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FEEDER CATTLE
COSTS AND RETURNS
1956 - 1957

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

Report No. 240
Department of Agricultural Economics
Institute of Agriculture
University of Minnesota
St. Paul 1, Minnesota
August 1958

FEEDER CATTLE COSTS AND RETURNS

1956 - 1957

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INTRODUCTION

The return over feed cost 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 79 lots of feeder cattle on southern Minnesota farms in the 1956-57 feeding season. This information was obtained from records kept by members of the Southeastern, Southwestern, and West Central Minnesota Farm Management Services. Labor requirements are included for those lots having detailed labor records. The purpose of this report is to make available data regarding the results from feeding operations and amounts of labor used with the various feeder cattle programs.

The data presented cover individual lots of cattle from purchase as feeders to sale as fat cattle. Three different 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 classified as "short-fed" and those fed for longer periods as "long-fed". Steers and heifers are combined. All lots with an

average weight of 500 pounds or less per head at purchase are classed as calves.

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 1956 and 1957. 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.

Table 1. Average Annual Feed Prices

	1956	1957
Alfalfa hay, per ton	\$18.50	\$17.50
Timothy or brome hay, per ton	10.95	9.80
Oats or hay silage, per ton	6.50	6.05
Corn silage, per ton	6.00	5.75
Ear corn, per bu.	1.25	1.10
Oats, per bu.	.63	.61
Linseed oil meal, per 100 lbs.	3.67	3.53
Soybean oil meal, per 100 lbs.	3.72	3.25

Monthly prices of stocker and feeder cattle at South St. Paul from January, 1956, through June, 1958, 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.

Dollars

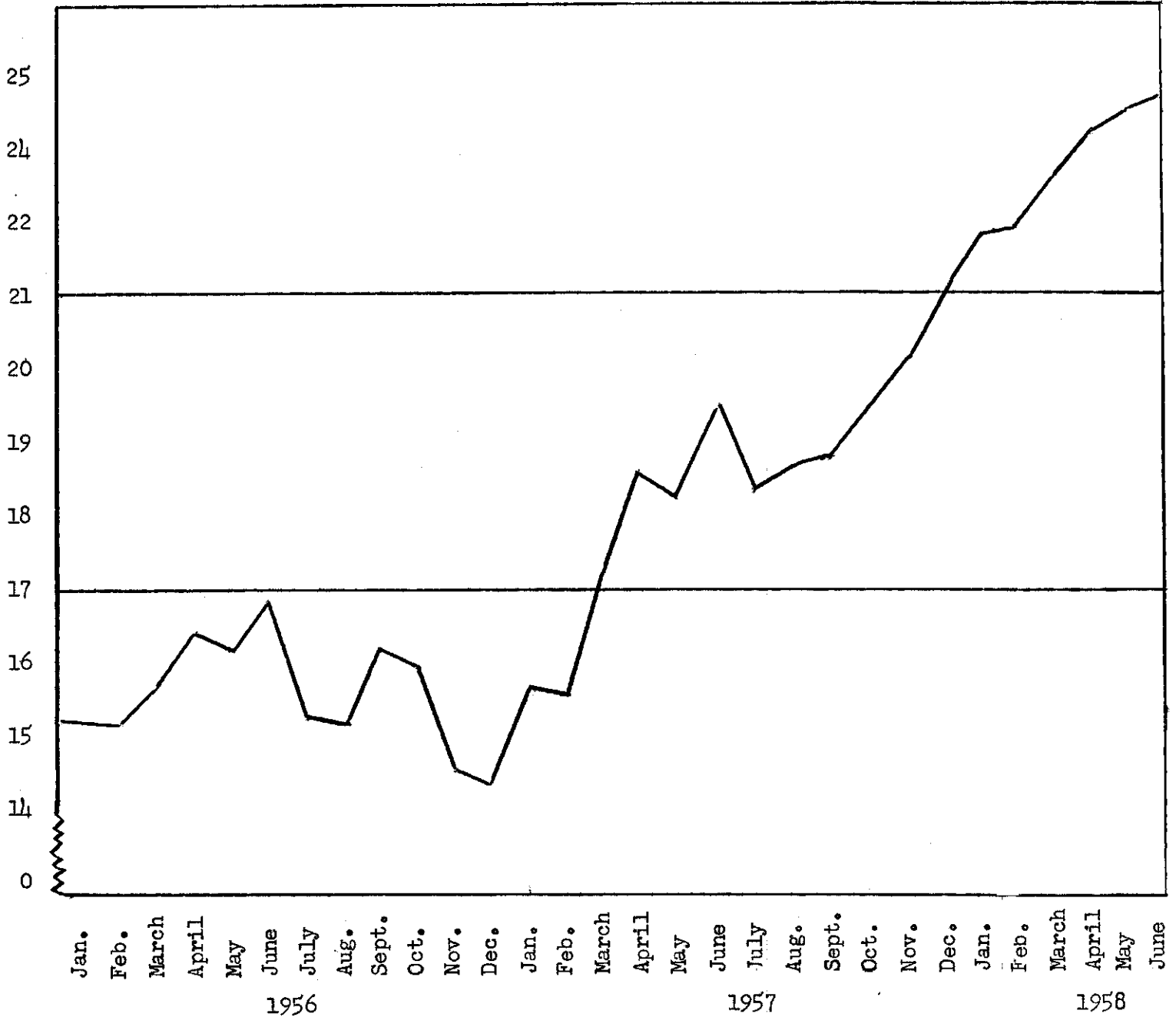


Figure 1. Average Monthly Prices per 100 Pounds of Stockers and Feeders, All Weights, South St. Paul, January, 1956 - June, 1958. (Compiled from Livestock Market News Statistics and Related Data, USDA, PMA, 1956-1958.)

The average purchase and sales prices per 100 pounds of feeder cattle for the years 1953-1957 by type of feeding program are shown in Figure 2.

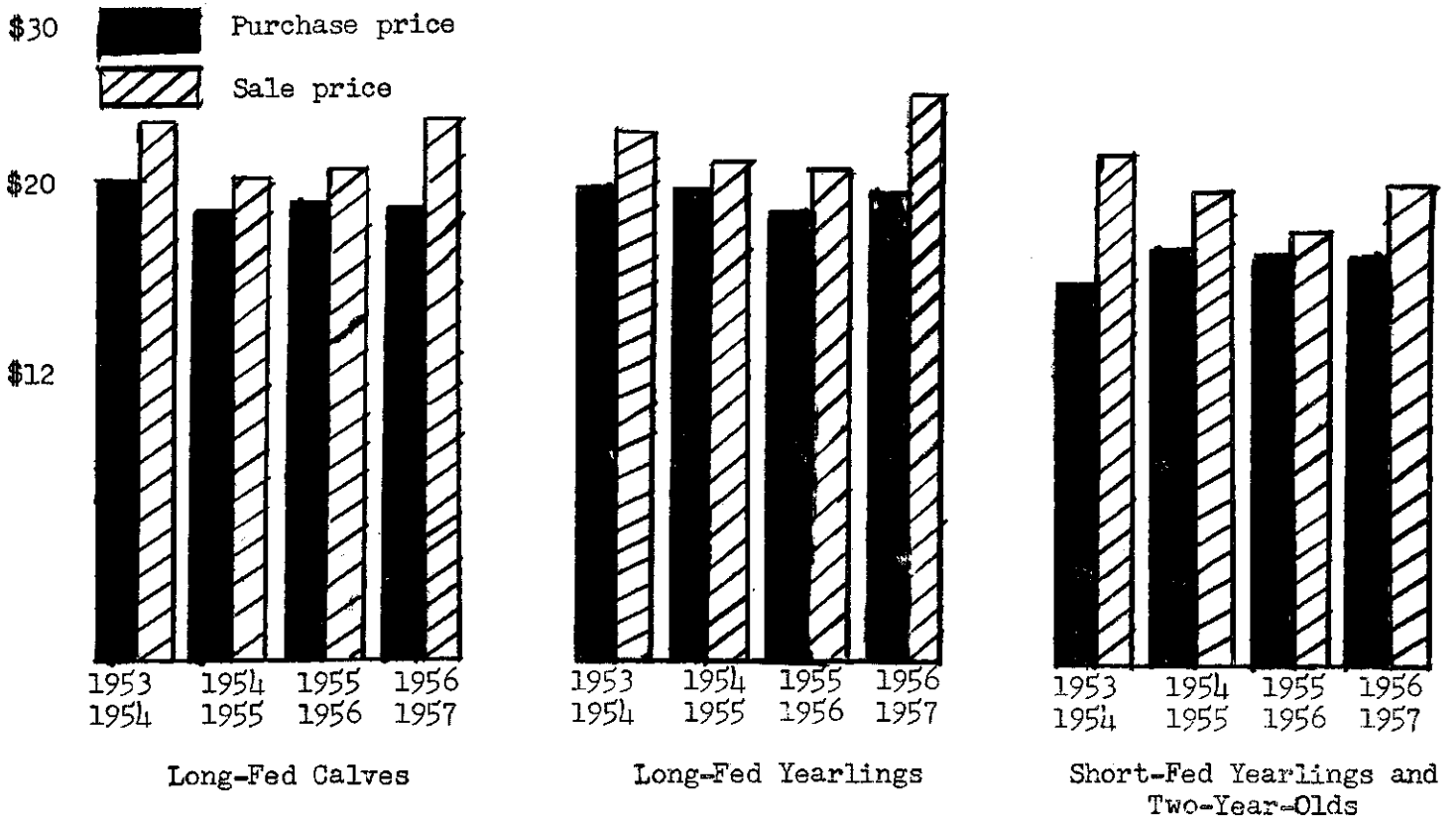


Figure 2. Average Purchase and Sale Prices per 100 Pounds of Feeder Cattle by Feeding Program on Farms Studied, 1953-1957.

