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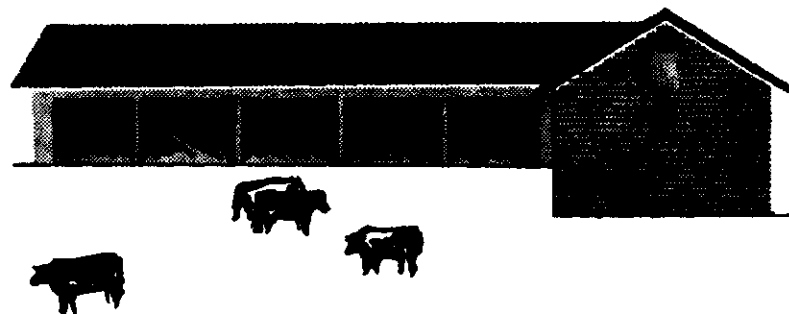
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Cost and Return From Feeding Cattle

1964-1965

Cooperating agencies:

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FEEDER CATTLE COSTS AND RETURNS
1964-1965

H. N. Walch and T. R. Nodland

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INTRODUCTION

The return over feed costs from feeder cattle fluctuates from year to year and from farm to farm. The variation in returns is accounted for by two primary factors: (1) the price spread between the purchase price and the sale price of the cattle, and (2) the feed cost per pound of gain. This is emphasized by this study of costs and returns for 51 lots of feeder cattle on Southern Minnesota farms in the 1964-1965 feeding season. This information was obtained from records kept by members of the Southeastern and Southwestern Minnesota Farm Management Services and by Vocational Agriculture Instructors. The purpose of this report is to make available data regarding the average results from feeding operations, to provide examples of individual lot records and to show the relative importance of feeding efficiency and price spread in feeder cattle production.

The data presented cover averages of individual lots of cattle from purchase as feeders to sale of fat cattle. Three different programs are represented: (1) long-fed calves; (2) long-fed yearlings; and (3) short-fed 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." All lots with an average weight of 500 pounds or less per head at purchase are classed as calves. All lots with an average weight of more than 500 pounds per head at purchase are classed as yearlings.

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

PRICES

Monthly prices of feeder cattle at South St. Paul from January 1964 through May 1966 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 pounds of feeders, all weights, South St. Paul, January 1964 - May 1966 (compiled from Livestock Market News Statistics and Related Data, USDA, AMS, 1964-1966).

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 1964 and 1965. 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	1964	1965
Alfalfa hay, per ton	\$20.00	\$23.00
Timothy or brome hay, per ton	11.60	13.00
Oats or hay silage, per ton	6.00	7.25
Corn silage, per ton	6.75	7.75
Ear corn, per bushel	1.06	1.13
Oats, per bushel	.63	.63
Soybean meal, per 100 pounds	4.67	4.63
Pasture, per month per head	3.00	3.00

The average purchase and sale prices per 100 pounds of feeder cattle for the years 1961-1965 by type of feeding program are shown in Figure 2.

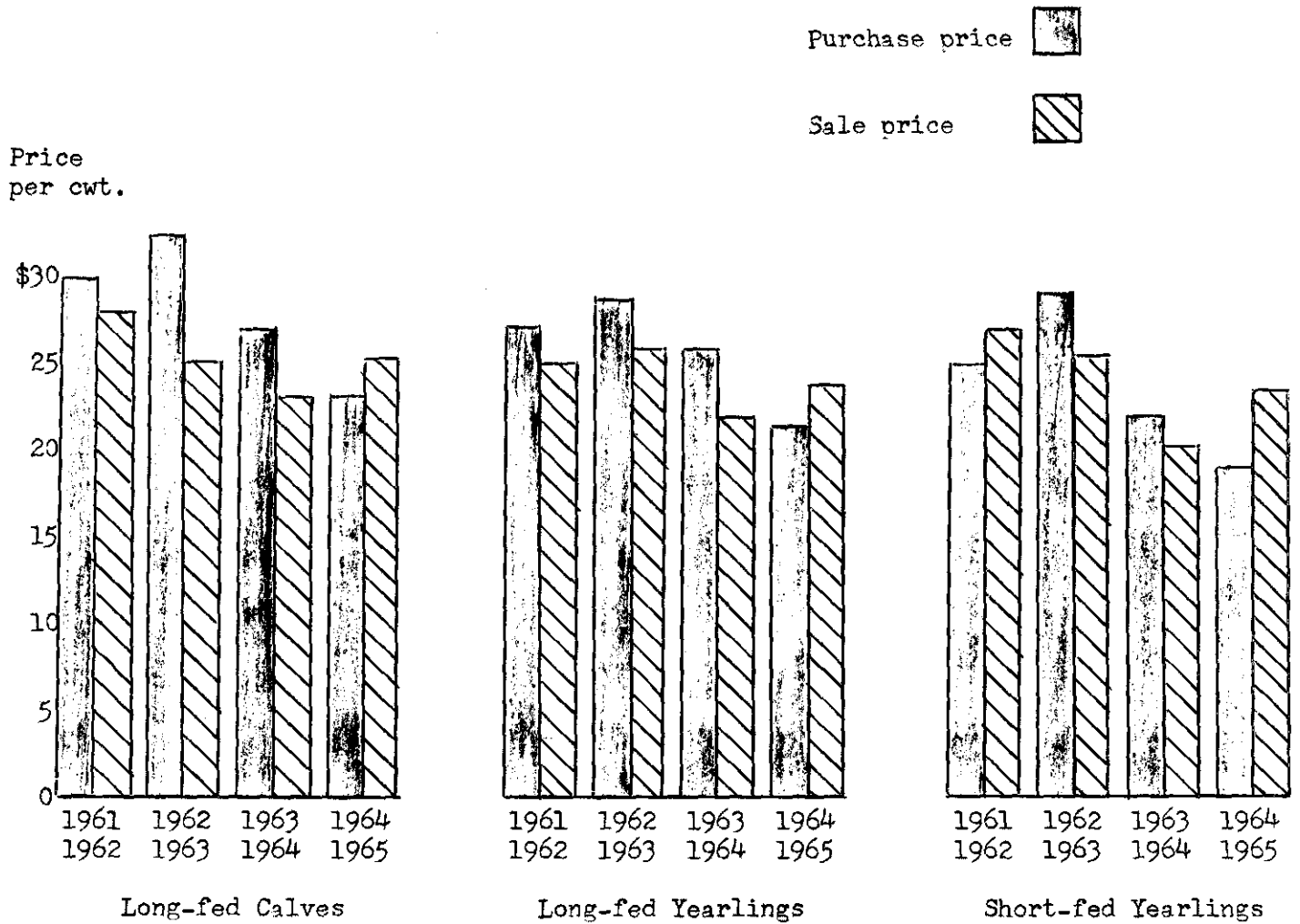


Figure 2. Average purchase and sales prices per 100 pounds of feeder cattle by feeding program on farms studied, 1961-1965.

