	129
31.	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49
32.	2.93	2.48	2.34	.95	.79	.75	.70	.62	.58	.39

Table 3. Long-Fed Calves, 1954-55 (continued)

	Individual Lot Numbers				
	16	17	18	19	20
<u>No. and Wt. of Cattle Fed:</u>					
1. Number of head bought	100	60	116	39	150
2. Days on farm	236	353	300	344	401
3. Percent death loss	6.0	0	0.8	0	1.3
4. Avg. purchase wt. lbs.	346	476	424	439	402
5. Avg. sale wt. lbs.	825	1165	877	1012	1121
6. Gain per head, lbs.	479	689	453	573	719
7. Gain per head per day, lbs.	2.0	2.0	1.5	1.7	1.8
8. Lb. beef produced per lot	42960	41305	51775	22365	105545
<u>Feed Used per 100 lbs. Gain</u>					
9. Corn, lb.	509	490	488	446	488
10. Small grain, lb.	15	5	65	5	9
11. Commercial feed, lb.	36	42	62	43	49
12. Total concentrates, lb.	560	537	615	494	546
13. Legume hay, lb.	191	157	226	197	150
14. Other hay and stover, lb.	130	0	75	-	-
15. Total dry roughage, lb.	321	157	301	197	150
16. Silage, lb.	-	261	270	689	436
17. Pasture days	11	9	-	18	16
18. Total days on pasture	51	60	-	103	114
<u>Prices of Cattle</u>					
19. Price paid per 100 lbs.	\$16.23	\$21.85	\$19.56	\$19.30	\$20.64
20. Price received per 100 lbs.	19.03	21.27	20.92	19.71	20.12
21. Price spread, per 100 lbs.	2.80	-.58	1.36	.41	-.52
<u>Cost and Returns per lot</u>					
22. Total value produced	\$9144.77	\$8625.93	\$11500.69	\$4478.22	\$20919.59
23. Total feed cost	7070.37	6685.10	9357.25	3719.28	17416.04
24. Total return over feed cost	2074.40	1940.83	2143.44	758.94	3503.55
<u>Cost and Returns per 100 lbs. Gain</u>					
25. Value produced	\$21.29	\$20.88	\$22.21	\$20.02	\$19.82
26. Feed costs	16.45	16.19	18.07	16.63	16.50
27. RETURN OVER FEED COST	4.84	4.69	4.14	3.39	3.32
28. Return over feed cost from price spread	2.25	-.39	1.29	.31	-.30
29. Return over feed cost from feeding	2.59	5.08	2.85	3.08	3.62
30. Return per \$100 feed cost	129	129	123	120	120
31. Est. costs other than feed	4.49	4.49	4.49	4.49	4.49
32. Estimated net return	.35	.20	-.35	-1.10	-1.17

Table 3. Long-Fed Calves, 1954-55 (continued)

	Individual lot numbers								
	21	22	23	24	25	26	27	28	29
1.	64	54	61	24	22	108	41	23	39
2.	307	293	327	255	343	339	315	409	365
3.	1.6	1.8	0	0	4.5	2.8	0	0	2.5
4.	442	358	420	325	354	376	447	425	394
5.	966	825	927	734	882	987	1028	1116	835
6.	524	467	507	409	528	611	581	691	441
7.	1.7	1.6	1.6	1.6	1.5	1.8	1.8	1.7	1.2
8.	32530	24440	30870	9810	10735	63050	23815	15885	16340
9.	547	573	491	708	629	598	501	594	726
10.	87	24	21	-	7	61	4	43	22
11.	76	29	49	59	58	34	36	64	62
12.	<u>710</u>	<u>626</u>	<u>561</u>	<u>767</u>	<u>694</u>	<u>693</u>	<u>541</u>	<u>701</u>	<u>810</u>
13.	95	348	220	61	335	365	445	239	190
14.	-	-	-	-	-	-	168	63	-
15.	<u>95</u>	<u>348</u>	<u>220</u>	<u>61</u>	<u>335</u>	<u>365</u>	<u>613</u>	<u>302</u>	<u>190</u>
16.	523	-	635	-	-	5	118	390	1560
17.	-	-	-	18	6	-	21	-	-
18.	-	-	-	75	30	-	123	-	-
19.	\$17.25	\$20.98	\$22.16	\$17.00	\$17.33	\$22.00	\$20.48	\$20.65	\$17.70
20.	19.80	20.63	20.41	19.60	19.60	20.41	19.48	20.00	18.69
21.	2.55	-.35	-1.75	2.60	2.27	-1.59	-1.00	-.65	.99
22.	\$7169.14	\$4975.51	\$5855.01	\$2126.50	\$2280.58	\$12227.54	\$4457.87	\$3115.75	\$3208.13
23.	6272.68	4306.10	5251.86	1952.47	2111.71	12324.22	4588.97	3366.30	3865.13
24.	<u>896.46</u>	<u>669.41</u>	<u>603.15</u>	<u>174.03</u>	<u>168.87</u>	<u>-96.68</u>	<u>-131.10</u>	<u>-250.55</u>	<u>-657.00</u>
25.	\$22.04	\$20.36	\$18.97	\$21.67	\$21.24	\$19.39	\$18.72	\$19.61	\$19.63
26.	19.28	17.62	17.02	19.90	19.67	19.54	19.27	21.19	23.65
27.	<u>2.76</u>	<u>2.74</u>	<u>1.95</u>	<u>1.77</u>	<u>1.57</u>	<u>-.15</u>	<u>-.55</u>	<u>-1.58</u>	<u>-4.02</u>
28.	2.24	-.27	-1.44	2.07	1.64	-1.02	-.76	-.39	.94
29.	.52	3.01	3.39	-.30	-.07	.87	.21	-1.19	-4.96
30.	114	116	111	109	108	99	97	93	83
31.	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49
32.	-1.73	-1.75	-2.54	-2.72	-2.92	-4.64	-5.04	-6.07	-8.51