NUMBERS AND WEIGHTS OF CATTLE FED

The individual lots of cattle for the 1956-57 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.

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 22 of the 79 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

	26 lots			14 lots			26 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	58	240	16	66	118	17	53	103	25
Av. purchase weight	402	500	231	614	734	502	684	893	526
Av. sale weight	931	1111	635	1125	1286	922	1054	1266	754
Av. gain in wt. per hd.	529	798	297	511	680	399	370	510	280
Av. daily gain per hd.	1.7	2.4	1.1	1.7	2.1	1.4	2.	2.7	1.5

FEEDING AND LABOR DATA

The number and weights of cattle fed, the quantities of feed used and the costs and returns from feeding operations for the 1956-57 feeding season are shown on the following pages. In Table 3 is the report for 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 these data for the last four years is given in Table 6.

The information on costs and returns presented in Tables 3, 4, and 5 includes the prices paid and received for cattle, the cost and returns per lot and cost and returns per 100 pounds gain in weight. The return over feed costs per 100 pounds gain in weight (line 29) is used in this study as a measure of the relative profitability of individual lots of cattle and of the different groups compared.

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.

Table 3. Long-Fed Calves, 1956-57

	Average of 39 lots	Individual lot numbers			
		1	2	3	4
<u>Number and weight of cattle fed:</u>					
1. Number of head bought	58	42	65	30	40
2. Days on farm	313	246	330	234	277
3. Days on pasture	28	-	-	-	-
4. Percent death loss	.80	-	-	-	-
5. Average purchase weight, lbs.	402	431	479	493	340
6. Average sales weight, lbs.	931	862	1063	1085	863
7. Gain per head, lbs.	529	431	584	592	523
8. Gain per head per day, lbs.	1.70	1.75	1.77	2.42	1.89
9. Pounds of beef produced	29588	18095	38025	17760	20920
<u>Feed used per 100 lbs. gain:</u>					
10. Corn, lbs.	470	394	197	420	431
11. Small grain, lbs.	22	-	4	17	12
12. Commercial feed, lbs.	45	26	29	1	48
13. Total concentrates, lbs.	537	420	230	438	491
14. Legume hay, lbs.	263	180	333	417	285
15. Other hay, lbs.	48	4	-	39	90
16. Total dry roughage, lbs.	311	184	333	456	375
17. Corn silage, lbs.	118	591	195	-	29
18. Grass or oat silage, lbs.	271	-	226	-	239
19. Total silage, lbs.	389	591	421	-	268
20. Pasture days	6	-	-	-	-
<u>Prices of Cattle:</u>					
21. Price paid per 100 lbs.	\$18.81	\$16.97	\$15.06	\$19.71	\$16.55
22. Price received per 100 lbs.	22.48	23.00	21.11	23.51	23.34
23. Price spread per 100 lbs.	3.67	6.03	6.05	3.80	6.79
<u>Cost and returns per lot:</u>					
24. Total value produced	\$7549.09	\$5254.14	\$9913.83	\$4738.53	\$5807.69
25. Total feed cost	4749.80	2313.08	4152.73	2098.03	2997.68
26. Total return over feed cost	\$2799.29	\$2941.06	\$5761.10	\$2640.50	\$2810.01
<u>Cost and returns per 100 lbs. gain:</u>					
27. Value produced	\$25.52	\$29.04	\$26.07	\$26.68	\$27.76
28. Feed costs	15.82	12.78	10.91	11.81	14.33
29. RETURN OVER FEED COST	\$ 9.70	\$16.26	\$15.16	\$14.87	\$13.43
30. Return over feed cost from price spread	\$ 3.04	\$ 6.04	\$ 4.96	\$ 3.70	\$ 4.42
31. Return over feed cost from feeding	\$ 6.66	\$10.22	\$10.20	\$11.17	\$ 9.01
32. Return per \$100 feed cost	\$166	\$227	\$239	\$226	\$194
33. Hours of labor per 100 lbs. gain: 1.56*		1.44	**	**	2.28

*Avg. of 67 lots in labor study (59 head per lot)

**Labor records not available

Table 3. Long-Fed Calves, 1956-57 (continued)

	Individual lot numbers							
	5	6	7	8	9	10	11	12
1.	30	47	50	47	49	34	66	80
2.	364	388	371	303	254	385	341	284
3.	-	112	29	-	-	-	70	-
4.	-	-	4.00	-	-	-	-	1.30
5.	359	378	375	403	459	231	416	388
6.	1065	1111	940	861	892	638	1031	880
7.	706	733	565	458	433	407	615	492
8.	1.94	1.89	1.52	1.51	1.70	1.10	1.80	1.73
9.	21170	29780	28265	21515	21185	13850	40585	38420
10.	490	636	339	452	416	483	145	392
11.	8	5	7	5	-	-	27	43
12.	16	16	19	26	36	84	59	62
13.	<u>514</u>	<u>657</u>	<u>365</u>	<u>483</u>	<u>452</u>	<u>567</u>	<u>231</u>	<u>497</u>
14.	137	161	205	316	253	318	330	302
15.	42	-	-	49	-	-	-	16
16.	<u>179</u>	<u>161</u>	<u>205</u>	<u>365</u>	<u>253</u>	<u>318</u>	<u>330</u>	<u>318</u>
17.	118	-	-	-	736	-	-	916
18.	-	326	375	516	-	1011	369	-
19.	<u>118</u>	<u>326</u>	<u>375</u>	<u>516</u>	<u>736</u>	<u>1011</u>	<u>369</u>	<u>916</u>
20.	-	18	5	-	-	-	11	-
21.	\$19.88	\$19.22	\$20.00	\$17.25	\$20.32	\$20.95	\$19.59	\$17.50
22.	23.27	24.03	21.85	22.27	22.82	27.66	20.99	22.98
23.	3.39	4.81	1.85	5.02	2.50	6.71	1.40	5.48
24.	\$5291.78	\$8013.72	\$6521.14	\$5740.80	\$5398.47	\$4358.90	\$8903.51	\$10529.64
25.	2572.15	4302.15	3059.93	3174.18	2904.10	2751.74	4225.10	6142.92
26.	<u>\$2719.53</u>	<u>\$3711.57</u>	<u>\$3461.21</u>	<u>\$2566.62</u>	<u>\$2494.37</u>	<u>\$1607.16</u>	<u>\$4678.41</u>	<u>\$4386.72</u>
27.	\$24.96	\$26.91	\$23.07	\$26.68	\$25.48	\$31.47	\$21.94	\$27.40
28.	12.13	14.45	10.82	14.75	13.71	19.87	10.41	15.99
29.	<u>\$12.83</u>	<u>\$12.46</u>	<u>\$12.25</u>	<u>\$11.93</u>	<u>\$11.77</u>	<u>\$11.60</u>	<u>\$11.53</u>	<u>\$11.41</u>
30.	\$ 1.69	\$ 2.88	\$ 1.22	\$ 4.41	\$ 2.66	\$ 3.81	\$.95	\$ 4.42
31.	\$11.14	\$ 9.58	\$11.03	\$ 7.52	\$ 9.11	\$ 7.79	\$10.58	\$ 6.99
32.	\$206	\$186	\$213	\$181	\$186	\$158	\$211	\$171
33.	**	1.94	1.01	1.55	**	**	1.25	**

