

Cost and Return From Feeding Cattle

1967-1968

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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 primarily by two factors: (1) value produced per cwt. gain in weight, and (2) the feed cost per cwt. gain in weight. This is emphasized by this study of costs and returns for 36 lots of feeder cattle on 30 Southern Minnesota farms in the 1967-1968 feeding season. This information was obtained from records kept by 25 members of the Southwestern Minnesota Farm Management Association under the supervision of Erlin Weness and three members of the Southeastern Minnesota Farm Management Association under the supervision of Harvey Bjerke. In addition, two lot records were secured from Kermit Kleene, agriculture instructor in the New Ulm Public Schools. 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 as 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 or more 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.

* The author is indebted to Janet B. Otis, Barbara B. Miller, and Carl Pherson for their assistance in the preparation of this report.

PRICES

Monthly prices of feeder calves at South St. Paul from January 1967 through March 1969 are shown in Figure 1. Southern Minnesota farmers secure their feeder cattle from a variety of sources but the South St. Paul quotations are representative of price trends during this period.

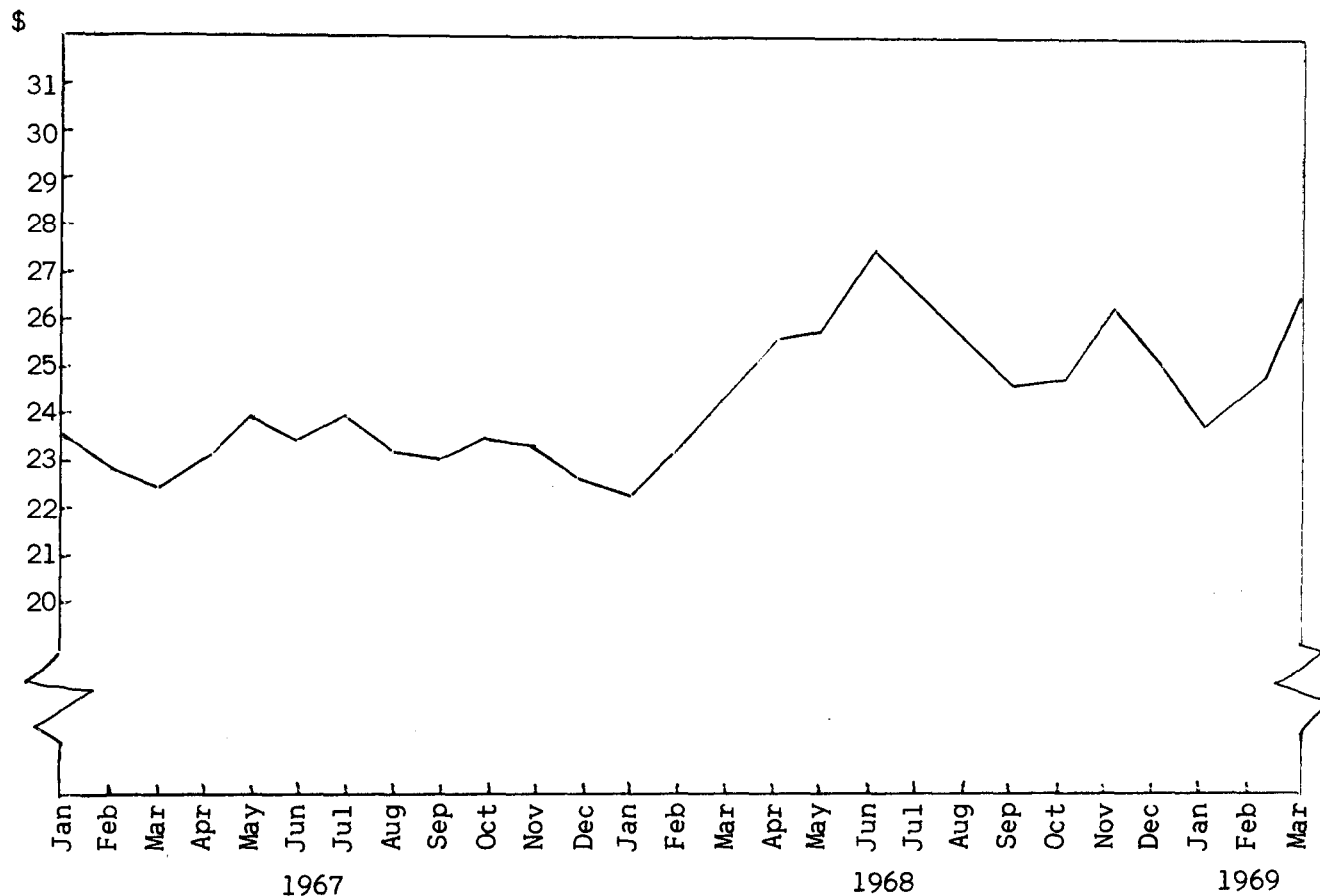


Figure 1. Average monthly prices paid per 100 pounds of feeder calves, South St. Paul, January 1967 - March 1969 (compiled from Market News - Livestock Division, USDA, Consumer and Marketing Service, 1967-1969).

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 1967 and 1968. 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	1967	1968
Alfalfa hay, per ton	\$20.00	\$20.00
Timothy or brome hay, per ton	11.60	11.60
Oats or hay silage, per ton	6.50	6.50
Corn silage, per ton	7.25	7.25
Corn grain, per bushel	1.10	1.02
Oats, per bushel	.63	.62
Soybean meal, per 100 pounds	5.00	5.10
Pasture, per month per head	4.00	4.00

NUMBERS AND WEIGHTS OF CATTLE FED