Table 4. Long-Fed Yearlings, 1954-55

	Average of 19 lots	Individual lot numbers				
		30	31	32	33	34
<u>No. and Wt. of Cattle Fed:</u>						
1. Number of head bought	58	47	51	25	58	50
2. Days on farm	309	342	245	273	358	356
3. Percent death loss	.8	0	2.0	0	0	2.0
4. Avg. purchase wt. lbs.	621	638	746	513	649	508
5. Avg. sale wt. lbs.	1123	1075	1157	1125	1191	1291
6. Gain per head, lbs.	502	437	411	612	542	783
7. Gain per head per day, lbs.	1.6	1.3	1.7	2.2	1.5	2.2
8. Lb. beef prod. per lot	28454	20518	20945	15310	31456	37860
<u>Feed Used per 100 lb. Gain</u>						
9. Corn, lb.	493	594	677	382	408	457
10. Small grain, lb.	15	6	97	13	0	6
11. Commercial feed, lb.	46	21	43	23	5	47
12. Total Concentrates	<u>554</u>	<u>621</u>	<u>817</u>	<u>418</u>	<u>413</u>	<u>510</u>
13. Legume hay, lb.	265	536	358	130	130	217
14. Other hay and stover, lb.	<u>39</u>	-	<u>153</u>	<u>118</u>	-	-
15. Total dry roughage, lb.	<u>304</u>	<u>536</u>	<u>511</u>	<u>248</u>	<u>130</u>	<u>217</u>
16. Silage, lb.	890	-	463	-	846	423
17. Pasture days	12	21	12	10	34	7
18. Total days on pasture	62	93	50	60	184	53
<u>Prices of Cattle</u>						
19. Price paid per 100 lbs.	\$20.10	\$19.51	\$20.25	\$22.00	\$20.72	\$19.00
20. Price received per 100 lbs.	21.29	23.81	25.36	21.37	21.92	20.88
21. Price spread, per 100 lbs.	-1.19	4.30	5.11	-.63	1.20	1.88
<u>Cost and Returns per Lot</u>						
22. Total value produced	\$6311.74	\$6179.39	\$7261.25	\$3191.57	\$7352.58	\$8383.30
23. Total feed cost	<u>5510.51</u>	<u>4256.69</u>	<u>5461.29</u>	<u>1921.90</u>	<u>4837.34</u>	<u>5997.00</u>
24. Total ret. over feed cost	<u>801.23</u>	<u>1922.70</u>	<u>1799.96</u>	<u>1269.67</u>	<u>2515.24</u>	<u>2386.30</u>
<u>Cost and Returns per 100 lbs. Gain</u>						
25. Value produced	\$22.89	\$30.12	\$34.67	\$20.85	\$23.34	\$22.14
26. Feed costs	<u>19.46</u>	<u>20.74</u>	<u>26.07</u>	<u>12.56</u>	<u>15.38</u>	<u>15.84</u>
27. RETURN OVER FEED COST	<u>3.43</u>	<u>9.38</u>	<u>8.60</u>	<u>8.29</u>	<u>7.96</u>	<u>6.30</u>
28. Return over feed cost from price spread	1.59	6.31	9.31	-.52	1.42	1.26
29. Return over feed cost from feeding	1.84	3.07	-.71	8.81	6.54	5.04
30. Return per \$100 feed cost	120	145	133	166	152	140
31. Est. Costs other than feed	4.49	4.49	4.49	4.49	4.49	4.49
32. Estimated net return	-1.06	4.89	4.11	3.80	3.47	1.81

Table 4. Long-Fed Yearlings, 1954-55 (continued)