**Labor records not available

Table 3. Long-Fed Calves, 1956-57 (continued)

	Individual lot numbers				
	13	14	15	16	17
<u>Number and weight of cattle fed:</u>					
1. Number of head bought	105	50	34	110	41
2. Days on farm	310	269	281	325	222
3. Days on pasture	120	-	62	-	-
4. Percent death loss	.95	-	2.94	.91	4.88
5. Avg. purchase weight, lbs.	400	399	454	410	408
6. Average sales weight, lbs.	874	860	830	1009	824
7. Gain per head, lbs.	474	461	376	599	416
8. Gain per head per day, lbs.	1.53	1.71	1.33	1.84	1.87
9. Pounds of beef produced	49780	23085	12785	64382	17085
<u>Feed used per 100 lbs. gain:</u>					
10. Corn, lbs.	451	391	675	565	580
11. Small grain, lbs.	-	13	-	21	-
12. Commercial feed, lbs.	25	23	46	27	52
13. Total concentrates, lbs.	<u>476</u>	<u>427</u>	<u>721</u>	<u>613</u>	<u>632</u>
14. Legume hay, lbs.	366	311	125	317	159
15. Other hay and stover, lbs.	-	9	78	-	52
16. Total dry roughage, lbs.	<u>366</u>	<u>320</u>	<u>203</u>	<u>317</u>	<u>211</u>
17. Corn silage, lbs.	-	-	-	-	-
18. Grass or oat silage, lbs.	-	412	-	-	562
19. Total silage, lbs.	-	<u>412</u>	-	-	<u>562</u>
20. Pasture days	25	-	17	-	-
<u>Prices of cattle:</u>					
21. Price paid per 100 lbs.	\$15.65	\$17.50	\$16.00	\$18.51	\$16.75
22. Price received per 100 lbs.	21.43	21.32	22.47	23.19	22.32
23. Price spread per 100 lbs.	5.78	3.82	6.47	4.68	5.57
<u>Cost and returns per lot:</u>					
24. Total value produced	\$13096.34	\$5683.34	\$3869.92	\$17049.96	\$4744.57
25. Total feed cost	7480.75	3129.21	2475.30	10103.63	2906.50
26. Total return over feed cost	<u>\$ 5615.59</u>	<u>\$2554.13</u>	<u>\$1394.62</u>	<u>\$ 6946.33</u>	<u>\$1838.07</u>
<u>Cost and returns per 100 lbs. gain:</u>					
27. Value produced	\$26.30	\$24.62	\$30.27	\$26.48	\$27.77
28. Feed costs	15.02 ^c	13.55 ^c	19.36 ^c	15.69	17.01 ^c
29. RETURN OVER FEED COSTS	<u>\$11.28</u>	<u>\$11.07</u>	<u>\$10.91</u>	<u>\$10.79</u>	<u>\$10.76</u>
30. Return over feed cost from price spread	\$ 4.87	\$ 3.30	\$ 7.80	\$ 3.29	\$ 5.45
31. Return over feed cost from feeding	\$ 6.41	\$ 7.77	\$ 3.11	\$ 7.50	\$ 5.31
32. Return per \$100 feed cost	\$175	\$182	\$156	\$169	\$163
33. Hours of labor per 100 lbs.gain	**	2.51	**	.72	**

**Labor records not available

Table 3. Long-Fed Calves, 1956-57 (continued)

	Individual lot numbers							
	18	19	20	21	22	23	24	25
1.	49	33	45	39	65	152	30	40
2.	262	446	301	306	348	203	346	306
3.	-	89	-	-	60	99	-	103
4.	6.12	-	-	-	1.50	1.30	-	2.50
5.	350	309	474	457	411	448	352	423
6.	763	884	1028	973	1087	745	1034	1107
7.	413	575	554	516	676	297	702	684
8.	1.58	1.28	1.84	1.70	1.94	1.46	2.03	2.23
9.	20205	18980	24940	20125	43963	43725	20465	27365
10.	568	334	450	622	497	416	468	523
11.	24	27	6	14	-	47	17	9
12.	16	21	60	25	44	20	32	36
13.	<u>608</u>	<u>382</u>	<u>516</u>	<u>661</u>	<u>541</u>	<u>483</u>	<u>517</u>	<u>568</u>
14.	485	279	148	186	-	118	151	168
15.	-	5	104	40	125	23	39	-
16.	<u>485</u>	<u>284</u>	<u>252</u>	<u>226</u>	<u>125</u>	<u>141</u>	<u>190</u>	<u>168</u>
17.	-	-	-	566	-	114	-	-
18.	-	-	32	20	-	961	-	325
19.	-	-	<u>32</u>	<u>586</u>	-	<u>1075</u>	-	<u>325</u>
20.	-	15	-	-	9	34	-	16
21.	\$17.02	\$19.00	\$19.95	\$18.00	\$21.72	\$16.84	\$21.75	\$21.50
22.	22.89	21.25	22.07	24.00	23.94	20.91	22.30	23.48
23.	5.87	2.25	2.12	6.00	2.22	4.07	.55	1.98
24.	\$5633.81	\$4264.32	\$5952.97	\$5890.20	\$11115.92	\$11919.39	\$4622.85	\$6760.40
25.	<u>3478.85</u>	<u>2244.01</u>	<u>3329.95</u>	<u>3798.12</u>	<u>6709.01</u>	<u>7733.67</u>	<u>2738.66</u>	<u>4387.12</u>
26.	<u>\$2154.96</u>	<u>\$2020.31</u>	<u>\$2623.02</u>	<u>\$2092.08</u>	<u>\$4406.91</u>	<u>\$4185.72</u>	<u>\$1884.19</u>	<u>\$2373.28</u>
27.	\$27.88	\$22.47	\$23.87	\$29.27	\$25.28	\$27.26	\$22.59	\$24.70
28.	<u>17.21</u>	<u>11.82</u>	<u>13.35</u>	<u>18.87</u>	<u>15.26</u>	<u>17.68</u>	<u>13.38</u>	<u>16.03</u>
29.	<u>\$10.67</u>	<u>\$10.65</u>	<u>\$10.52</u>	<u>\$10.40</u>	<u>\$10.02</u>	<u>\$ 9.58</u>	<u>\$ 9.21</u>	<u>\$ 8.67</u>
30.	\$4.99	\$1.22	\$1.80	\$5.27	\$1.34	\$6.36	\$.29	\$1.22
31.	\$5.68	\$9.43	\$8.72	\$5.13	\$8.68	\$3.22	\$8.92	\$7.45
32.	\$162	\$190	\$179	\$155	\$166	\$154	\$169	\$154
33.	**	**	**	**	**	1.45	**	1.61

**Labor records not available

Table 3. Long-Fed Calves, 1956-57 (continued)

	Individual lot numbers				
	26	27	28	29	30
<u>Number and weight of cattle fed:</u>					
1. Number of head bought	20	16	24	35	66
2. Days on farm	247	461	262	394	345
3. Days on pasture	-	64	-	-	26
4. Percent death loss	-	-	-	-	-
5. Avg. purchase weight, lbs.	500	300	444	322	427
6. Average sales weight, lbs.	935	1098	995	865	992
7. Gain per head, lbs.	435	798	551	543	565
8. Gain per head per day, lbs.	1.76	1.73	2.10	1.38	1.64
9. Pounds of beef produced	8690	12760	13204	19020	37345
<u>Feed used per 100 lbs. gain:</u>					
10. Corn, lbs.	400	224	471	471	451
11. Small grain, lbs.	114	87	74	59	20
12. Commercial feed, lbs.	83	34	55	32	62
13. Total concentrates, lbs.	<u>597</u>	<u>345</u>	<u>600</u>	<u>562</u>	<u>533</u>
14. Legume hay, lbs.	-	251	204	368	326
15. Other hay and stover, lbs.	817	196	-	16	-
16. Total dry roughage, lbs.	<u>817</u>	<u>447</u>	<u>204</u>	<u>384</u>	<u>326</u>
17. Corn silage, lbs.	-	-	651	-	535
18. Grass or oat silage, lbs.	-	-	-	473	-
19. Total silage, lbs.	-	-	<u>651</u>	<u>473</u>	<u>535</u>
20. Pasture days	-	8	-	-	5
<u>Prices of cattle:</u>					
21. Price paid per 100 lbs.	\$19.60	\$16.67	\$20.65	\$19.22	\$20.44
22. Price received per 100 lbs.	22.80	19.25	22.88	22.60	22.84
23. Price spread per 100 lbs.	3.20	2.58	2.23	3.38	2.40
<u>Cost and returns per lot:</u>					
24. Total value produced	\$2303.46	\$2580.95	\$3259.81	\$4678.23	\$9206.15
25. Total feed cost	<u>1585.43</u>	<u>1541.78</u>	<u>2207.24</u>	<u>3238.97</u>	<u>6510.32</u>
26. Total return over feed cost	\$ 718.03	\$1039.17	\$1052.57	\$1439.26	\$2695.83
<u>Cost and returns per 100 lbs. gain:</u>					
27. Value produced	\$26.50	\$20.23	\$24.69	\$24.59	\$24.65
28. Feed costs	<u>18.24</u>	<u>12.08</u>	<u>16.71</u>	<u>17.02</u>	<u>17.43</u>
29. RETURN OVER FEED COSTS	\$ 8.26	\$ 8.15	\$ 7.98	\$ 7.57	\$ 7.22
30. Return over feed cost from price spread	\$ 3.70	\$.98	\$ 1.81	\$ 1.99	\$ 1.81
31. Return over feed cost from feeding	\$ 4.56	\$ 7.17	\$ 6.17	\$ 5.58	\$ 5.41
32. Return per \$100 feed cost	\$145	\$167	\$148	\$144	\$141
33. Hours of labor per 100 lbs. gain	2.62	**	1.58	2.62	1.14