The individual lots of cattle for the 1967-1968 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 among the various feeding programs used by farmers included in this study.

Average death loss was 1.5 percent, 0.4 percent, and 0.7 percent for the long-fed calves, long-fed yearlings, and short-fed yearlings respectively.

Table 2. Range in numbers and weights for individual lots, 1967-1968

Item	21 lots long-fed calves			7 lots long-fed yearlings		
	Ave.	High	Low	Ave.	High	Low
Number of head in lot	152	341	33	95	208	22
Average purchase weight	393	484	350	579	703	509
Average sale weight	915	1082	709	1080	1195	989
Average gain in weight per head	522	688	359	501	571	459
Average daily gain per head	1.8	2.1	1.4	1.8	2.2	1.4

Item	8 lots short-fed yearlings		
	Ave.	High	Low
Number of head in lot	74	130	20
Average purchase weight	680	800	500
Average sale weight	1089	1261	956
Average gain in weight per head	409	518	177
Average daily gain per head	2.0	2.3	1.5

FEEDING DATA

Tables 3 through 5 present average data for each feeding program and report performance of individual lots in 1967-1968. The numbers and weights of cattle fed, total pounds produced, and feed costs and returns are given for the average lot in each of the three feeding programs. Per head and per hundred pounds gain averages are calculated for feed consumption, cattle prices, and feed costs and returns.

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

In tables 3, 4, and 5, "value produced" (line 28) is calculated by subtracting total purchase cost from the total sales and dividing by the number of head sold and the hundredweights of gain.

Two factors contribute to return over feed cost: price margin and gain. The contribution of each factor is illustrated on lines 31 and 32. Return from price spread (line 31) measures the price margin (selling price minus purchase price) plus the effect of the death loss. Return from feeding (line 32) measures gain, which is simply selling price minus the feed cost per 100 pounds of gain. The return per \$100 feed cost (line 33) is obtained by dividing the total value produced by the total feed cost.