	Individual lot numbers								
	35	36	37	38	39	40	41	42	43
1.	76	79	53	31	84	33	33	50	40
2.	327	254	260	292	317	391	278	259	339
3.	0	0	0	3.2	2.4	0	0	0	0
4.	533	648	560	554	564	653	738	612	534
5.	1194	1051	899	1027	1173	1226	1084	1109	1053
6.	661	403	339	473	609	573	346	497	519
7.	2.0	1.6	1.3	1.6	1.9	1.5	1.2	1.9	1.5
8.	50240	31770	17995	13640	48810	18936	11400	24880	20760
9.	431	557	632	315	444	522	403	631	444
10.	4	10	20	5	65	3	-	-	-
11.	53	108	21	103	55	56	14	42	6
12.	<u>488</u>	<u>675</u>	<u>673</u>	<u>423</u>	<u>564</u>	<u>581</u>	<u>417</u>	<u>673</u>	<u>450</u>
13.	113	113	845	208	168	158	298	130	245
14.	-	-	122	-	-	-	-	43	-
15.	<u>113</u>	<u>113</u>	<u>967</u>	<u>208</u>	<u>168</u>	<u>158</u>	<u>298</u>	<u>173</u>	<u>245</u>
16.	790	566	-	1353	627	391	1825	723	1324
17.	10	-	-	7	2	22	18	6	-
18.	64	-	-	34	13	124	61	30	-
19.	\$20.03	\$19.27	\$17.74	\$18.00	\$16.43	\$20.80	\$18.81	\$19.04	\$25.09
20.	20.89	21.59	21.29	20.16	20.13	21.60	20.00	20.85	21.47
21.	.86	2.32	3.55	2.16	3.70	.80	1.19	1.81	-3.62
22.	10848.36	8046.30	4885.58	3120.29	9826.93	4260.18	2570.44	5745.67	3683.12
23.	8087.97	6394.08	4143.56	2579.97	8020.58	3560.92	2199.01	4981.50	3381.49
24.	<u>2760.39</u>	<u>1652.22</u>	<u>742.02</u>	<u>540.32</u>	<u>1806.35</u>	<u>699.26</u>	<u>371.43</u>	<u>764.17</u>	<u>301.63</u>
25.	\$21.59	\$25.33	\$27.15	\$22.87	\$20.13	\$22.49	\$22.55	\$23.09	\$17.74
26.	<u>16.10</u>	<u>20.13</u>	<u>23.02</u>	<u>18.91</u>	<u>16.43</u>	<u>18.80</u>	<u>19.29</u>	<u>20.02</u>	<u>16.29</u>
27.	5.49	5.20	4.13	3.96	3.70	3.69	3.26	3.07	1.45
28.	.70	3.74	5.86	2.76	-.26	.89	2.55	2.24	-3.73
29.	4.79	1.46	-1.73	1.20	3.96	2.80	.71	.83	5.18
30.	134	126	118	121	123	120	117	115	109
31.	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49
32.	1.00	.71	-.36	-.53	-.79	-.80	-1.23	-1.42	-3.04

Table 4. Long-Fed Yearlings, 1954-55 (continued)

	Individual lot numbers				
	44	45	46	47	48
<u>No. and Wt. of Cattle Fed:</u>					
1. Number of head bought	91	29	21	65	190
2. Days on farm	338	338	265	290	341
3. Percent death loss	.0	0	0	0	5.8
4. Avg. purchase wt. lbs.	712	763	757	581	527
5. Avg. sale wt. lbs.	1300	1258	1146	1010	962
6. Gain per head, lbs.	588	495	389	429	435
7. Gain per head per day, lbs.	1.7	1.5	1.5	1.5	1.3
8. Lb. beef prod. per lot	53565	14370	8165	27925	72080
<u>Feed Used per 100 lb. Gain</u>					
9. Corn, lb.	562	737	481	517	182
10. Small grain, lb.	-	27	-	15	6
11. Commercial feed, lb.	33	44	63	40	89
12. Total Concentrates	<u>595</u>	<u>808</u>	<u>544</u>	<u>572</u>	<u>277</u>
13. Legume hay, lb.	336	122	359	555	15
14. Other hay and stover, lb.	11	122	-	61	103
15. Total dry roughage, lb.	<u>347</u>	<u>244</u>	<u>359</u>	<u>616</u>	<u>118</u>
16. Silage, lb.	691	156	1433	774	4522
17. Pasture days	16	21	12	8	30
18. Total days on pasture	97	102	47	36	132
<u>Prices of Cattle</u>					
19. Price paid per 100 lbs.	\$20.89	\$19.64	\$20.00	\$22.75	\$21.87
20. Price received per 100 lbs.	20.83	20.90	20.12	20.93	20.48
21. Price spread, per 100 lbs.	-.06	1.26	.12	-1.82	-1.39
<u>Cost and Returns per Lot</u>					
22. Total value produced	\$11112.21	\$3281.90	\$1663.02	\$5158.10	\$13353.01
23. Total feed cost	<u>10880.15</u>	<u>3320.94</u>	<u>1800.67</u>	<u>5897.58</u>	<u>16977.02</u>
24. Total ret. over feed cost	232.06	-39.04	-137.65	-739.48	-3624.01
<u>Cost and Returns per 100 lbs. Gain</u>					
25. Value produced	\$20.75	\$22.84	\$20.37	\$18.47	\$18.52
26. Feed costs	<u>20.31</u>	<u>23.11</u>	<u>22.05</u>	<u>21.12</u>	<u>23.55</u>
27. RETURN OVER FEED COST	.44	-.27	-1.68	-2.65	-5.03
28. Return over feed cost from price spread	-.08	1.94	.25	-2.46	-1.96
29. Return over feed cost from feeding	.52	-2.21	-1.93	-.19	-3.07
30. Return per \$100 feed cost	102	99	92	87	77
31. Est. costs other than feed	4.49	4.49	4.49	4.49	4.49
32. Estimated net return	-4.05	-4.76	-6.17	-7.14	-9.52