**Labor records not available

Table 3. Long-Fed Calves, 1956-57 (continued)

	Individual lot numbers								
	31	32	33	34	35	36	37	38	39
1.	73	240	109	55	32	50	81	33	50
2.	329	346	323	194	315	349	297	306	334
3.	-	-	133	-	-	74	30	35	-
4.	-	2.08	.91	-	-	-	1.25	-	2.00
5.	443	389	478	466	376	470	324	325	382
6.	1087	937	1023	886	871	939	747	805	811
7.	644	548	545	420	495	469	423	480	429
8.	1.95	1.58	1.69	2.16	1.57	1.31	1.42	1.30	1.30
9.	47070	126790	59455	23090	15845	23470	34230	15860	20658
10.	613	613	400	667	538	472	720	400	548
11.	17	6	-	-	53	45	17	40	14
12.	320	116	47	40	21	27	48	27	25
13.	<u>950</u>	<u>735</u>	<u>447</u>	<u>707</u>	<u>612</u>	<u>544</u>	<u>785</u>	<u>467</u>	<u>587</u>
14.	368	184	124	251	544	368	409	454	368
15.	-	-	17	-	-	118	6	-	-
16.	<u>368</u>	<u>184</u>	<u>141</u>	<u>251</u>	<u>544</u>	<u>486</u>	<u>415</u>	<u>454</u>	<u>368</u>
17.	-	73	-	87	-	-	-	-	-
18.	<u>563</u>	<u>526</u>	<u>161</u>	<u>736</u>	-	<u>383</u>	-	<u>471</u>	<u>1883</u>
19.	<u>563</u>	<u>599</u>	<u>161</u>	<u>823</u>	-	<u>383</u>	-	<u>471</u>	<u>1883</u>
20.	-	-	24	-	-	16	7	7	-
21.	\$19.26	\$17.81	\$19.30	\$18.71	\$18.77	\$20.00	\$19.44	\$21.42	\$19.24
22.	23.54	22.97	20.22	22.48	21.13	21.88	22.93	21.31	21.61
23.	4.28	5.16	.92	3.77	2.36	1.88	3.49	-.11	2.37
24.	\$12462.62	\$33933.40	\$12505.34	\$6160.20	\$3632.49	\$5580.70	\$8762.94	\$3356.79	\$4915.35
25.	9092.36	25090.52	8814.55	4726.93	2675.43	4164.21	7116.50	2808.74	4460.70
26.	<u>\$ 3370.26</u>	<u>\$ 8842.88</u>	<u>\$ 3690.79</u>	<u>\$1433.27</u>	<u>\$ 957.06</u>	<u>\$1416.49</u>	<u>\$1646.44</u>	<u>\$ 548.05</u>	<u>\$ 454.65</u>
27.	\$26.48	\$26.76	\$21.03	\$26.68	\$22.93	\$23.78	\$25.60	\$21.17	\$23.79
28.	19.32	19.79	14.82	20.47*	16.88*	17.75	20.79*	17.71*	21.59*
29.	<u>\$ 7.16</u>	<u>\$ 6.97</u>	<u>\$ 6.21</u>	<u>\$ 6.21</u>	<u>\$ 6.05</u>	<u>\$ 6.03</u>	<u>\$ 4.81</u>	<u>\$ 3.46</u>	<u>\$ 2.20</u>
30.	\$ 2.94	\$ 3.79	\$.81	\$ 4.20	\$ 1.80	\$ 1.90	\$ 2.67	\$ -.14	\$ 2.18
31.	\$ 4.22	\$ 3.18	\$ 5.40	\$ 2.01	\$ 4.25	\$ 4.13	\$ 2.14	\$ 3.60	\$.02
32.	\$137	\$135	\$142	\$130	\$136	\$135	\$123	\$120	\$110
33.	**	1.33	**	**	**	1.67	**	2.04	2.21

**Labor records not available

Table 4. Long-Fed Yearlings, 1956-57

	Average of 14 lots	Individual lot numbers			
		40	41	42	43
Number and weight of cattle fed:					
1. Number of head bought	66	97	50	88	50
2. Days on farm	303	277	374	245	251
3. Days on pasture	25	25	39	59	-
4. Percent death loss	1.13	6.18	-	-	-
5. Avg. purchase weight, lbs.	614	660	574	502	664
6. Avg. sales weight, lbs.	1125	1080	1173	922	1151
7. Gain per head, lbs.	511	420	599	420	487
8. Gain per head per day, lbs.	1.70	1.52	1.60	1.72	1.94
9. Pounds of beef produced	33340	40765	29935	36956	24365
Feed used per 100 lbs. gain:					
10. Corn, lbs.	511	417	420	362	326
11. Small grain, lbs.	6	-	-	10	-
12. Commercial feed, lbs.	45	59	20	58	8
13. Total concentrates, lbs.	<u>562</u>	<u>476</u>	<u>440</u>	<u>430</u>	<u>334</u>
14. Legume hay, lbs.	263	304	160	211	238
15. Other hay, lbs.	23	37	-	-	82
16. Total dry roughage, lbs.	<u>286</u>	<u>341</u>	<u>160</u>	<u>211</u>	<u>320</u>
17. Corn silage, lbs.	553	1276	394	379	821
18. Grass silage, lbs.	282	-	655	216	-
19. Total silage, lbs.	<u>835</u>	<u>1276</u>	<u>1049</u>	<u>595</u>	<u>821</u>
20. Pasture days	5	6	7	14	-
Prices of cattle:					
21. Price paid per 100 lbs.	\$19.11	\$17.60	\$19.75	\$17.04	\$19.50
22. Price received per 100 lbs.	22.48	24.07	25.24	22.93	22.85
23. Price spread per 100 lbs.	3.37	6.47	5.49	5.89	3.35
Cost and returns per lot:					
24. Total value produced	\$9116.81	\$13946.28	\$9133.60	\$11080.46	\$6677.82
25. Total feed cost	6085.35	7535.26	4433.32	5370.28	2937.73
26. Total return over feed cost	<u>\$3031.44</u>	<u>\$6411.02</u>	<u>\$4700.28</u>	<u>\$5710.18</u>	<u>\$3740.09</u>
Cost and returns per 100 lbs. gain:					
27. Value produced	\$26.51	\$34.21	\$30.51	\$29.98	\$27.40
28. Feed costs	19.05	18.48	14.81	14.51	12.05
29. RETURN OVER FEED COSTS	<u>\$ 7.46</u>	<u>\$15.73</u>	<u>\$15.70</u>	<u>\$15.47</u>	<u>\$15.35</u>
30. Return over feed cost from price spread	\$ 4.03	\$10.14	\$ 5.27	\$ 7.05	\$ 4.55
31. Return over feed cost from feeding	\$ 3.43	\$ 5.59	\$10.43	\$ 8.42	\$10.80
32. Return per \$100 feed cost	\$149	\$185	\$206	\$206	\$227
33. Hours of labor per 100 lbs. gain	1.56*	**	.81	**	**

**Labor records not available

*Avg. of 67 lots in labor study (59 head per lot)

Table 4. Long-Fed Yearlings, 1956-57 (continued)