NUMBERS AND WEIGHTS OF CATTLE FED

The individual lots of cattle for the 1964-1965 feeding period included a wide range as to numbers per lot, gain per head, and daily gain. The data in Table 2 indicate the range from high to low for each item and also give a comparison between the various feeding programs used by farmers included in this study.

Daily gains were greatest for the short-fed yearling cattle. This is due to their larger size, since rate of gain increases as cattle get older. The long-fed yearling cattle were fed more roughage than the short-fed yearlings, which would partially account for the difference in feeding time.

Average death loss was 0.9 percent, 0.5 percent, and 0.8 percent for the long-fed calves, long-fed yearlings, and short-fed yearlings respectively.

Table 2. Range in numbers and weights for individual lots, 1964-1965.

Item	32 lots			9 lots		
	long-fed calves			long-fed yearlings		
	Ave.	High	Low	Ave.	High	Low
Number of head in lot	109	264	11	97	205	14
Average purchase weight	415	500	315	592	716	525
Average sale weight	954	1081	625	1054	1173	943
Average gain in weight per head	539	669	235	462	528	365
Average daily gain per head	1.7	2.1	0.9	1.6	1.9	1.1

Item	10 lots		
	short-fed yearlings		
	Ave.	High	Low
Number of head in lot	72	114	33
Average purchase weight	668	785	569
Average sale weight	1055	1180	903
Average gain in weight per head	386	501	266
Average daily gain per head	2.0	2.5	1.4

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 1964-1965 feeding season are shown in Tables 3 through 5 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.

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) margin, which is a positive price spread between the cost of the feeders and that of the fed cattle when sold; and (2) gain, which refers to the gain in weight produced in the lot at less cost than the selling price. 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 31 and 32 of the tables. The return from feeding (line 32) is the difference between the feed cost per 100 pounds gain in weight and the selling price per 100 pounds. The remainder of return over feed cost is the price spread minus death loss. The return per \$100 feed cost (line 33) 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.

Table 3. Costs and returns from long-fed calves, 1964-1965

Item	Average of 32 lots	Individual lot numbers		
		1	2	
<u>Number and weight of cattle fed</u>				
1. Date of purchase		Nov 64	Oct 64	
2. Number of head bought	109	236	64	
3. Days on farm	318	271	309	
4. Days on pasture	7	87	-	
5. Percent death loss	0.9	0.0	0.0	
6. Average purchase weight, lbs.	415	390	434	
7. Average sales weight, lbs.	954	625	950	
8. Gain per head, lbs.	539	235	516	
9. Gain per head per day, lbs.	1.7	0.9	1.7	
10. Pounds of beef produced	58130	55522	33000	
<u>Feed used</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn (bu./head) (lbs./cwt.)	52.7	555	178	298
12. Small grain (bu./head) (lbs/cwt)	4.8	31	-	13
13. Commercial feed, lbs.	237	44	-	56
14. Total concentrates, lbs.	3340	630	178	367
15. Legume hay, lbs.	1179	227	194	270
16. Other hay, lbs.	16	3	-	-
17. Total dry roughage, lbs.	1195	230	194	270
18. Corn silage, lbs.	1930	358	792	901
19. Grass or oat silage, lbs.	65	11	-	-
20. Total silage, lbs.	1995	369	792	901
21. Pasture, days	7	2	37	-
<u>Price of cattle</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$90.37	\$22.02	\$21.78	\$19.51
23. Price received	231.38	24.22	24.47	24.65
24. Price spread or gross margin	141.01	2.20	2.69	5.14
<u>Cost and return</u>				
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25. Total value produced	\$15249.46	\$16043.48	\$9562.60	
26. Total feed cost	9906.19	7085.11	5052.74	
27. Total return over feed	5343.27	8958.37	4509.86	
<u>Cost and return</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$140.33	\$26.42	\$28.89	\$28.98
29. Feed costs	96.16	18.17	12.76	15.31
30. Return over feed cost	44.17	8.25	16.13	13.67
31. Return over feed cost from price spread		2.20	4.42	4.33
32. Return over feed cost from feeding		6.05	11.71	9.34
33. Return per \$100 feed cost		\$150	\$226	\$189

Table 3. Costs and returns from long-fed calves, 1964-1965 (continued)

Item	Individual lot numbers			
	3	4	5	6
<u>Number and weight of cattle fed</u>				
1. Date of purchase	Nov 64	Dec 64	Dec 64	Nov 64
2. Number of head bought	49	211	122	51
3. Days on farm	293	337	295	321
4. Days on pasture	-	-	-	-
5. Percent death loss	0.0	0.5	1.0	0.0
6. Average purchase weight, lbs.	452	394	468	389
7. Average sales weight, lbs.	1038	1011	1081	1011
8. Gain per head, lbs.	586	617	613	622
9. Gain per head per day, lbs.	2.0	1.8	2.1	1.9
10. Pounds of beef produced	28720	129375	73633	31700
<u>Feed used</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn, lbs.	551	337	529	454
12. Small grain, lbs.	6	-	3	2
13. Commercial feed, lbs.	4	23	34	51
14. Total concentrates, lbs.	561	360	566	507
15. Legume hay, lbs.	139	154	253	125
16. Other hay, lbs.	-	-	-	-
17. Total dry roughage, lbs.	139	154	253	125
18. Corn silage, lbs.	234	904	-	-
19. Grass or oat silage, lbs.	-	186	-	-
20. Total silage, lbs.	234	1090	-	-
21. Pasture, days	-	-	-	-
<u>Price of cattle</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$22.04	\$20.61	\$21.06	\$24.36
23. Price received	25.78	24.96	25.47	25.57
24. Price spread or gross margin	3.74	4.35	4.41	1.21
<u>Cost and return</u>				
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25. Total value produced	\$8230.51	\$35909.49	\$21267.81	\$8345.70
26. Total feed cost	4376.05	19140.71	11789.67	4326.46
27. Total return over feed	3854.46	16768.78	9478.14	4019.24
<u>Cost and return</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$28.66	\$27.75	\$28.88	\$26.33
29. Feed costs	15.23	14.79	16.01	13.65
30. Return over feed cost	13.43	12.96	12.87	12.68
31. Return over feed cost from price spread	2.88	2.79	3.41	0.76
32. Return over feed cost from feeding	10.55	10.17	9.46	11.92
33. Return per \$100 feed cost	\$190	\$188	\$180	\$193