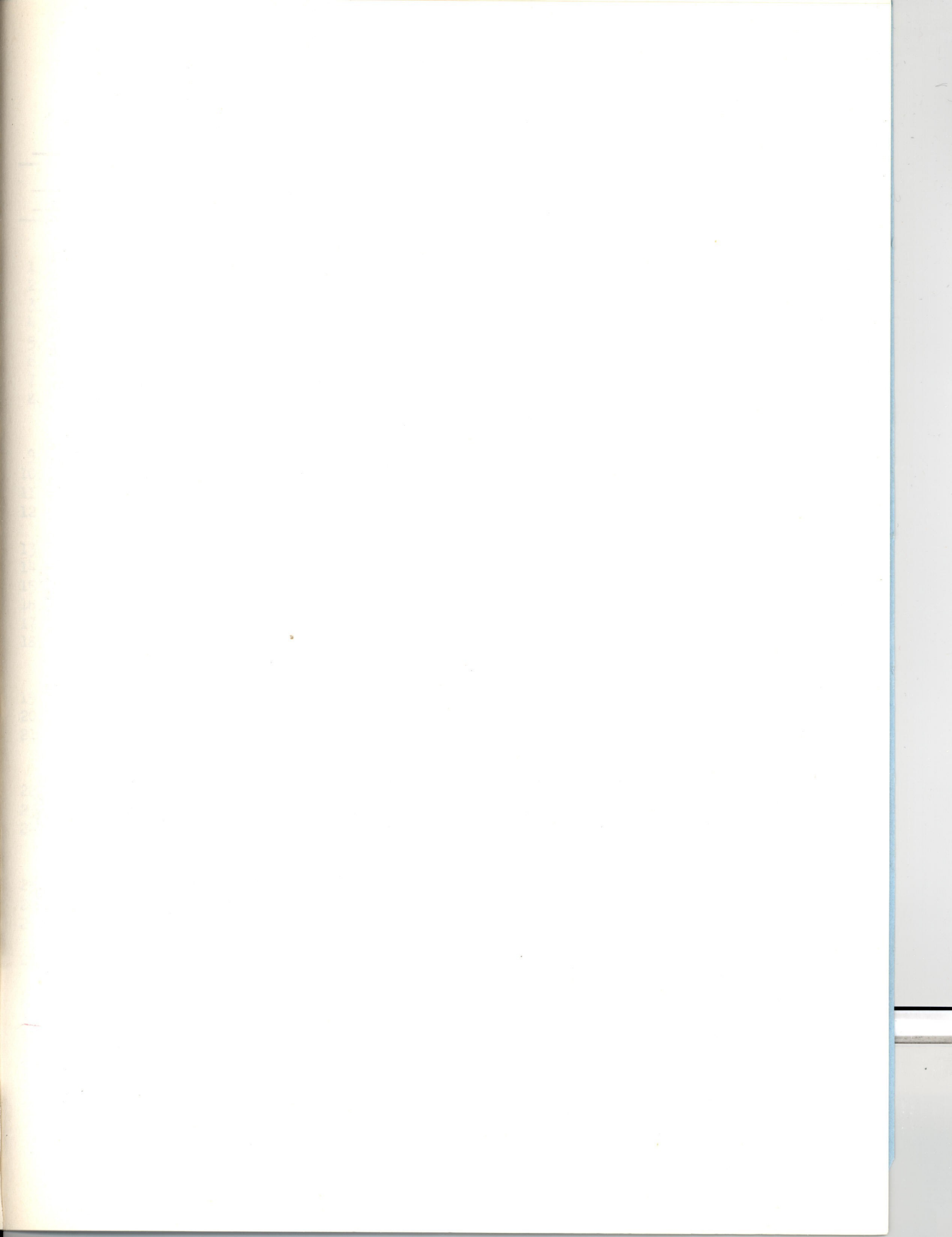


Table 5. Short-Fed Yearlings and Two-Year-Olds, 1954-55

	Average of 14 lots	Individual lot numbers				
		49	50	51	52	53
<u>No. and Wt. of Cattle Fed:</u>						
1. Number of head bought	48	26	26	23	20	21
2. Days on farm	172	119	205	176	198	142
3. Percent death loss	1.2	4.0	0	0	0	0
4. Avg. purchase wt. lbs.	746	921	810	601	782	815
5. Avg. sale wt. lbs.	1084	1222	1145	807	1275	1131
6. Gain per head, lbs.	338	301	335	206	493	316
7. Gain per head per day, lbs.	2.0	2.5	1.6	1.2	2.5	2.2
8. Lb. beef produced per lot	14050	6600	8700	4725	9855	6635
<u>Feed Used per 100 lb. Gain</u>						
9. Corn, lb.	597	409	428	546	489	692
10. Small grain, lb.	7	3	-	15	3	21
11. Commercial feed, lb.	70	78	80	127	72	24
12. Total concentrates, lb.	674	490	508	688	564	737
13. Legume hay, lb.	330	197	598	391	274	90
14. Other hay and stover, lb.	28	-	-	-	5	-
15. Total dry roughage, lb.	358	197	598	391	279	90
16. Silage, lb.	812	1303	1437	2285	325	844
17. Pasture days	5	10	12	-	-	14
18. Total days on pasture	15	29	40	-	-	45
<u>Prices of Cattle</u>						
19. Price paid per 100 lbs.	\$17.77	\$20.15	\$11.03	\$17.00	\$20.00	\$16.99
20. Price received per 100 lbs.	19.90	24.38	17.81	20.96	22.50	20.00
21. Price spread, per 100 lbs.	2.13	4.23	6.78	3.96	2.50	3.01
<u>Cost and Returns per Lot</u>						
22. Total value produced	\$3549.74	\$2622.87	\$2975.44	\$1538.27	\$2608.37	\$1843.01
23. Total feed cost	3324.58	1271.10	2037.92	1076.85	1702.29	1419.78
24. Total return over feed cost	225.16	1351.77	937.52	461.42	906.08	423.23
<u>Cost and Returns per 100 lbs. Gain</u>						
25. Value produced	\$25.61	\$39.74	\$34.20	\$32.55	\$26.46	\$27.78
26. Feed costs	22.16	19.25	23.42	22.80	17.27	21.40
27. RETURN OVER FEED COSTS	3.45	20.48	10.78	9.75	9.19	6.38
28. Return over feed cost from price spread	5.70	15.35	16.39	11.59	3.96	7.78