	Individual lot numbers									
	44	45	46	47	48	49	50	51	52	53
1.	118	72	133	45	25	29	40	105	17	53
2.	294	452	377	263	316	325	281	245	246	295
3.	-	90	46	59	-	36	-	-	-	-
4.	-	-	-	-	4.00	1.69	-	-	5.88	-
5.	641	529	714	734	543	529	559	658	607	678
6.	1172	1209	1291	1286	1103	1079	1068	1057	1054	1109
7.	531	680	577	552	560	550	509	399	447	431
8.	1.81	1.50	1.53	2.10	1.77	1.69	1.81	1.60	1.82	1.46
9.	62730	49045	76735	24820	13992	15965	20345	41840	6550	22720
10.	625	472	665	686	520	536	353	601	598	573
11.	6	-	-	-	6	28	-	37	-	-
12.	25	9	35	16	68	43	55	37	108	83
13.	<u>656</u>	<u>481</u>	<u>700</u>	<u>702</u>	<u>594</u>	<u>607</u>	<u>408</u>	<u>675</u>	<u>706</u>	<u>656</u>
14.	217	186	179	161	457	-	236	779	290	268
15.	-	-	52	-	21	125	-	-	-	-
16.	<u>217</u>	<u>186</u>	<u>231</u>	<u>161</u>	<u>478</u>	<u>125</u>	<u>236</u>	<u>779</u>	<u>290</u>	<u>268</u>
17.	-	265	34	548	-	219	590	311	610	2289
18.	-	367	280	-	-	69	590	549	1222	-
19.	-	<u>632</u>	<u>314</u>	<u>548</u>	-	<u>288</u>	<u>1180</u>	<u>860</u>	<u>1832</u>	<u>2289</u>
20.	-	13	8	11	-	7	-	-	-	-
21.	\$19.91	\$19.00	\$20.05	\$20.14	\$20.50	\$14.93	\$18.93	\$18.81	\$17.69	\$23.64
22.	24.20	22.52	22.74	22.76	22.24	18.60	23.97	21.62	19.34	21.58
23.	4.29	3.52	2.69	2.62	1.74	3.67	5.04	2.81	1.65	-2.06
24.	\$18428.79	\$12388.28	\$19991.18	\$6515.12	\$3348.51	\$3533.24	\$6002.63	\$10988.84	\$1437.71	\$4162.87
25.	10870.35	6935.76	13699.81	4734.33	2578.65	2667.26	5592.23	10640.23	1719.42	5480.33
26.	<u>\$7558.44</u>	<u>\$5452.52</u>	<u>\$6291.37</u>	<u>\$1780.79</u>	<u>\$769.86</u>	<u>\$865.98</u>	<u>\$410.40</u>	<u>\$348.61</u>	<u>\$-281.71</u>	<u>\$-1317.46</u>
27.	\$29.38	\$25.26	\$26.05	\$26.24	\$23.93	\$22.13	\$29.50	\$26.26	\$21.95	\$18.32
28.	17.33	14.14	17.85	19.07	18.43	16.71	27.49	25.43	26.25	24.12
29.	<u>\$12.05</u>	<u>\$11.12</u>	<u>\$ 8.20</u>	<u>\$ 7.17</u>	<u>\$ 5.50</u>	<u>\$ 5.42</u>	<u>\$ 2.01</u>	<u>\$.83</u>	<u>\$-4.30</u>	<u>\$-5.80</u>
30.	\$5.18	\$2.74	\$3.31	\$3.48	\$1.69	\$3.53	\$5.53	\$4.64	\$2.61	\$-3.26
31.	\$6.87	\$8.38	\$4.89	\$3.69	\$3.81	\$1.89	\$-3.52	\$-3.81	\$-6.91	\$-2.54
32.	\$170	\$179	\$146	\$138	\$130	\$132	\$107	\$103	\$84	\$77
33.	**	.64	1.78	**	**	**	1.41	.81	1.98	1.34

**Labor records not available

Table 5. Short-Fed Yearlings and Two-Year-Olds, 1956-57

	Average of 26 lots	Individual lot numbers				
		54	55	56	57	58
No. and weight of cattle fed:						
1. Number of head bought	53	60	38	36	38	52
2. Days on farm	184	147	156	201	180	175
3. Days on pasture	15	-	-	-	-	-
4. Percent death loss	.30	-	-	-	2.63	-
5. Avg. purchase weight, lbs.	684	837	791	558	737	688
6. Avg. sales weight, lbs.	1054	1117	1105	900	1111	1035
7. Gain per head, lbs.	370	280	314	342	374	347
8. Gain per head per day, lbs.	2.03	1.90	2.01	1.70	2.07	1.98
9. Pounds of beef produced	19592	16795	11930	12305	14290	18035
Feed used per 100 lbs. gain:						
10. Corn, lbs.	600	558	332	482	597	459
11. Small grain, lbs.	9	40	-	2	3	-
12. Commercial feed, lbs.	59	60	42	43	85	50
13. Total concentrates, lbs.	<u>668</u>	<u>658</u>	<u>374</u>	<u>527</u>	<u>685</u>	<u>509</u>
14. Legume hay, lbs.	273	232	356	528	511	61
15. Other hay, lbs.	31	54	-	-	-	-
16. Total dry roughage, lbs.	<u>304</u>	<u>286</u>	<u>356</u>	<u>528</u>	<u>511</u>	<u>61</u>
17. Corn silage, lbs.	365	1309	1274	487	472	1331
18. Grass or oat silage, lbs.	<u>143</u>	-	-	-	-	-
19. Total silage, lbs.	<u>508</u>	<u>1309</u>	<u>1274</u>	<u>487</u>	<u>472</u>	<u>1331</u>
20. Pasture days	4	-	-	-	-	-
Prices of cattle:						
21. Price paid per 100 lbs.	\$17.06	\$15.00	\$10.96	\$15.23	\$15.42	\$16.47
22. Price received per 100 lbs.	20.35	19.74	16.91	22.28	21.83	20.53
23. Price spread per 100 lbs.	3.29	4.74	5.95	7.05	6.41	4.06
Cost and returns per lot:						
24. Total value produced	\$5161.02	\$5697.00	\$3805.99	\$4155.97	\$4910.09	\$5159.38
25. Total feed cost	3694.85	2278.76	1894.10	2218.45	3048.51	3054.00
26. Total return over feed costs	<u>\$1466.17</u>	<u>\$3418.24</u>	<u>\$1911.89</u>	<u>\$1937.52</u>	<u>\$1861.58</u>	<u>\$2105.38</u>
Cost and returns per 100 lbs. gain:						
27. Value produced	\$26.85	\$33.91	\$31.90	\$33.77	\$34.36	\$28.61
28. Feed costs	19.03	13.56	15.88	18.02	21.33	16.93
29. RETURN OVER FEED COSTS	<u>\$ 7.82</u>	<u>\$20.35</u>	<u>\$16.02</u>	<u>\$15.75</u>	<u>\$13.03</u>	<u>\$11.68</u>
30. Return over feed cost from price spread	\$6.50	\$14.17	\$16.91	\$12.05	\$12.53	\$8.08
31. Return over feed cost from feeding	\$1.32	\$6.18	\$-.89	\$3.70	\$.50	\$3.60
32. Return per \$100 feed cost	\$141	\$250	\$201	\$187	\$161	\$169
33. Hours of labor per 100 lbs.gain	1.56*	1.76	**	**	1.64	1.07

**Labor records not available

*Avg. of 67 lots in labor study (59 head per lot)

Table 5. Short-Fed Yearlings and Two-Year-Olds, 1956-57 (continued)