Table 3. Feed costs and returns from long-fed calves, 1967-1968

Item	Average of		Individual lot nos.	
	21 lots		1	2
<u>Number and weight of cattle fed</u>				
1. Date of purchase			Nov 67	Nov 67
2. Number of head bought	152		265	33
3. Days on farm	290		264	309
4. Days on pasture	-		-	-
5. Percent death loss	1.5		0.8	0.0
6. Average purchase weight, lbs.	393		388	440
7. Average sales weight, lbs.	915		943	1045
8. Gain per head, lbs.	522		555	605
9. Gain per head per day, lbs.	1.8		2.1	2.0
10. Pounds of beef produced	80481		145249	19960
<u>Feed used</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn (bu/head) (lbs/cwt gain)*	51	503	410	457
12. Small grain (bu/head) (lbs/cwt)	1	7	2	-
13. Commercial feed, lbs.	259	47	43	46
14. Total concentrates, lbs.	3181	557	455	503
15. Legume hay, lbs.	673	121	107	-
16. Other hay, lbs.	48	7	7	68
17. Total dry roughage, lbs.	721	128	114	68
18. Corn silage, lbs.	3080	560	578	1045
19. Grass or oat silage, lbs.	133	27	-	-
20. Total silage, lbs.	3213	587	578	1045
21. Pasture, days	-	-	-	-
<u>Price of cattle</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$117.52	\$27.15	\$28.75	\$30.00
23. Price received	254.01	25.03	27.24	27.92
24. Price spread or gross margin	136.49	-2.12	-1.51	-2.08
<u>Cost and return</u>				
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25. Total value produced	\$19877	\$38015	\$5271	
26. Total feed cost	12845	19146	2877	
27. Total return over feed	7032	18869	2394	
<u>Cost and return</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$134.72	\$23.56	\$26.17	\$26.41
29. Feed costs	86.86	15.36	13.18	14.42
30. Return over feed cost	47.86	8.20	12.99	11.99
31. Return over feed cost from price spread		-1.47	-1.07	-1.51
32. Return over feed cost from feeding		9.67	14.06	13.50
33. Return per \$100 of feed cost		\$147	\$198	\$183

* All cwt. calculations are per hundred pounds gain in weight.

Table 3. Feed costs and returns from long-fed calves, 1967-1968 (continued)

Item	Individual lot numbers			
	3	4	5	6
<u>Number and weight of cattle fed</u>				
1. Date of purchase	Oct 67	Nov 67	Nov 67	Varied
2. Number of head bought	118	241	312	127
3. Days on farm	287	228	310	212
4. Days on pasture	-	-	-	-
5. Percent death loss	0.0	6.6	2.9	2.4
6. Average purchase weight, lbs.	452	436	401	418
7. Average sales weight, lbs.	973	872	999	863
8. Gain per head, lbs.	521	436	598	445
9. Gain per head per day, lbs.	1.8	1.9	1.9	2.1
10. Pounds of beef produced	61475	91179	177605	53980
<u>Feed used</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn, lbs./cwt. gain	547	583	441	517
12. Small grain, lbs.	-	-	10	-
13. Commercial feed, lbs.	39	35	51	55
14. Total concentrates, lbs.	586	618	502	572
15. Legume hay, lbs.	231	103	124	166
16. Other hay, lbs.	-	-	-	-
17. Total dry roughage, lbs.	231	103	124	166
18. Corn silage, lbs.	364	667	732	404
19. Grass or oat silage, lbs.	-	-	-	-
20. Total silage, lbs.	364	667	732	404
21. Pasture, days	-	-	-	-
<u>Price of cattle</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$26.21	\$24.50	\$29.06	\$23.85
23. Price received	26.66	26.47	26.80	25.07
24. Price spread or gross margin	+45	+1.97	-2.26	+1.22
<u>Cost and return</u>				
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25. Total value produced	\$16630	\$26202	\$44841	\$14183
26. Total feed cost	9376	15477	25769	8406
27. Total return over feed	7254	10725	19072	5777
<u>Cost and return</u>				
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$27.05	\$28.73	\$25.25	\$26.27
29. Feed costs	15.25	16.97	14.51	15.57
30. Return over feed cost	11.80	11.76	10.74	10.70
31. Return over feed cost from price spread	.39	2.26	-1.55	1.20
32. Return over feed cost from feeding	11.41	9.50	12.29	9.50
33. Return per \$100 of feed cost	\$177	\$169	\$174	\$169

Table 3. Feed costs and returns from long-fed calves, 1967-1968 (continued)