Table 3. Costs and returns from long-fed calves, 1964-1965 (continued)

	Individual lot numbers					
	7	8	9	10	11	12
1.	Dec 64	Nov 64	Nov 64	Dec 64	Nov 64	Sept 64
2.	149	111	79	187	260	40
3.	376	286	266	262	302	362
4.	-	-	-	-	-	150
5.	0.7	0.0	0.0	1.6	0.8	0.0
6.	357	457	434	447	404	406
7.	1000	884	960	980	969	957
8.	643	427	526	533	565	551
9.	1.7	1.5	2.0	2.0	1.9	1.5
10.	94803	47400	33699	96790	144800	22065
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11.	384	568	467	519	544	348
12.	1	3	1	62	7	21
13.	17	71	54	69	67	40
14.	402	642	522	650	618	409
15.	224	219	445	159	51	471
16.	-	-	-	-	-	-
17.	224	219	445	159	51	471
18.	734	468	297	238	276	-
19.	-	-	-	-	166	-
20.	734	468	297	238	442	-
21.	-	-	-	-	-	27
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22.	\$23.61	\$20.18	\$20.70	\$21.98	\$22.28	\$22.50
23.	24.57	24.64	24.58	25.10	25.18	24.72
24.	0.96	4.46	3.88	3.12	2.90	2.22
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25.	\$23803.38	\$13946.82	\$9613.28	\$26906.63	\$39523.22	\$5813.43
26.	13188.17	8873.43	6021.43	16688.51	24859.96	3589.56
27.	10615.21	5073.39	3591.85	10218.12	14663.26	2223.87
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28.	\$25.11	\$29.42	\$28.53	\$27.80	\$27.29	\$26.35
29.	13.91	18.72	17.87	17.24	17.17	16.27
30.	11.20	10.70	10.66	10.56	10.12	10.08
31.	0.54	4.78	3.95	2.70	2.11	1.63
32.	10.66	5.92	6.71	7.86	8.01	8.45
33.	\$180	\$157	\$160	\$161	\$159	\$162

Table 3. Costs and returns from long-fed calves, 1964-1965 (continued)

Item	Individual lot numbers			
	13	14	15	16
<u>Number and weight of cattle fed</u>				
1. Date of purchase	Nov 64	Nov 64	Nov 64	Nov 64
2. Number of head bought	176	225	80	264
3. Days on farm	307	309	264	335
4. Days on pasture	-	-	-	-
5. Percent death loss	0.0	0.0	3.8	3.4
6. Average purchase weight, lbs.	424	404	470	363
7. Average sales weight, lbs.	990	923	961	1022
8. Gain per head, lbs.	566	519	491	659
9. Gain per head per day, lbs.	1.8	1.7	1.8	2.0
10. Pounds of beef produced	99595	116670	39330	164715
<u>Feed used</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn, lbs.	602	635	552	534
12. Small grain, lbs.	13	5	-	3
13. Commercial feed, lbs.	50	83	38	48
14. Total concentrates, lbs.	665	723	590	585
15. Legume hay, lbs.	161	88	280	67
16. Other hay, lbs.	-	-	-	-
17. Total dry roughage, lbs.	161	88	280	67
18. Corn silage, lbs.	136	317	-	364
19. Grass or oat silage, lbs.	-	-	-	-
20. Total silage, lbs.	136	317	-	364
21. Pasture, days	-	-	-	-
<u>Price of cattle</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$22.91	\$20.92	\$24.25	\$23.02
23. Price received	25.27	25.12	25.29	24.42
24. Price spread or gross margin	2.36	4.20	1.04	1.40
<u>Cost and return</u>				
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25. Total value produced	\$26923.53	\$33142.61	\$10334.64	\$41571.57
26. Total feed cost	16911.22	21477.50	6543.34	25982.09
27. Total return over feed	10012.31	11665.11	3791.30	15589.48
<u>Cost and return</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$27.03	\$28.41	\$26.28	\$25.24
29. Feed costs	16.98	18.41	16.64	15.78
30. Return over feed cost	10.05	10.00	9.64	9.46
31. Return over feed cost from price spread	1.76	3.29	0.99	0.82
32. Return over feed cost from feeding	8.29	6.71	8.65	8.64
33. Return per \$100 feed cost	\$159	\$154	\$158	\$160

Table 3. Costs and returns from long-fed calves, 1964-1965 (continued)

		Individual lot numbers					
		17	18	19	20	21	22
1.	Nov 64		Oct 64	Nov 64	Nov 64	Nov 64	Nov 64
2.	217		99	50	11	60	40
3.	356		326	330	281	359	358
4.	-		-	-	-	-	-
5.	1.0		2.0	0.0	0.0	0.0	2.5
6.	368		315	416	500	423	326
7.	1019		984	1047	908	947	896
8.	651		669	631	408	524	570
9.	1.8		2.1	1.9	1.6	1.5	1.6
10.	139243		64250	31540	4490	31465	21935
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11.	550		608	576	1054	517	795
12.	-		-	4	-	8	-
13.	45		29	61	47	44	17
14.	595		637	641	1101	569	812
15.	118		140	214	334	305	246
16.	-		-	-	44	-	-
17.	118		140	214	378	305	246
18.	343		187	-	134	-	-
19.	-		-	-	-	-	-
20.	343		187	-	134	-	-
21.	-		-	-	-	-	-
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22.	\$23.03		\$24.29	\$23.77	\$10.00	\$22.99	\$20.89
23.	24.99		24.64	25.09	21.92	23.24	23.62
24.	1.96		0.35	1.32	11.92	.25	2.73
	<u>Lot</u>		<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25.	\$36368.38		\$15941.17	\$8189.62	\$1639.92	\$7376.00	\$5537.10
26.	23359.35		10191.54	5533.12	1265.02	5032.49	4005.22
27.	13009.03		5749.63	2656.50	374.90	2343.51	1531.88
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28.	\$26.12		\$24.81	\$25.97	\$36.52	\$23.44	\$25.24
29.	16.77		15.86	17.54	28.17	15.99	18.26
30.	9.35		8.95	8.43	8.35	7.45	6.98
31.	1.13		.17	0.88	14.60	0.20	1.62
32.	8.22		8.78	7.55	-6.25	7.25	5.36
33.	\$156		\$156	\$148	\$130	\$146	\$138

Table 3. Costs and returns from long-fed calves, 1964-1965 (continued)