	Individual lot numbers								
	59	60	61	62	63	64	65	66	67
1.	55	45	35	40	50	52	85	59	25
2.	194	225	136	238	234	187	219	181	79
3.	-	-	-	-	107	-	-	37	-
4.	-	-	-	-	-	-	-	-	-
5.	888	797	655	609	598	756	549	610	563
6.	1170	1234	934	1076	1087	1266	1021	978	754
7.	282	437	279	467	489	510	472	368	191
8.	1.45	1.94	2.05	1.96	2.09	2.73	2.16	2.03	2.40
9.	15480	19690	9765	18672	24402	26490	40147	20735	3275
10.	651	671	465	526	335	559	565	321	886
11.	-	-	-	-	-	-	4	-	-
12.	61	51	55	30	48	25	35	51	137
13.	<u>712</u>	<u>722</u>	<u>520</u>	<u>556</u>	<u>383</u>	<u>584</u>	<u>604</u>	<u>372</u>	<u>1023</u>
14.	181	421	-	375	164	189	251	207	183
15.	-	-	241	21	5	-	180	-	-
16.	<u>181</u>	<u>421</u>	<u>241</u>	<u>396</u>	<u>169</u>	<u>189</u>	<u>431</u>	<u>207</u>	<u>183</u>
17.	-	-	1024	-	299	438	-	294	-
18.	-	-	-	-	-	-	-	752	-
19.	<u>-</u>	<u>-</u>	<u>1024</u>	<u>-</u>	<u>299</u>	<u>438</u>	<u>-</u>	<u>1046</u>	<u>-</u>
20.	-	-	-	-	22	-	-	11	-
21.	\$17.65	\$18.76	\$12.81	\$19.25	\$16.96	\$19.25	\$19.01	\$19.29	\$18.64
22.	20.28	23.15	17.14	22.14	20.00	22.08	21.50	21.07	21.24
23.	2.63	4.39	4.33	2.89	3.04	2.83	2.49	1.78	2.60
24.	\$4431.30	\$6133.10	\$2704.14	\$4836.75	\$5789.37	\$6960.14	\$9801.01	\$5007.72	\$1062.15
25.	2624.27	3873.89	1634.22	2904.90	3276.05	4252.07	5897.87	3118.38	800.76
26.	<u>\$1807.03</u>	<u>\$2259.21</u>	<u>\$1069.92</u>	<u>\$1931.85</u>	<u>\$2513.32</u>	<u>\$2708.07</u>	<u>\$3903.14</u>	<u>\$1889.34</u>	<u>\$ 261.39</u>
27.	\$28.63	\$31.13	\$27.68	\$25.90	\$23.72	\$26.27	\$24.41	\$24.15	\$32.43
28.	16.95	19.66	16.73	15.56	13.43	16.05	14.69	15.03	24.45
29.	<u>\$11.68</u>	<u>\$11.47</u>	<u>\$10.95</u>	<u>\$10.34</u>	<u>\$10.29</u>	<u>\$10.22</u>	<u>\$ 9.72</u>	<u>\$ 9.12</u>	<u>\$ 7.98</u>
30.	\$8.35	\$7.98	\$10.54	\$3.76	\$3.72	\$4.19	\$2.91	\$3.08	\$11.19
31.	\$3.33	\$3.49	\$.41	\$6.58	\$6.57	\$6.03	\$6.81	\$6.04	\$-3.21
32.	\$169	\$158	\$165	\$167	\$177	\$164	\$166	\$161	\$133
33.	1.85	**	**	1.29	1.13	.93	**	**	**

**Labor records not available

Table 5. Short-Fed Yearlings and Two-Year-Olds, 1956-57 (continued)

	Individual lot numbers					
	68	69	70	71	72	73
<u>No. and weight of cattle fed:</u>						
1. Number of head bought	38	103	57	57	28	114
2. Days on farm	170	218	226	173	174	202
3. Days on pasture	-	55	60	45	-	-
4. Percent death loss	-	-	1.80	1.75	-	.80
5. Avg. purchase weight, lbs.	760	768	518	591	611	526
6. Avg. sales weight, lbs.	1086	1233	868	923	1001	908
7. Gain per head, lbs.	326	465	350	332	390	382
8. Gain per head per day, lbs.	1.91	2.13	1.55	1.93	2.24	1.89
9. Pounds of beef produced	12395	47940	19062	18915	10920	43540
<u>Feed used per 100 lbs. gain:</u>						
10. Corn, lbs.	683	555	479	444	592	882
11. Small grain, lbs.	-	-	-	132	-	12
12. Commercial feed, lbs.	28	36	28	26	74	97
13. Total concentrates, lbs.	<u>711</u>	<u>591</u>	<u>507</u>	<u>602</u>	<u>666</u>	<u>991</u>
14. Legume hay, lbs.	-	476	367	211	92	198
15. Other hay, lbs.	226	-	-	-	-	52
16. Total dry roughage, lbs.	<u>226</u>	<u>476</u>	<u>367</u>	<u>211</u>	<u>92</u>	<u>250</u>
17. Corn silage, lbs.	-	-	440	930	-	92
18. Grass or oat silage, lbs.	876	-	-	-	-	137
19. Total silage, lbs.	<u>876</u>	-	<u>440</u>	<u>930</u>	-	<u>229</u>
20. Pasture days	-	12	18	14	-	-
<u>Prices of cattle:</u>						
21. Price paid per 100 lbs.	\$18.11	\$18.86	\$16.49	\$14.18	\$15.03	\$17.21
22. Price received per 100 lbs.	20.64	21.72	19.54	17.39	17.73	21.72
23. Price spread per 100 lbs.	2.53	2.86	3.05	3.21	2.70	4.51
<u>Cost and returns per lot:</u>						
24. Total value produced	\$3306.17	\$12681.74	\$4627.49	\$4372.93	\$2397.95	\$12158.73
25. Total feed cost	2326.89	9028.33	3333.82	3260.05	1826.80	10462.99
26. Total return over feed	<u>\$ 979.28</u>	<u>\$ 3653.41</u>	<u>\$1293.67</u>	<u>\$1112.88</u>	<u>\$ 571.15</u>	<u>\$ 1695.74</u>
<u>Cost and returns per 100 lbs. gain:</u>						
27. Value produced	\$26.67	\$26.45	\$24.28	\$23.12	\$21.96	\$27.92
28. Feed costs	18.77	18.83	17.49	17.23	16.72	24.04
29. RETURN OVER FEED COSTS	<u>\$ 7.90</u>	<u>\$ 7.62</u>	<u>\$ 6.79</u>	<u>\$ 5.89</u>	<u>\$ 5.24</u>	<u>\$ 3.88</u>
30. Return over feed cost from price spread	\$6.03	\$7.63	\$4.74	\$5.73	\$4.23	\$6.20
31. Return over feed cost from feeding	\$1.87	\$-.01	\$2.05	\$.16	\$1.01	\$-2.32
32. Return per \$100 feed cost	\$142	\$140	\$139	\$134	\$131	\$116
33. Hours of labor per 100 lbs. gain	**	**	**	**	**	1.20

**Labor records not available

Table 5. Short-Fed Yearlings and Two-Year-Olds, 1956-57 (continued)

	Individual lot numbers					
	74	75	76	77	78	79
1.	48	32	45	30	111	32
2.	231	164	151	181	175	156
3.	33	62	-	-	-	-
4.	-	-	-	-	.90	-
5.	704	893	700	745	540	784
6.	1154	1285	1041	1187	839	1084
7.	450	392	341	442	299	300
8.	1.94	2.39	2.27	2.44	1.70	1.92
9.	21620	12560	15305	13265	32275	9585
10.	757	892	711	952	727	526
11.	-	28	-	18	-	-
12.	83	-	293	45	27	31
13.	<u>840</u>	<u>920</u>	<u>1004</u>	<u>1015</u>	<u>754</u>	<u>557</u>
14.	301	318	568	271	532	104
15.	-	-	-	15	-	-
16.	<u>301</u>	<u>318</u>	<u>568</u>	<u>286</u>	<u>532</u>	<u>104</u>
17.	-	334	-	678	90	-
18.	717	-	621	-	619	-
19.	<u>717</u>	<u>334</u>	<u>621</u>	<u>678</u>	<u>709</u>	<u>-</u>
20.	7	16	-	-	-	-
21.	\$18.48	\$16.99	\$17.19	\$19.25	\$17.20	\$19.90
22.	21.88	20.55	20.22	22.49	17.38	17.94
23.	3.40	3.56	3.03	3.24	.18	-1.96
24.	\$5889.77	\$3599.37	\$4049.10	\$3705.38	\$5716.71	\$1226.99
25.	5083.59	3142.80	3529.53	3479.83	7597.95	2117.39
26.	<u>\$ 806.18</u>	<u>\$ 456.57</u>	<u>\$ 519.57</u>	<u>\$ 225.55</u>	<u>\$-1881.24</u>	<u>\$-890.40</u>
27.	\$27.24	\$28.66	\$26.45	\$27.93	\$17.71	\$12.80
28.	23.52	25.01	23.06	26.23	23.53	22.09
29.	<u>\$ 3.72</u>	<u>\$ 3.65</u>	<u>\$ 3.39</u>	<u>\$ 1.70</u>	<u>\$-5.82</u>	<u>\$-9.29</u>
30.	\$5.36	\$8.11	\$6.23	\$5.44	\$-.33	\$-5.14
31.	\$-1.64	\$-4.46	\$-2.84	\$-3.74	\$-5.49	\$-4.15
32.	\$116	\$115	\$115	\$106	\$75	\$58
33.	**	**	**	**	.88	**