29. Return over feed cost from feeding	-2.25	5.13	-5.61	-1.84	5.23	-1.40
30. Return per \$100 feed cost	119	206	146	143	153	130
31. Est. costs other than feed	4.49	4.49	4.49	4.49	4.49	4.49
32. Estimated net return	-1.04	15.99	6.29	5.26	4.70	1.89

Table 5. Short-Fed Yearlings and Two-Year-Olds, 1954-55 (continued)

	Individual lot numbers								
	54	55	56	57	58	59	60	61	62
1.	45	10	34	306	26	25	17	22	72
2.	178	207	205	182	186	155	207	80	173
3.	0	0	0	0.65	0	0	0	0	12.5
4.	756	689	743	616	825	900	556	744	682
5.	1170	1030	1156	886	1114	1287	1006	910	999
6.	414	341	413	270	319	387	450	166	317
7.	2.3	1.6	2.0	1.5	1.7	2.5	2.2	2.1	1.8
8.	18655	3415	14030	80991	8285	9670	7650	3662	13835
9.	624	369	658	689	233	741	665	765	1052
10.	-	-	23	11	-	-	18	-	-
11.	31	50	73	80	49	170	76	22	45
12.	655	419	754	780	282	911	759	787	1097
13.	198	286	392	89	1078	103	183	410	325
14.	-	95	-	-	-	-	65	-	231
15.	198	381	392	89	1078	103	248	410	556
16.	236	703	114	2198	1207	248	26	437	-
17.	-	5	6	-	-	-	-	-	18
18.	-	17	24	-	-	-	-	-	58
19.	\$19.69	\$18.00	\$19.05	\$13.77	\$19.55	\$21.64	\$22.10	\$18.00	\$11.79
20.	21.22	19.27	21.28	17.23	19.50	22.21	20.21	18.33	13.77
21.	1.53	1.27	2.23	3.46	-.05	.57	-1.89	.33	1.98
22.	\$4479.79	\$745.95	\$3547.95	\$20484.82	\$1604.89	\$2276.32	\$1367.67	\$723.27	\$2877.75
23.	3337.07	585.62	3073.50	20906.76	1699.97	2555.66	1602.09	860.69	4414.86
24.	1142.72	160.33	474.45	-421.94	-95.08	-279.34	-234.42	-137.42	-1537.11
25.	\$24.01	\$21.84	\$25.29	\$25.29	\$19.37	\$23.54	\$17.87	\$19.75	\$20.80
26.	17.89	17.15	21.91	25.81	20.52	26.42	20.94	23.50	31.91
27.	6.13	4.69	3.38	-.52	-1.15	-2.88	-3.07	-3.75	-11.11
28.	2.80	2.57	4.01	8.06	-.13	1.33	-2.34	1.42	7.03
29.	3.33	2.12	-.63	-8.58	-1.02	-4.21	-.73	-5.17	-18.14
30.	134	127	115	98	94	89	85	84	65
31.	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49
32.	1.64	.20	-1.11	-5.01	-5.64	-7.37	-7.56	-8.24	-15.60