Item	Individual lot numbers			
	23	24	25	26
<u>Number and weight of cattle fed</u>				
1. Date of purchase	Nov 64	Nov 64	Nov 64	Oct 64
2. Number of head bought	24	135	54	61
3. Days on farm	276	291	277	346
4. Days on pasture	-	-	-	-
5. Percent death loss	4.2	0.0	3.7	0.0
6. Average purchase weight, lbs.	405	383	439	429
7. Average sales weight, lbs.	921	816	888	1078
8. Gain per head, lbs.	516	433	449	649
9. Gain per head per day, lbs.	1.9	1.5	1.6	1.9
10. Pounds of beef produced	11465	58360	22480	39600
<u>Feed used</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn, lbs.	673	681	807	550
12. Small grain, lbs.	22	11	-	22
13. Commercial feed, lbs.	55	54	52	43
14. Total concentrates, lbs.	750	746	859	615
15. Legume hay, lbs.	288	270	400	267
16. Other hay, lbs.	-	-	-	6
17. Total dry roughage, lbs.	288	270	400	273
18. Corn silage, lbs.	-	-	-	554
19. Grass or oat silage, lbs.	-	-	-	-
20. Total silage, lbs.	-	-	-	554
21. Pasture, days	-	-	-	-
<u>Price of cattle</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$21.35	\$20.45	\$20.17	\$24.75
23. Price received	23.66	22.49	23.92	25.10
24. Price spread or gross margin	2.31	2.04	3.75	0.35
<u>Cost and return</u>				
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25. Total value produced	\$2937.29	\$14185.91	\$6264.63	\$10031.55
26. Total feed cost	2328.99	11476.97	5352.29	8470.06
27. Total return over feed	608.30	2708.94	912.34	1561.49
<u>Cost and return</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$25.62	\$24.31	\$27.87	\$25.33
29. Feed costs	20.31	19.67	23.81	21.39
30. Return over feed cost	5.31	4.64	4.06	3.94
31. Return over feed cost from price spread	1.96	1.82	3.95	0.23
32. Return over feed cost from feeding	3.35	2.82	0.11	3.71
33. Return per \$100 feed cost	\$126	\$124	\$117	\$118

Table 3. Costs and returns from long-fed calves, 1964-1965 (continued)

		Individual lot numbers					
		27	28	29	30	31	32
1.	Jan 65		Dec 64	Jan 64	Nov 63	Dec 64	Nov 64
2.	52		30	153	42	87	60
3.	276		315	335	462	333	345
4.	-		-	-	-	-	-
5.	0.0		0.0	1.3	0.0	0.0	1.7
6.	450		400	480	357	480	412
7.	903		884	1067	1026	890	884
8.	453		484	587	669	410	472
9.	1.6		1.5	1.8	1.4	1.2	1.4
10.	23555		14510	87560	28085	41497	23310
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11.	644		439	441	386	538	998
12.	14		736	-	7	-	16
13.	44		41	21	66	48	38
14.	702		1216	462	459	586	1052
15.	110		262	366	69	335	249
16.	-		-	-	46	-	-
17.	110		262	366	115	335	249
18.	1100		414	741	1431	901	-
19.	-		-	-	-	-	-
20.	1100		414	741	1431	901	-
21.	-		-	-	-	-	-
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22.	\$23.50		\$22.00	\$21.42	\$28.75	\$24.34	\$21.25
23.	25.77		24.41	20.09	22.38	23.28	20.63
24.	2.27		2.41	-1.33	-6.37	-1.06	-0.62
	<u>Lot</u>		<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25.	\$6598.71		\$3832.17	\$16615.81	\$5330.18	\$9281.59	\$6914.08
26.	5755.58		3397.44	14640.05	4728.66	8432.70	7122.76
27.	843.13		434.73	1975.76	601.52	848.89	-208.68
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28.	\$28.01		\$26.41	\$18.98	\$18.98	\$22.37	\$24.42
29.	24.43		23.41	16.72	16.84	20.32	25.16
30.	3.58		3.00	2.26	2.14	2.05	-0.74
31.	2.24		2.00	-1.11	-3.40	-0.91	3.79
32.	1.34		1.00	3.37	5.54	2.96	-4.53
33.	\$115		\$113	\$113	\$113	\$110	\$ 97

Table 4. Costs and returns from long-fed yearlings, 1964-1965

Item	Average of 9 lots	Individual lot numbers 33	
<u>Number and weight of cattle fed</u>			
1. Date of purchase		Feb 65	
2. Number of head bought	97	14	
3. Days on farm	296	259	
4. Days on pasture	10	-	
5. Percent death loss	0.5	0.0	
6. Average purchase weight, lbs.	592	665	
7. Average sales weight, lbs.	1054	1146	
8. Gain per head, lbs.	462	481	
9. Gain per head per day, lbs.	1.6	1.9	
10. Pounds of beef produced	44563	6734	
<u>Feed used</u>			
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn (bu./head) (lbs./cwt.)	42.4	520	582
12. Small grain (bu./head) (lbs./cwt)	2.5	18	-
13. Commercial feed, lbs.	213	47	37
14. Total concentrates, lbs.	2669	585	619
15. Legume hay, lbs.	1216	228	495
16. Other hay, lbs.	56	12	-
17. Total dry roughages, lbs.	1272	240	495
18. Corn silage, lbs.	2212	487	-
19. Grass or oat silage, lbs.	418	83	-
20. Total silage, lbs.	2630	570	-
21. Pasture, days	10	2	-
<u>Price of cattle</u>			
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$118.32	\$20.26	\$16.95
23. Price received	243.53	23.04	25.00
24. Price spread or gross margin	125.21	2.78	8.05
<u>Cost and return</u>			
		<u>Lot</u>	<u>Lot</u>
25. Total value produced	\$11346.51	\$2432.96	\$2432.96
26. Total feed cost	8063.77	1334.67	1334.67
27. Total return over feed	3282.74	1098.29	1098.29
<u>Cost and return</u>			
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$124.56	\$27.03	\$36.13
29. Feed costs	85.31	18.71	19.82
30. Return over feed cost	39.25	8.32	16.31
31. Return over feed cost from price spread		3.99	11.13
32. Return over feed cost from feeding		4.33	5.18
33. Return per \$100 feed cost		\$145	\$182

Table 4. Costs and returns from long-fed yearlings 1964-1965 (continued)