**Labor records not available

Table 6. Comparison of High and Low Profit Lots, 1956-57

	Long-fed calves		Long-fed yearlings		Short-fed yearlings and two-year-olds	
	Average 22 lots for above avg. below avg. 39 lots return		Average 7 lots for above avg. below avg. 7 lots return		Average 15 lots for above avg. below av. 26 lots return	
	184	181	303	324	184	181
1. Days on farm	184	181	303	324	184	181
2. Percent death loss	.80	.96	1.13	.86	.30	.17
3. Av.purch.wt., lbs.	402	401	614	612	684	693
4. Av.sale wt., lbs.	931	928	1125	1143	1054	1058
5. Gain per head, lbs.	529	527	511	531	370	365
6. Gain per hd./day, lbs.	1.70	1.71	1.70	1.66	2.03	2.03
Feed used per 100 lbs. gain						
7. Grain, lbs.	492	462	517	472	609	542
8. Comml. feed, lbs.	45	34	45	30	59	53
9. Tot. conc., lbs.	537	496	562	502	668	595
10. Dry roughage equi., lbs.	540	285	286	461	473	482
11. Pasture days	5	5	5	7	4	2
Prices of cattle						
12. Price pd/100 lbs.	\$18.81	\$18.32	\$19.11	\$18.98	\$17.06	\$16.85
13. Price rec/100 lbs.	22.48	22.80	22.48	23.51	20.35	20.70
14. Price spread per 100 lbs.	3.67	4.48	3.37	4.53	3.29	3.85
Cost & returns per 100 lbs. gain						
15. Value produced	\$25.52	\$26.44	\$26.51	\$28.97	\$26.85	\$28.90
16. Feed costs	15.82	14.51	19.05	15.60	19.03	17.13
17. Ret. over feed costs	9.70	11.93	7.46	13.37	7.82	11.77
18. Ret. over feed cost from price spread	\$3.04	\$3.64	\$4.03	\$5.46	\$6.50	\$8.20
19. Ret. over feed cost from feeding	6.66	11.93	3.43	7.91	1.32	3.57
20. Ret. per \$100 feed cost	\$166	\$186	\$149	\$188	\$147	\$171

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 from 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. Line 33 presents hours required per 100 pounds gain in weight based upon labor records kept on a portion of the lots.

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

Tables 3, 4, and 5 indicate a wide variation among the different lots as to costs and returns. In Table 6 the average of the high return lots are compared with the low return lots. This table shows 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 over or under estimates 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

Table 7. A Four-Year Comparison of Feeder Cattle Costs and Returns

	Long-fed calves			
	1953-54	1954-55	1955-56	1956-57
	Avg. 20 lots	Avg. 29 lots	Avg. 37 lots	Avg. 39 lots
<u>No. and weight of cattle fed:</u>				
1. Number of head bought	57	64	57	58
2. Days on farm	340	324	340	313
3. Days on pasture	57	50	46	28
4. Percent death loss	1.9	1.1	1.2	.80
5. Avg. purchase weight, lbs.	413	410	407	402
6. Avg. sale weight, lbs.	956	947	962	931
7. Gain per head, lbs.	552	537	555	529
8. Gain per head per day, lbs.	1.6	1.7	1.6	1.7
9. Pounds beef produced per lot	30073	34212	31666	29588
<u>Feed used per 100 lbs. gain:</u>				
10. Corn, lbs.	480	515	436	470
11. Small grain, lbs.	22	20	34	22
12. Commercial feed, lbs.	43	47	41	45
13. Total concentrates, lbs.	545	582	511	537
14. Legume hay, lbs.	323	199	254	263
15. Other hay and stover, lbs.	23	23	26	48
16. Total dry roughage, lbs.	346	222	280	311
17. Silage, lbs.	410	395	415	389
18. Pasture days	11	9	8	6
<u>Prices of cattle:</u>				
19. Price paid per 100 lbs.	\$20.40	\$19.15	\$18.89	\$18.81
20. Price received per 100 lbs.	22.79	20.71	21.00	22.48
21. Price spread, per 100 lbs.	2.39	1.56	2.11	3.67
<u>Cost and returns per 100 lbs. gain:</u>				
22. Value produced	\$24.72	\$22.00	\$22.44	\$25.52
23. Feed costs	18.89	17.63	16.62	15.82
24. RETURN OVER FEED COSTS	\$ 5.83	\$ 4.37	\$ 5.82	\$ 9.70
25. Return over feed cost from price spread	\$ 1.93	\$ 1.30	\$ 1.44	\$ 3.04
26. Return over feed cost from feeding	3.90	3.07	4.38	6.66
27. Return per \$100 feed cost	\$131	\$127	\$139	\$166
28. Estimated costs other than feed & labor ¹	2.63	2.63	2.63	2.63
29. Estimated return to labor & management	3.20	1.74	3.19	7.07
<u>Returns to labor:</u>				
30. Estimated hours of labor	1.56	1.56	1.56	1.56
31. Estimated return per hour of labor	2.05	1.12	2.04	4.53
32. Estimated return per head to labor & mgmt.	17.66	9.34	17.70	37.40

1. Pond, G. A. and Hasbargen, P. R., "Planning Farms for Increased Profits," University of Minnesota Station Bulletin 445, December 1957.

Table 7. A Four-Year Comparison of Feeder Cattle Costs and Returns (continued)

	Long-fed yearlings				Short-fed yearlings and two-year-olds			
	1953-54	1954-55	1955-56	1956-57	1953-54	1954-55	1955-56	1956-57
	Avg. 16 lots	Avg. 19 lots	Avg. 13 lots	Avg. 14 lots	Avg. 16 lots	Avg. 14 lots	Avg. 29 lots	Avg. 26 lots
1.	64	58	70	66	44	48	46	53
2.	323	309	304	303	178	172	184	184
3.	54	62	42	25	23	15	12	15
4.	0.6	0.8	0.3	1.13	0.2	1.2	0.4	.3
5.	645	621	647	614	699	746	731	684
6.	1130	1123	1134	1125	1033	1084	1070	1054
7.	485	502	487	511	334	338	339	370
8.	1.5	1.6	1.6	1.7	1.9	2.0	1.8	2.03
9.	32449	28454	32108	33340	14303	14050	15553	19592
10.	521	493	572	511	645	597	632	600
11.	16	15	9	6	46	7	18	9
12.	55	46	50	45	63	70	61	59
13.	<u>592</u>	<u>554</u>	<u>631</u>	<u>562</u>	<u>754</u>	<u>674</u>	<u>711</u>	<u>668</u>
14.	337	265	253	263	288	330	311	273
15.	39	39	28	23	3	28	33	31
16.	<u>376</u>	<u>304</u>	<u>281</u>	<u>286</u>	<u>291</u>	<u>358</u>	<u>344</u>	<u>304</u>
17.	569	890	740	835	681	812	790	508
18.	10	12	8	5	7	5	4	4
19.	\$19.97	\$20.10	\$19.13	\$19.11	\$16.14	\$17.77	\$17.38	\$17.06
20.	22.66	21.29	21.04	22.48	21.59	19.90	18.50	20.35
21.	2.69	1.19	1.91	3.37	5.45	2.13	1.12	3.29
22.	\$27.04	\$22.89	\$23.80	\$26.51	\$33.21	\$25.61	\$21.40	\$26.85
23.	<u>21.34</u>	<u>19.46</u>	<u>20.53</u>	<u>19.05</u>	<u>23.95</u>	<u>22.16</u>	<u>22.62</u>	<u>19.03</u>
24.	<u>\$ 5.70</u>	<u>\$ 3.43</u>	<u>\$ 3.27</u>	<u>\$ 7.46</u>	<u>\$ 9.26</u>	<u>\$ 3.45</u>	<u>\$ -1.22</u>	<u>\$ 7.82</u>
25.	\$ 4.38	\$ 1.59	\$ 2.75	\$ 4.03	\$11.62	\$ 5.70	\$ 2.89	\$ 6.50
26.	1.32	1.84	.52	3.43	-2.36	-2.25	-4.11	1.82
27.	\$127	\$120	\$128	\$149	\$139	\$119	\$98	\$147
28.	3.12	3.12	3.12	3.12	2.90	2.90	2.90	2.90
29.	2.58	.31	.15	4.34	6.36	.55	-4.12	4.92
30.	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
31.	1.65	.20	.09	2.78	4.08	.35	-2.64	3.15
32.	12.51	1.55	.73	22.17	21.24	1.86	-13.96	18.20

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. That the most profitable lots had a higher rate of gain may be an indication of better cattle or more intensive feeding.

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 return 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 larger proportion of the total weight.

Table 7 includes 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, 1953-1957.