Table 6. A Three-Year Comparison of Feeder Cattle Costs and Returns

	Long-Fed Calves		
	1952-53	1953-54	1954-55
	Ave 18 lots	Ave 20 lots	Ave 29 lots
No. and Wt. of Cattle Fed:			
1. Number of head bought	67	57	64
2. Days on farm	328	340	324
3. Percent death loss	1.9	1.9	1.1
4. Ave. purchase wt. lbs.	408	413	410
5. Ave. sale wt. lbs.	952	965	947
6. Gain per head, lbs.	544	552	537
7. Gain per head per day, lbs.	1.7	1.6	1.7
8. Lb. beef produced per lot	35429	30073	34212
Feed Used per 100 lb. Gain			
9. Corn, lb.	524	480	515
10. Small grain, lb.	22	22	20
11. Commercial feed, lb.	45	43	47
12. Total concentrates, lb.	591	545	582
13. Legume hay, lb.	299	323	199
14. Other hay and stover, lb.	25	23	23
15. Total dry roughage, lb.	324	346	222
16. Silage, lb.	368	410	395
17. Pasture days	11	11	9
18. Total days on pasture	56	57	50
Prices of Cattle			
19. Price paid per 100 lbs.	\$27.28	\$20.40	\$19.15
20. Price received per 100 lbs.	23.69	22.79	20.71
21. Price spread, per 100 lbs.	-3.59	2.39	1.56
Cost and Returns per Lot			
22. Total value produced	\$7593.26	\$7545.81	\$7431.22
23. Total feed cost	6751.57	5749.13	5873.52
24. Total return over feed cost	841.69	1796.68	1557.70
Cost and Returns per 100 lbs. Gain			
25. Value produced	\$20.94	\$24.72	\$22.00
26. Feed costs	19.74	18.89	17.63
27. RETURN OVER FEED COSTS	1.20	5.83	4.37
28. Return over feed cost from price spread	-2.75	1.93	1.30
29. Return over feed cost from feeding	3.95	3.90	3.07
30. Return per \$100 feed cost	106	131	127
31. Est. costs other than feed	4.49	4.49	4.49
32. Estimated net return	-3.29	1.34	-.12

Table 6. A Three-Year Comparison of Feeder Cattle Costs and Returns (continued)

	Long-Fed Yearlings			Short-Fed Yearlings and Two-Year-Olds		
	1952-53	1953-54	1954-55	1952-53	1953-54	1954-55
	Ave 10 lots	Ave 16 lots	Ave 19 lots	Ave 15 lots	Ave 16 lots	Ave 14 lots
1.	44	64	58	43	44	48
2.	333	323	309	167	178	172
3.	0.7	0.6	0.8	1.0	0.2	1.2
4.	643	645	621	751	699	746
5.	1132	1130	1123	1065	1033	1084
6.	489	485	502	314	334	338
7.	1.5	1.5	1.6	1.9	1.9	2.0
8.	21100	32449	28454	12760	14303	14050
9.	520	521	493	703	645	597
10.	11	16	15	10	46	7
11.	53	55	46	61	63	70
12.	584	592	554	774	754	674
13.	197	337	265	201	288	330
14.	42	39	39	32	3	28
15.	239	376	304	233	291	358
16.	922	569	890	535	681	812
17.	8	10	12	9	7	5
18.	42	54	62	28	23	15
19.	\$28.89	\$19.97	\$20.10	\$23.37	\$16.14	\$17.77
20.	23.83	22.66	21.29	20.10	21.59	19.90
21.	-5.06	2.69	1.19	-3.27	5.45	2.13
22.	\$3611.93	\$8439.72	\$6311.74	\$1452.89	\$4651.75	\$3549.74
23.	<u>4297.72</u>	<u>7185.84</u>	<u>5510.51</u>	<u>3202.84</u>	<u>3492.55</u>	<u>3324.58</u>
24.	-685.79	1253.88	801.23	-1749.95	1159.20	225.16
25.	\$17.14	\$27.04	\$22.89	\$12.90	\$33.21	\$25.61
26.	<u>20.80</u>	<u>21.34</u>	<u>19.46</u>	<u>24.19</u>	<u>23.95</u>	<u>22.16</u>
27.	-3.66	5.70	3.43	-11.29	9.26	3.45
28.	-6.69	4.38	1.59	-7.20	11.62	5.70
29.	3.03	1.32	1.84	-4.09	-2.36	-2.25
30.	82	127	120	53	139	119
31.	4.49	4.49	4.49	4.49	4.49	4.49
32.	-8.15	1.21	-1.06	-15.78	4.77	-1.04

COSTS AND RETURNS

Returns or profits in cattle feeding are determined by the sales income minus the costs. The major items of cost are the cattle themselves and the feed they consume. The beef cattle feeder aims to maximize profits by keeping these costs in line with the anticipated selling price.

The cost and return information presented in tables 3, 4, and 5 gives the prices paid and received for cattle, the cost and returns per lot and the cost and returns per 100 pounds gain.

The price spread (line 21) is the difference between the purchase price and selling price per 100 pounds. The main comparison and analysis is made by cost and returns per 100 pounds gain as found in the last part of the tables, (lines 25-29). The return over feed cost per 100 pounds of gain in weight (line 27) is used in this study as a measure of relative profitability of individual lots of cattle and of the different groups compared. A return over feed costs results from (1) a positive price spread and (2) gain in weight produced in the feed lot at less cost than the selling price. The return over feed cost from price spread (line 28) and return over feed cost from feeding (line 29) indicates the amount each contributes to the return over feed cost. The return from feeding (line 29) is the difference between the feed cost per 100 pounds gain and the selling price per 100 pounds. The remainder of the return is from price spread minus death loss. The return per \$100 feed cost (line 30) is the measure of the total return compared to feed cost.