		Individual lot numbers				
		34	35	36	37	38
1.	Oct 64	Varied		Nov 65	Jan 65	Mar 64
2.	60	174		46	186	122
3.	252	326		302	272	305
4.	-	-		-	-	-
5.	0.0	2.9		0.0	1.1	0.0
6.	716	525		574	574	614
7.	1173	1043		1102	1014	1108
8.	457	518		528	440	494
9.	1.8	1.6		1.7	1.6	1.6
10.	27395	84896		24285	79796	60320
	<u>Cwt.</u>	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11.	480	614		499	680	545
12.	-	13		3	-	6
13.	28	61		57	46	37
14.	508	688		559	726	588
15.	277	153		199	149	149
16.	29	4		49	20	2
17.	306	157		248	169	151
18.	1022	292		256	530	464
19.	-	749		-	-	-
20.	1022	1041		256	530	464
21.	-	-		-	-	-
	<u>Cwt.</u>	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22.	\$14.99	\$20.77		\$21.94	\$22.54	\$23.08
23.	22.27	25.53		23.91	25.13	23.32
24.	7.28	4.76		1.97	2.59	0.24
	<u>Lot</u>	<u>Lot</u>		<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25.	\$9227.57	\$26024.41		\$6324.11	\$22797.84	\$14244.62
26.	4984.48	18246.56		4108.69	16152.59	9895.49
27.	4243.09	7777.85		2215.42	6645.25	4349.13
	<u>Cwt.</u>	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28.	\$33.68	\$30.65		\$26.04	\$28.57	\$23.62
29.	18.19	21.49		16.92	20.24	16.41
30.	15.49	9.16		9.12	8.33	7.21
31.	11.41	5.12		2.13	3.44	0.30
32.	4.08	4.04		6.99	4.89	6.91
33.	\$185	\$143		\$154	\$141	\$144

Table 4. Costs and returns from long-fed yearlings 1964-1965 (continued)

Item	Individual lot numbers		
	39	40	41
<u>Number and weight of cattle fed</u>			
1. Date of purchase	Feb 64	June 64	Varied
2. Number of head bought	52	20	205
3. Days on farm	390	242	313
4. Days on pasture	-	-	86
5. Percent death loss	0.0	0.0	1.0
6. Average purchase weight, lbs.	502	613	546
7. Average sales weight, lbs.	943	978	982
8. Gain per head, lbs.	441	365	436
9. Gain per head per day, lbs.	1.1	1.5	1.4
10. Pounds of beef produced	22910	7305	87434
<u>Feed used</u>			
11. Corn, lbs.	<u>Cwt.</u> 459	<u>Cwt.</u> 823	<u>Cwt.</u> -
12. Small grain, lbs.	26	-	113
13. Commercial feed, lbs.	46	66	42
14. Total concentrates, lbs.	531	889	155
15. Legume hay, lbs.	410	41	181
16. Other hay, lbs.	-	-	-
17. Total dry roughages, lbs.	410	41	181
18. Corn silage, lbs.	-	-	1816
19. Grass or oat silage, lbs.	-	-	-
20. Total silage, lbs.	-	-	1816
21. Pasture, days	-	-	20
<u>Price of cattle</u>			
22. Price paid	<u>Cwt.</u> \$24.31	<u>Cwt.</u> \$15.75	<u>Cwt.</u> \$22.01
23. Price received	22.01	20.52	19.65
24. Price spread or gross margin	-2.30	4.77	-2.36
<u>Cost and return</u>			
25. Total value produced	<u>Lot</u> \$4446.40	<u>Lot</u> \$2084.64	<u>Lot</u> \$14536.05
26. Total feed cost	3633.48	1848.24	12369.70
27. Total return over feed	812.92	236.40	2166.35
<u>Cost and return</u>			
28. Value produced	<u>Cwt.</u> \$19.41	<u>Cwt.</u> \$28.54	<u>Cwt.</u> \$16.63
29. Feed costs	15.86	25.30	14.15
30. Return over feed cost	3.55	3.24	2.48
31. Return over feed cost from price spread	-2.60	8.02	-3.02
32. Return over feed cost from feeding	6.15	-4.78	5.50
33. Return per \$100 feed cost	\$122	\$113	\$117

Table 5. Costs and returns from short-fed yearlings 1964-1965

Item	Average of 10 lots	Individual lot numbers		
		42	43	
<u>Number and weight of cattle fed</u>				
1. Date of purchase		Dec 64	Varied	
2. Number of head bought	72	62	49	
3. Days on farm	193	219	200	
4. Days on pasture	3	-	-	
5. Percent death loss	0.8	0.0	0.0	
6. Average purchase weight, lbs.	668	748	658	
7. Average sales weight, lbs.	1055	1180	1154	
8. Gain per head, lbs.	386	432	496	
9. Gain per head per day, lbs.	2.0	2.0	2.5	
10. Pounds of beef produced	25369	24430	24275	
<u>Feed used</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn (bu/head) (lbs./cwt.)	36.7	565	539	278
12. Small grain (bu/head) (lbs/cwt)	1.7	12	-	-
13. Commercial feed, lbs.	185	51	36	25
14. Total concentrates, lbs.	2295	628	575	303
15. Legume hay, lbs.	662	162	303	196
16. Other hay, lbs.	37	10	33	-
17. Total dry roughage, lbs.	699	172	336	196
18. Corn silage, lbs.	3593	935	1056	1178
19. Grass or oat silage, lbs.	108	29	-	118
20. Total silage, lbs.	3701	964	1056	1296
21. Pasture, days	3	.7	-	-
<u>Price of cattle</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$119.40	\$17.83	\$15.16	\$14.91
23. Price received	233.98	22.29	24.57	21.26
24. Price spread or gross margin	114.58	4.46	9.41	6.35
<u>Cost and return</u>				
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25. Total value produced	\$7564.12	\$10366.55	\$7206.10	
26. Total feed cost	5015.64	5070.06	3344.74	
27. Total return over feed	2548.48	5296.49	3861.36	
<u>Cost and return</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$114.02	\$29.81	\$42.43	\$29.68
29. Feed costs	73.70	19.74	20.75	13.78
30. Return over feed cost	40.32	10.07	21.68	15.90
31. Return over feed cost from price spread		7.52	17.86	8.42
32. Return over feed cost from feeding		2.55	3.82	7.48
33. Return per \$100 feed cost		\$154	\$204	\$215

Table 5. Costs and returns from short-fed yearlings 1964-1965 (continued)