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

The data in Table 8 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, and short-fed yearlings and two-year-olds.

Table 8. Returns from Price Spread and from Feeding

	Long-fed calves Avg. of 39 lots	Long-fed yearlings Avg. of 14 lots	Short-fed yearlings and two-year-olds Avg. of 26 lots
Price spread/100 lbs.	\$3.67	\$3.37	\$3.29
Return over feed cost from price spread	3.04	4.03	6.50
Return over feed cost from feeding	6.66	3.43	1.32
Return over feed cost per 100 lbs. gain	9.70	7.46	7.82
Avg. purchase wt., lbs.	402	614	684
Gain per head, lbs.	529	511	370

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. 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. 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 \$3.67 per one hundred pounds but the return from price spread per one hundred pounds gain was \$3.04 of the total \$9.70 return per 100 pounds gain. The average gain in weight was 529 pounds per head compared to the average purchase weight of 402 pounds. The profit on the gain in weight was more important because the gain in weight exceeded the initial weight by 127 pounds. For the short-fed yearlings and two-year-olds the price spread was only \$3.29 per 100 pounds but the return from price spread per 100 pounds gain in weight was \$6.50. The total return was \$7.82 per 100 pounds gain. The gain in weight was 370 pounds and the average purchase weight was 684 pounds. The price spread was relatively more important than the return from feeding because the initial weight exceeded the gain in weight by 310 pounds.

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. It means that feeding of calves involves less price risk than feeding heavy cattle. The buying and selling phase of the heavy cattle feeding program becomes extremely important because 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.

LABOR REQUIREMENTS FOR FEEDING CATTLE

For the 1956-57 cattle feeding season a special study was made to determine the number of hours of labor used in feeding cattle. Fifty-nine farmers with a total of 70 lots of cattle cooperated in this study.

The results in terms of all labor used per 100 pounds gain in weight and per head for three feeding programs are presented in Tables 9 and 10. There was significantly less time used per 100 pounds gain for those lots with 50 head or more as compared to those below 50 head. This is due to economies of large scale operation obtained by spreading the fixed time in doing a task over a greater number of animals, and also due to greater mechanization in case of the larger lots.

There was no significant difference between calves, short-fed yearlings, and long-fed yearlings in time spent per 100 pounds gain so the same figure is reported for all three feeding programs. The time required per head is determined by multiplying the time per 100 pounds gain by the hundred weight of gain typically put on under each of the feeding programs.

Table 9. Hours of Labor per 100 Pounds Gain in Weight and per Head with Lots of Less Than 50 Head

Feeding Program	Number of lots	Average number of cattle	Average time per 100 lbs. gain	Range in time per 100 lbs. gain	Pounds gain in weight	Average time per head
Long-fed calves	19	40	1.75	1.01-2.62	550	9.62
Long-fed yearlings	3	44	1.75	1.41-1.89	500	8.75
Short-fed yearlings	16	32	1.75	1.01-3.43	340	5.95
All feeding programs	38	36	1.75	1.01-3.43	-	-

Table 10. Hours of Labor per 100 Pounds Gain in Weight and per Head with Lots of 50 Head or More

Feeding Program	Number of lots	Average number of cattle	Average time per 100 lbs. gain	Range in time per 100 lbs. gain	Pounds gain in weight	Average time per head
Long-fed calves	12	95	1.31	.64-1.90	550	7.20
Long-fed yearlings	8	84	1.31	.81-1.78	500	6.55
Short-fed yearlings	9	79	1.31	.82-2.02	340	4.45
All feeding programs	29	87	1.31	.64-2.02	-	-
All feeding programs, all lot sizes	67	59	1.56	.64-3.43	-	-

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 11 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.

The value produced and feed costs are the average results in 1956-57 of the 79 lots presented in this report. Interest is computed at 6% 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.² This includes fixed costs for shelter and equipment such as depreciation.

The hours of labor spent per 100 pounds gain is the average amount spent caring for 67 lots on which detailed labor records were kept for the 1956-57 feeding season.

The return per hour of labor is the return for each hour spent to pay for the labor

^{2/} Pond, G. A. and Hasbargen, P. R., "Planning Farms for Increased Profits", U. of M. Sta. Bul. 445, Dec. 1957.

used and give a return for management. The estimated average return per hour in 1956-57 for the three feeding programs was \$3.54.

The costs and returns upon which this 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.

Table 11. Estimated Returns per Hour of Labor, Feeder Cattle Lots 1956-57

	Long-fed calves	Long-fed yearlings	Short-fed yearlings
<u>Costs and returns per 100 lbs. gain</u>			
Value produced	\$25.52	\$26.51	\$26.85
Feed costs	15.82	19.05	19.03
Interest at 6%	.76	1.16	.95
Miscellaneous cash	.50	.50	.50
Power	.40	.40	.40
Equipment	.30	.30	.30
Shelter	.65	.65	.65
Total	<u>\$18.43</u>	<u>\$22.06</u>	<u>\$21.83</u>
Return for labor and management	7.09	4.45	5.02
Hours of labor spent	1.56	1.56	1.56
Return per hour of labor	<u>\$4.54</u>	<u>\$2.85</u>	<u>\$3.22</u>

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

Step 1. Determine Cost of Producing Finished Animal ³

(a) Original cost per head _____ wt. x \$ _____ Price = _____

(b) Feed and other costs per head:

<u>Feed Cost</u>	<u>Am't. Fed</u>	<u>Price</u>	<u>Cost</u>
Corn (Bu.)	_____	_____	_____
Small grain (Bu.)	_____	_____	_____
Supplement (Lbs.)	_____	_____	_____
All Hay (Tons)	_____	_____	_____
Silage (Tons)	_____	_____	_____
Pasture (Days)	_____	_____	_____

Total Feed Costs _____

Estimated Other Costs

Labor Cost _____ hrs. per head x \$ _____ per hr. = _____

Interest \$ _____ original cost per head x interest rate = _____
(for number of months on feed)

Miscellaneous costs⁴ _____ gain x 1.10 per cwt. = _____

(c) Total cost per head _____

^{3/} Hal Routh, Kenneth H. Thomas, and Roger Johnson, "How Does the Level of Feeder Prices Affect Cattle Feeding Profits?" Report, Agricultural Extension Service, University of Minnesota, September, 1957.

^{4/} Pond, G. A. and Hasbargen, P. R., "Planning Farms for Increased Profits," University of Minnesota Station Bulletin 445, December, 1957.

Step 2. Determine Selling Price you need to cover Costs

Divide: $\frac{\text{Total cost per head}}{\text{sale weight}} = \underline{\hspace{4cm}} =$

Step 3. Your estimated sale value of steer

$\underline{\hspace{4cm}}$ cwt. x \$ $\underline{\hspace{4cm}}$ YOUR ESTIMATED PRICE

PROFIT PER HEAD:

Examples of Various Feeding Programs

Long Fed Calves -- Good to Choice Grade

Step 1. Determine cost of producing finished animal

(a) Original cost per head = 400 lbs. at \$32.00 cwt. = \$128

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

<u>Feed Cost</u>	<u>Am't Fed</u>	<u>Price</u>	<u>Cost</u>
Corn (bu.)	48 bu.	1.10	52.60
Small grains (bu.)	4.1 bu.	.61	2.50
Supplement (lbs.)	242 lbs.	.034	8.23
All hay (tons)	.81 ton	15.00	12.15
Silage (tons)	1.09 tons	6.05	6.59
Pasture (days)	50	.08	<u>4.00</u>

Total Feed Costs \$86.27

Estimated other costs

Labor cost 7.2 hrs. per head x 1.00 per hour 7.20

Interest \$128 original cost per head x .06 = 6.91

(Number of days on farm) = 330

Miscellaneous should cost 550 grain x .65 per cwt.: 6.05

(c) Total cost per head \$234.43

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

$\frac{\text{Total cost per head}}{\text{sale weight}} = \frac{\$234.43}{950} = \$24.68$

Feed Requirements Based on 1953-1957 Lot Averages

	Long-fed yearlings	Short-fed 2 yr. olds
Purchase weight (lbs.)	lbs.	722 lbs.
Gain (lbs.)	⁶³⁴ 500 lbs.	340 lbs.
<u>Requirements per head</u>		
Corn (bu.)	47	39
Small grains (bu.)	1.4	2
Supplement (lbs.)	250	211
All hay (tons)	.74	.52
Silage (tons)	1.98	1.18
Pasture (days)	45	20
Labor (hours)	6.55	4.45
Interest	6%	6%
Miscellaneous costs	\$1.10/cwt.	\$1.10/cwt.