The return over feed cost does not tell the whole story as to returns in cattle feeding. Feed cost is a major item of cost but other costs, such as labor, interest, shelter, equipment, power and some miscellaneous costs, must be covered if one wishes to compute net returns. Data covering these items were not available for the farms covered by this study. However, a cost accounting study on similar feeding operations in southern Minnesota in 1953 showed the average cost of these items to be \$4.49 per 100 pounds net gain in weight.^{1/} This average charge has been used in tables 3, 4, and 5 (line 31) in computing the net return from each lot of cattle. The return over all costs thus computed must be regarded as only an approximation. The range of other costs in the study was from \$2.71 to \$6.82 per 100 pounds of cattle produced among the lots included. This rough approximation of \$4.49 per 100 pounds does help in determining the profitability of cattle feeding.

COMPARATIVE ANALYSIS OF PRICE SPREAD, FEED COSTS AND RETURNS

An analysis of tables 3, 4, and 5 indicates a wide variation among the different lots as to costs and returns. A comparison of the high profit lots and the low profit lots will indicate that the major factors affecting profit are feed cost and price spread.

The importance of low feed costs and marketing margins for profitable cattle

^{1/} Agricultural Economics Report No. 217. Institute of Agriculture, University of Minnesota, September, 1954.

feeding is emphasized in Table 7. Each of the three types of feeding programs as listed in tables 3, 4, and 5 are divided into the lots with above average return above feed cost per 100 pounds gain and those with below average returns.

A study of table 7 indicates that there were no significant differences between the high and low profit groups as to length of feeding period, purchase weight, sales weight, daily gain or days on pasture. The two major differences between the high and low profit groups are found in the price spread (line 14) and the feed cost (line 16). These factors affect the return over feed cost from price spread (line 18) and the return over feed cost from feeding (line 19).

Table 7. Comparison of High and Low Profit Lots, 1954-55

	Long-Fed Calves			Long-Fed Yearlings			Short-Fed Yearlings and Two-Year Olds		
	Average for 17 lots with 12 lots with		Average for 11 lots with 8 lots with		Average for 7 lots with 7 lots with		Average for 7 lots with 7 lots with		
	for above ave. return	below ave. return	for above ave. return	below ave. return	for above ave. return	below ave. return	for above ave. return	below ave. return	
1. Days on farm	324	318	333	309	310	307	172	175	170
2. Percent death loss	1.1	0.9	1.3	0.8	0.9	0.7	1.2	0.6	2.7
3. Ave. Purch. wt. lbs.	410	416	401	621	597	656	746	768	724
4. Ave. Sale wt. lbs.	947	949	943	1123	1128	1115	1084	1111	1055
5. Gain/head, lbs.	537	533	542	502	531	459	338	343	331
6. Gain/hd./day, lbs.	1.7	1.7	1.6	1.6	1.7	1.5	2.0	2.0	2.0
Feed Used per 100 lb. gain									
7. Grain, lb.	535	488	586	508	513	504	604	514	693
8. Commercial feed lb.	47	48	52	46	49	41	70	66	74
9. Tot. conc., lb.	582	536	638	554	562	545	674	580	767
10. Dry roughage, equi., lbs.	354	326	393	600	472	777	629	645	612
11. Pasture days	9	10.7	6.6	12	11	10	5	6	3.4
Prices of Cattle									
12. Price pd/100 lb.	\$19.15	\$18.84	\$19.59	\$20.10	\$19.43	\$21.00	\$17.77	\$17.55	\$17.98
13. Price rec/100 lb.	20.71	21.24	19.95	21.29	21.73	20.69	19.90	20.87	18.93
14. Price spread per 100 lbs.	1.56	2.40	.36	1.19	2.30	-.31	2.13	3.33	.95
Cost & Returns per 100 lbs. gain									
15. Value produced	22.00	23.15	20.31	22.89	24.61	20.54	25.61	29.51	21.70
16. Feed Costs	17.63	16.65	18.03	19.46	18.54	20.71	22.16	19.88	24.43
17. Ret. over Feed Costs	4.37	6.50	1.28	3.43	6.07	-.17	3.45	9.63	-2.73
18. Return over Feed Cost from Price Spread	1.30	1.90	0.36	1.59	2.87	-.15	5.70	8.63	2.76
19. Return over Feed Cost from Feeding	3.07	4.60	0.92	1.84	3.20	-.02	-2.25	1.00	-5.49
20. Return per \$100 Feed Cost	127	140	108	120	134	100	119	148	90
21. Est. other Costs	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49
22. Est. Net Return	-.12	2.01	-3.21	-1.06	1.58	-4.66	-1.04	5.14	-7.22