Item	Individual lot numbers		
	44	45	46
<u>Number and weight of cattle fed</u>			
1. Date of purchase	Oct 64	Oct 64	Sept 64
2. Number of head bought	60	107	60
3. Days on farm	225	149	208
4. Days on pasture	30	-	-
5. Percent death loss	3.3	0.0	1.7
6. Average purchase weight, lbs.	569	730	717
7. Average sales weight, lbs.	1037	1044	1140
8. Gain per head, lbs.	468	314	423
9. Gain per head per day, lbs.	2.1	2.1	2.0
10. Pounds of beef produced	25995	33695	25355
<u>Feed used</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn, lbs.	368	565	475
12. Small grain, lbs.	-	-	-
13. Commercial feed, lbs.	48	53	29
14. Total concentrates, lbs.	416	618	504
15. Legume hay, lbs.	239	65	284
16. Other hay, lbs.	-	-	32
17. Total dry roughage, lbs.	239	65	316
18. Corn silage, lbs.	1616	356	1025
19. Grass or oat silage, lbs.	-	-	-
20. Total silage, lbs.	1616	356	1025
21. Pasture, days	7	-	-
<u>Price of cattle</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$18.00	\$18.04	\$15.56
23. Price received	24.42	21.02	20.10
24. Price spread or gross margin	6.42	2.98	4.54
<u>Cost and return</u>			
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25. Total value produced	\$8543.25	\$9408.91	\$7046.32
26. Total feed cost	5186.70	5386.34	4625.05
27. Total return over feed	3356.55	4022.57	2421.27
<u>Cost and return</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$32.86	\$27.92	\$27.79
29. Feed costs	19.95	15.98	18.24
30. Return over feed cost	12.91	11.94	9.55
31. Return over feed cost from price spread	8.44	6.90	7.69
32. Return over feed cost from feeding	4.47	5.04	1.86
33. Return per \$100 feed cost	\$165	\$175	\$152

Table 5. Costs and returns from short-fed yearlings 1964-1965 (continued)

		Individual lot numbers				
		47	48	49	50	51
1.	Nov 64		Mar 65	Nov 64	Sept 64	Oct 64
2.	33		65	114	62	104
3.	235		198	194	140	161
4.	-		-	-	-	-
5.	0.0		1.5	0.0	1.6	0.0
6.	587		598	651	640	705
7.	1088		903	917	961	1123
8.	501		305	266	321	338
9.	2.1		1.5	1.4	2.3	2.1
10.	16555		18944	30376	18917	35150
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11.	635		672	798	659	661
12.	102		-	15	-	-
13.	58		57	84	47	74
14.	795		729	897	706	735
15.	173		215	4	132	10
16.	-		34	1	-	3
17.	173		249	5	132	13
18.	432		265	1600	740	1081
19.	-		169	-	-	-
20.	432		434	1600	740	1081
21.	-		-	-	-	-
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22.	\$13.50		\$20.54	\$20.00	\$20.30	\$22.25
23.	20.75		22.50	23.56	21.62	23.08
24.	7.25		1.96	3.56	1.32	.83
	<u>Lot</u>		<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25.	\$4837.05		\$5026.14	\$9801.09	\$4614.19	\$8791.64
26.	3474.41		3867.68	8090.91	3720.36	7390.17
27.	1362.64		1158.46	1710.18	893.83	1401.47
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28.	\$29.22		\$26.53	\$32.26	\$24.39	\$25.01
29.	20.99		20.41	26.63	19.67	21.02
30.	8.23		6.12	5.63	4.72	3.99
31.	8.47		4.03	8.70	2.77	1.93
32.	-0.24		2.09	-3.07	1.95	2.06
33.	\$139		\$130	\$121	\$124	\$119

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

The data in table 6 serve to illustrate the comparative importance of price 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.

Returns from feeding are of most importance in the calf feeding program and become relatively less important for long-fed yearlings and least important for short-fed yearlings. 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 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. The price spread per 100 pounds for the 1964-1965 lots is \$2.20 for the long-fed calves in comparison with \$2.78 and \$4.46 for the long-fed and short-fed yearlings respectively. The return over feed cost from price spread is \$2.20, \$3.99 and \$7.52 for the long-fed calves, long-fed and short-fed yearlings respectively. The return over feed cost from feeding was \$6.05, \$4.33 and \$2.55 for the long-fed calves, long-fed yearlings, and short-fed yearlings respectively. These figures are all shown in table 6.

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

LABOR REQUIREMENTS FOR FEEDING CATTLE

The average labor requirements for feeding cattle were determined for the three cattle feeding systems and are represented in table 7.

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.

Table 6. Returns from price spread and from feeding 1964-1965

Item	Long-fed calves 32 lots	Long-fed yearlings 9 lots	Short-fed yearlings 10 lots
Price spread per 100 pounds	\$2.20	\$2.78	\$4.46
Return over feed cost from price spread	2.20	3.99	7.52
Return over feed cost from feeding	6.05	4.33	2.55
Return over feed cost per 100 pounds gain	8.25	8.32	10.07
Average purchase weight, pounds	415	592	668
Gain per head, pounds	539	462	386
Gain per head per day, pounds	1.7	1.6	2.0

Table 7. Hours of labor, total per head and per 100 pounds gain in weight for three feeding programs

Item	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 weeks	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 pounds gain	2.90	1.92	1.59	1.43	1.33	1.26	
<u>Long-fed yearlings (500 lbs. gain)</u>							
Total for 36 weeks	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 pounds gain	2.22	1.47	1.22	1.09	1.01	.96	
<u>Short-fed yearlings (425 lbs. gain)</u>							
Total for 27 weeks	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 pounds gain	1.92	1.34	1.15	1.06	1.00	.96	

Source: 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.

The three cattle feeding systems upon which the labor requirements are based are typical of those used for long-fed calves, long-fed yearlings and short-fed yearlings 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 gain and good hay for the first four weeks. This is followed by a full feed of silage, limited grain and hay for the next 22 weeks. For the last 21 weeks they are fed a full feed of grain and some hay. In the 47 weeks on feed, these cattle should gain about 550 pounds; they are sold in the early fall at approximately 950 pounds.

Long-fed yearling steers fed a liberal roughage ration: Good to choice yearling steers weighing about 650 pounds are purchased in the fall. They are placed on corn-stalk pasture for the first six weeks. This is followed by a full feed of silage, and limited 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 corn-stalk pasture for the first three weeks. This is followed by a full feed of grain with hay for the next 24 weeks. In the 27 weeks on feed these cattle should gain about 425 pounds; they are sold in the late spring at approximately 1125 pounds.

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

ESTIMATED RETURNS OVER ALL COSTS PER HOUR OF LABOR

The return over feed costs does not give the complete picture as to returns for feeding cattle. In table 8 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 1964-1965.

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.¹ This includes fixed costs for shelter and equipment, such as depreciation.

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

The hours of labor spent per 100 pounds gain are based on the detailed labor study carried out during the 1956-1957 feeding season, as reported in Table 7. 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 1964-1965 ranged from \$3.68 per hour with long-fed yearlings to \$5.39 per hour with short-fed yearlings, as shown in Table 8.

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.