Table 8. Price Spread, Feed Costs and Returns, 1954-55

	Long-Fed Calves			Long-Fed Yearlings			Short-Fed Yearlings and Two-Year-Olds		
	Lots above ave.	Lots below ave.	Diff.	Lots above ave.	Lots below ave.	Diff.	Lots above ave.	Lots below ave.	Diff.
	14. Price Spread per 100 lbs.	\$2.40	\$.36	\$2.04	\$2.30	\$-.31	\$2.61	\$3.33	\$.95
16. Feed costs per 100 lbs. gain	16.65	18.03	1.38	18.54	20.71	2.17	19.88	24.43	4.55
18. Return over feed cost from price spread	1.90	.36	1.54	2.87	-.15	3.02	8.63	2.76	5.87
19. Return over feed cost from feeding	4.60	.92	3.68	3.20	-.02	3.22	1.00	-5.49	6.49
17. Return over feed costs per 100 lbs. gain	6.50	1.28	5.22	6.07	-.17	6.24	9.63	-2.73	12.36

The data in Table 8 was computed from figures taken from lines 14, 16, 17, 18, and 19 in Table 7. These figures indicate how the differences in price spread and feed cost contribute to the difference in return over feed cost per 100 pounds gain. For the three types of cattle feeding programs the table shows the figures for the above average group, the below average group and the difference between the two on price spread, costs and returns. For example, for calves the return over feed cost for the above average group was \$6.50, for the below average group it was \$1.28, or a difference of \$5.22. Of this difference, \$1.54 was the difference in return over feed cost from price spread and \$3.68 was the difference in return over feed costs from feeding. Similar comparisons can be made for the long-fed yearlings and for the short-fed yearlings and two-year-olds. The widest difference in return between the high and low return groups was in the lots of short-fed yearlings and two-year-olds. There was a wider difference in price spread and feed costs than for the calves or long-fed yearlings.

Table 9. Price Spread, Feed Costs and Returns
Two-Year Average, 1953-54, 1954-55

	Long-Fed Calves			Long-Fed Yearlings			Short-Fed Yearlings and Two-Year-Olds		
	Lots above ave.	Lots below ave.	Diff.	Lots above ave.	Lots below ave.	Diff.	Lots above ave.	Lots below ave.	Diff.
	14. Price Spread per 100 lbs.	\$3.70	\$-1.05	\$4.75	\$3.65	\$-.30	\$3.95	\$4.99	\$2.60
16. Feed costs per 100 lbs. gain	17.18	19.56	2.38	19.19	21.99	2.80	20.56	25.56	5.00
18. Return over feed cost from price spread	2.87	-.58	3.45	4.98	.37	4.61	11.44	5.84	5.60
19. Return over feed cost from feeding	5.20	.60	4.60	3.22	-.58	3.80	.35	-4.94	5.29
17. Return over feed costs per 100 lbs. gain	8.07	.02	8.05	8.20	-.21	8.41	11.79	.90	10.89

Two year averages of the same information as found in Table 8 is presented in Table 9. In computing the average, equal weight was given for the figures for each of the two years. It will be noted that the two-year average indicates the same general trends on differences between return from price spread and return from feeding as was found for the one year, 1954-55.

These comparisons indicate that differences in returns from feeding and from price spread were of fairly equal importance as contributing factors towards the differences in return between the high profit lots and the low profit lots.

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

The data in Table 10 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 gains in weight as are represented by these lots of long-fed calves, long-fed yearlings, and short-fed yearlings and two-year-olds.

Table 10. Returns from Price Spread and from Feeding

	Long-Fed Calves Ave. of 29 lots	Long-Fed Yearlings Ave. of 19 lots	Short-Fed Yearlings and Two-Year-Olds Ave. of 14 lots
Price Spread/100 lbs.	1.56	1.19	2.13
Return over feed cost from price spread	1.30	1.59	5.70
Return over feed cost from feeding	3.07	1.84	-2.25
Return over feed cost per 100 lbs. gain	4.37	3.43	3.45
Ave. purchase wt., lbs.	410	621	746
Gain per head, lbs.	537	502	338

The returns from feeding are of most importance in the calf feeding program and become relatively less important for the long-fed yearlings and least in importance for the short-fed yearlings and two-year-olds (see Table 10). 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 least importance for calves because of their lower initial weight and becomes relatively more important as the purchase weights increase with the older and heavier cattle. A comparison of the importance of price spread might be made by comparing the calves with the short-fed yearlings and two-year-olds. For the calves the price spread was \$1.56 per hundred but the return from price spread per 100 pounds gain was only \$1.30 of the total \$4.37 return per 100 pounds gain. The average gain in weight was 537 pounds per head compared to the average purchase weight of 410 pounds. The profit on the gain was more important because the gain exceeded the initial weight by 127 pounds. For the short-fed yearlings and two-year-olds the price spread was \$2.13 per 100 pounds but the return from price spread per 100 pounds gain in weight was \$5.70. The total return was \$3.45 per 100 pounds gain after subtracting the \$2.25 loss from feeding. The gain in weight was 338 pounds and the average purchase weight was 746 pounds. The price spread was relatively more important than feeding profit because the initial weight exceeded the gain in weight by 408 pounds. In other words, the return on these heavier cattle was made by selling the initial purchase weight at a good margin or 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 selling weight, the more important price spread becomes. It means that feeding of calves has less risk than feeding heavier cattle but there is also less potential profit. The buying and selling phase of the heavy cattle feeding program becomes extremely important because the price spread is the main factor in determining profits. Heavy cattle feeding is a higher risk program with chances of higher profits or greater losses.