Table 8. Estimated returns per hour of labor from feeder cattle (adjusted to lot size of 80 head)

Item	Long-fed calves	Long-fed yearlings	Short-fed yearling steers
Number of lots	32	9	10
Value produced per 100 pounds gain	\$26.42	\$27.03	\$29.81
Cost per 100 pounds gain			
Feed costs	18.17	18.71	19.74
Interest at 6.5 percent	.96	1.36	1.16
Miscellaneous cash	.50	.50	.50
Power	.40	.40	.40
Equipment	.30	.30	.30
Shelter	.65	.65	.65
Total	\$20.98	\$21.92	\$22.75
Return to labor and management	\$ 5.44	\$ 5.11	\$ 7.06
Hours of labor spent*	1.43	1.39	1.31
Return per hour of labor	3.80	3.68	5.39
Number of days on farm	318	296	193
Gain per head, lbs.	539	462	386

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

Table 9 shows the feed requirements for the three feeding programs. These figures are averages of the amounts of the various feeds fed per hundredweight of gain during the four-year period of 1961-1965.

Table 9. Feed requirements based on 1961-1965 lot averages

Item	Long-fed calves	Long-fed yearlings	Short-fed yearlings
Purchase weight	409	597	689
Gain	556	473	363
<u>Requirements per head</u>			
Corn, bu.	53	49	43
Small grain, bu.	2.8	1.1	0.7
Supplement, lbs.	277	243	207
All hay, tons	0.75	0.72	0.44
Silage, tons	1.04	1.51	1.22
Pasture, days	12	17	3
Labor, hours	(See Table 7 for labor requirements by size of lot)		
Interest, percent	6.5	6.5	6.5
Miscellaneous costs, per cwt.	\$0.90	\$0.90	\$0.90
Overhead, shelter and equipment costs, per cwt.	\$0.95	\$0.95	\$0.95

Table 10 presents a four-year comparison of feeder cattle costs and returns. The estimated returns per hour of labor and estimated returns to management and labor per head indicate a wide variation in returns over the four feeding periods, 1961-1965.

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 work sheet on page 26. Past records of feed requirements over a period of years for comparable types of cattle fed to similar weights and finish should be used as a basis for the calculations. For farmers who do not have feed records the averages shown in tables 9 and 11 of this report will provide data which can be used.

Table 10. A four-year comparison of feeder cattle costs and returns

Item	Long-fed calves			
	1961-62 average 18 lots	1962-63 average 16 lots	1963-64 average 18 lots	1964-65 average 32 lots
<u>Number and weight of cattle fed</u>				
Number of head bought	86	110	90	109
Days on farm	367	348	323	318
Days on pasture	22	3	9	7
Percent death loss	1.1	1.2	2.9	0.9
Average purchase weight, lbs.	406	411	404	415
Average sales weight, lbs.	940	993	972	954
Gain per head, lbs.	534	582	568	539
Gain per head per day, lbs.	1.5	1.6	1.8	1.7
Pounds beef produced per lot	45750	63094	48939	58130
<u>Feed used per 100 lbs. gain</u>				
Corn, lbs.	571	509	525	555
Small grain, lbs.	19	6	9	31
Commercial feed, lbs.	67	50	39	44
Total concentrates, lbs.	<u>657</u>	<u>565</u>	<u>573</u>	<u>630</u>
Legume hay, lbs.	246	239	313	227
Other hay and stover, lbs.	26	20	-	3
Total dry roughage, lbs.	<u>272</u>	<u>259</u>	<u>313</u>	<u>230</u>
Silage, lbs.	460	422	258	369
Pasture, days	4	0.4	2	2
<u>Price of cattle</u>				
Price paid per 100 pounds	\$27.49	\$30.70	\$26.33	\$22.02
Price received per 100 pounds	25.32	22.81	21.90	24.22
Price spread per 100 pounds	-2.17	-7.89	-4.43	2.20
<u>Cost and returns per 100 lbs. gain</u>				
Value produced	\$23.88	\$17.10	\$19.69	\$26.42
Feed costs	<u>16.86</u>	<u>15.92</u>	<u>15.96</u>	<u>18.17</u>
Return over feed costs	\$ 7.02	\$ 1.18	\$ 3.73	\$ 8.25
Return over feed cost from price spread	\$-1.43	\$-5.71	\$-2.21	\$ 2.20
Return over feed cost from feeding	8.45	6.91	5.94	6.05
Return per \$100 feed cost	\$144	\$112	\$134	\$150
Estimated costs other than feed and labor**	\$3.22	\$3.75	\$3.36	\$2.81
Estimated return to labor and management	3.80	-2.57	0.32	5.44
<u>Returns to labor</u>				
Estimated hours of labor**	1.61	1.43	1.36	1.43
Estimated return per hour of labor	\$2.36	\$-1.80	\$0.24	\$3.80
Estimated return per head to labor & mgt.	\$20.29	\$-14.96	\$1.82	\$29.32

+ Hasbargen, P. R., and Pond, G. A., "Planning Farms for Increased Profits," University of Minnesota Station Bulletin 445, December 1957, p. 24.

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

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

Table 10. A four-year comparison of feeder cattle costs and returns (continued)

Item	Long-fed yearlings			
	1961-62 average 11 lots	1962-63 average 10 lots	1963-64 average 10 lots	1964-65 average 9 lots
<u>Number and weight of cattle fed</u>				
Number of head bought	99	39	91	97
Days on farm	303	307	311	296
Days on pasture	21	-	3	10
Percent death loss	1.2	0.2	0.8	0.5
Average purchase weight, lbs.	570	639	589	592
Average sales weight, lbs.	1011	1088	1132	1054
Gain per head, lbs.	441	448	543	462
Gain per head per day, lbs.	1.5	1.5	1.8	1.6
Pounds beef produced per lot	46644	17903	48617	58130
<u>Feed used per 100 lbs. gain</u>				
Corn, lbs.	581	598	613	520
Small grain, lbs.	3	3	5	18
Commercial feed, lbs.	56	47	55	47
Total concentrates, lbs.	640	648	673	585
Legume hay, lbs.	215	341	345	228
Other hay and stover, lbs.	34	4	29	12
Total dry roughage, lbs.	249	345	374	240
Silage, lbs.	732	939	374	570
Pasture, days	7	-	5	2
<u>Price of cattle</u>				
Price paid per 100 pounds	\$24.73	\$26.13	\$25.47	\$20.26
Price received per 100 pounds	23.86	22.80	21.83	23.04
Price spread per 100 pounds	-.87	-3.33	-3.64	2.78
<u>Cost and returns per 100 lbs. gain</u>				
Value produced	\$23.05	\$19.10	\$18.14	\$27.03
Feed costs	17.94	20.12	18.42	18.71
Return over feed costs	\$ 5.11	\$-1.02	\$-0.28	\$ 8.32
Return over feed cost from price spread	\$-0.80	\$-3.70	\$-3.69	\$ 3.99
Return over feed cost from feeding	5.91	2.68	3.41	4.33
Return per \$100 feed cost	\$133	\$ 97	\$ 98	\$145
Estimated costs other than feed and labor ^{†*}	\$3.57	\$3.47	\$3.27	\$3.21
Estimated return to labor and management	1.54	-4.49	-3.51	5.11
<u>Returns to labor</u>				
Estimated hours of labor ^{**}	1.39	1.39	1.23	1.39
Estimated return per hour of labor	\$1.11	\$-3.23	\$-2.85	\$3.68
Estimated return per head to labor & mgt.	\$6.79	\$20.11	\$-19.05	\$30.25

Table 10. A four-year comparison of feeder cattle costs and returns (continued)

Item	Short-fed yearlings			
	1961-62 average 22 lots	1962-63 average 12 lots	1963-64 average 15 lots	1964-65 average 10 lots
<u>Number and weight of cattle fed</u>				
Number of head bought	72	90	62	72
Days on farm	175	194	195	193
Days on pasture	9	1.7	-	3
Percent death loss	1.4	0.6	0.5	0.8
Average purchase weight, lbs.	692	720	675	668
Average sales weight, lbs.	1008	1088	1057	1055
Gain per head, lbs.	316	368	382	386
Gain per head per day, lbs.	1.8	1.9	2.0	2.0
Pounds beef produced per lot	23807	32094	24298	25369
<u>Feed used per 100 lbs. gain</u>				
Corn, lbs.	763	746	600	565
Small grain, lbs.	6	4	3	12
Commercial feed, lbs.	59	71	48	51
Total concentrates, lbs.	<u>828</u>	<u>821</u>	<u>651</u>	<u>628</u>
Legume hay, lbs.	252	183	292	162
Other hay and stover, lbs.	26	8	38	10
Total dry roughage, lbs.	<u>278</u>	<u>191</u>	<u>330</u>	<u>172</u>
Silage, lbs.	552	506	633	964
Pasture, days	3	0.4	-	0.7
<u>Price of cattle</u>				
Price paid per 100 pounds	\$22.77	\$24.83	\$20.73	\$17.83
Price received per 100 pounds	23.70	21.36	19.82	22.29
Price spread per 100 pounds	.93	-3.47	-0.91	4.46
<u>Cost and returns per 100 lbs. gain</u>				
Value produced	\$25.97	\$14.95	\$18.83	\$29.81
Feed costs	<u>20.56</u>	<u>20.31</u>	<u>18.37</u>	<u>19.74</u>
Return over feed costs	\$ 5.41	\$-5.36	\$ 0.46	\$10.07
Return over feed cost from price spread	\$ 2.28	\$-6.41	\$-0.99	\$ 7.52
Return over feed cost from feeding	3.13	1.05	1.45	2.55
Return per \$100 feed cost	\$130	\$ 76	\$102	\$154
Estimated costs other than feed and labor**	\$3.40	\$2.71	\$2.57	\$3.01
Estimated return to labor and management	2.01	-8.07	-2.11	7.06
<u>Return to labor</u>				
Estimated hours of labor**	1.36	1.21	1.21	1.31
Estimated return per hour of labor	\$1.48	\$-6.67	\$-1.74	\$5.39
Estimated return per head to labor & mgt.	\$6.35	\$-29.70	\$-7.76	\$27.25

PROFITS PROSPECTS WORK SHEET

STEP 1. Determine cost of producing finished animal²

(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 _____ (%) = \$ _____
(interest rate for number of months on feed)

Miscellaneous costs³ _____ (lbs.gain) x \$0.90 (per cwt.) = \$ _____

Other overhead costs for equipment and shelter:
 _____ (lbs.gain) x \$0.95 (per cwt.) = \$ _____

(c) Total cost per head = \$ _____

STEP 2. Determine selling price you need to cover costs

Divide: $\frac{\text{total cost per head}}{\text{sales weight}} = \frac{\$ \text{_____}}{\text{cwt.}} = \$ \underline{\underline{\text{_____}}}$

STEP 3. Your estimated sale value of steer

_____ cwt. x \$ _____ (your estimated price) = \$ _____

Profit per head = \$ _____

2. Routh, Hal, 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.

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

Example of Determination of Total Cost and Necessary Selling Price

Long-fed steer calves - good to choice grade

STEP 1. Determine cost of producing finished animal

(a) Original cost per head = 415 lbs. @ \$22.02 per cwt. = \$ 91.38

(b) Feed and other costs per head 539 lbs. gain

<u>Feed cost</u>	<u>Amount fed</u> ⁴	<u>Price</u>	<u>Cost</u>
Corn, bu.	53 bu.	\$1.13	\$59.89
Small grains, bu.	2.8 bu.	.63	1.76
Supplement, lbs.	277 lbs.	.046	12.74
All hay, tons	0.75 tons	23.00	17.25
Silage, tons	1.04 tons	7.75	8.06
Pasture, days	12 days	.10	1.20

Total feed cost = \$100.90

Estimated other costs

Labor cost 7.71 hours per head x \$2.00 per hour = \$ 15.42
(80 head basis)

Interest: \$91.38 (original cost per head) x 6.5% = \$ 5.18
(number of days on farm = 318)

Miscellaneous costs: 539 lbs. gain x \$0.90 per cwt. = \$ 4.85
(includes only variable costs)

Other overhead costs for equipment and shelter:
539 lbs. gain x \$0.95 per cwt. = \$ 5.12

(c) Total cost per head = \$222.85

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

$$\frac{\text{Total cost per head}}{\text{Number of cwt. sold}} = \frac{\$222.85}{9.54} = \$23.36$$

4. See table 10 for feed requirements.

Table 11. Feed requirements based on 1964-1965 lot averages

Item	Long-fed calves	Long-fed yearlings	Short-fed yearlings
Number of lots	32	9	10
Purchase weight	415	592	668
Gain in weight	539	462	386
Days on farm	318	296	193
Gain per head per day	1.7	1.6	2.0
<u>Requirements per head</u>			
Corn, bu.	52.7	42.4	36.7
Small grain, bu.	4.8	2.5	1.7
Supplement, lbs.	237	213	185
All hay, tons	.60	.64	.35
Silage, tons	1.0	1.31	1.85
Pasture, days	7	10	3
Labor, hours	7.71	6.42	5.06
Interest, percent	6.5	6.5	6.5
<u>Requirements per cwt.</u>			
Miscellaneous cost	\$0.90	\$0.90	\$0.90
Overhead cost for shelter and equipment	0.95	0.95	0.95