		Individual lot numbers					
		7	8	9	10	11	12
1.	Nov 67	Oct 67	Oct 67	Nov 67	Varied	Dec 67	
2.	202	125	105	73	89	65	
3.	300	354	327	291	265	241	
4.	-	-	-	-	-	-	
5.	0.5	0.0	0.0	0.0	2.2	0.0	
6.	419	396	394	418	483	452	
7.	1029	1078	1082	983	1013	845	
8.	610	682	688	565	530	393	
9.	2.0	1.9	2.1	1.9	2.0	1.6	
10.	122287	85245	72270	41281	45165	25490	
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11.	497	495	486	469	527	574	
12.	-	-	4	8	-	3	
13.	33	25	37	38	36	85	
14.	530	520	527	515	563	662	
15.	100	53	111	155	104	31	
16.	17	-	-	12	-	-	
17.	117	53	111	167	104	31	
18.	495	727	442	484	921	392	
19.	-	218	-	-	-	118	
20.	495	945	442	484	921	510	
21.	-	-	-	-	-	-	
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22.	\$28.95	\$31.00	\$32.90	\$28.71	\$27.96	\$26.20	
23.	26.60	27.06	27.63	27.17	26.15	25.99	
24.	-2.35	-3.94	-5.27	-1.54	-1.81	-.21	
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25.	\$30541	\$21122	\$17791	\$10746	\$11031	\$6565	
26.	17793	12760	10764	6741	7189	4568	
27.	12748	8362	7027	4005	3842	1997	
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28.	\$24.97	\$24.78	\$24.61	\$26.03	\$24.42	\$25.75	
29.	14.55	14.96	14.89	16.33	15.92	17.92	
30.	10.42	9.82	9.72	9.70	8.50	7.83	
31.	-1.63	-2.28	-3.02	-1.14	-1.73	-.24	
32.	12.05	12.10	12.74	10.84	10.23	8.07	
33.	\$172	\$166	\$165	\$159	\$153	\$144	

Table 3. Feed costs and returns from long-fed calves, 1967-1968 (continued)

Item	Individual lot numbers		
	13	14	15
<u>Number and weight of cattle fed</u>			
1. Date of purchase	Oct 67	Nov 67	Nov 67
2. Number of head bought	211	203	334
3. Days on farm	316	283	316
4. Days on pasture	-	-	-
5. Percent death loss	2.4	1.0	3.1
6. Average purchase weight, lbs.	371	396	380
7. Average sales weight, lbs.	973	880	942
8. Gain per head, lbs.	602	484	562
9. Gain per head per day, lbs.	1.9	1.7	1.8
10. Pounds of beef produced	122220	96489	178415
<u>Feed used</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn, lbs./cwt. gain	476	550	563
12. Small grain, lbs.	40	-	8
13. Commercial feed, lbs.	61	37	39
14. Total concentrates, lbs.	577	587	610
15. Legume hay, lbs.	215	116	146
16. Other hay, lbs.	3	21	-
17. Total dry roughage, lbs.	218	137	146
18. Corn silage, lbs.	812	537	843
19. Grass or oat silage, lbs.	-	-	-
20. Total silage, lbs.	812	537	843
21. Pasture, days	-	-	-
<u>Price of cattle</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$31.36	\$27.49	\$30.37
23. Price received	26.64	25.41	26.56
24. Price spread or gross margin	-4.72	-2.08	-3.81
<u>Cost and return</u>			
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25. Total value produced	\$28859	\$22840	\$42568
26. Total feed cost	19420	15545	29718
27. Total return over feed	9439	7295	12850
<u>Cost and return</u>			
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$23.61	\$23.67	\$23.86
29. Feed costs	15.89	16.11	16.66
30. Return over feed cost	7.72	7.56	7.20
31. Return over feed cost from price spread	-3.03	-1.74	-2.70
32. Return over feed cost from feeding	10.75	9.30	9.90
33. Return per \$100 of feed cost	\$148	\$147	\$143

Table 3. Feed costs and returns from long-fed calves, 1967-1968 (continued)

		Individual lot numbers					
		16	17	18	19	20	21
1.	Oct 67		Nov 67	Oct 67	Dec 67	Nov 67	Dec 67
2.	226		111	86	50	341	72
3.	307		309	360	306	244	253
4.	-		-	-	-	-	-
5.	0.9		2.7	0.0	2.0	1.5	2.8
6.	368		404	373	455	484	350
7.	963		977	1005	1064	1005	709
8.	595		573	632	609	521	359
9.	1.9		1.9	1.8	2.0	2.1	1.4
10.	132704		60660	54350	29370	172590	24400
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11.	710		502	679	624	697	259
12.	-		-	30	-	11	34
13.	42		65	71	52	68	60
14.	752		567	780	676	776	353
15.	59		307	191	63	17	238
16.	45		-	-	-	-	-
17.	104		307	191	63	17	238
18.	-		432	250	170	325	1639
19.	-		-	-	-	17	213
20.	-		432	250	170	342	1852
21.	-		-	-	-	-	-
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22.	\$31.68		\$27.22	\$27.83	\$30.50	\$26.04	\$28.57
23.	26.44		25.34	26.46	25.52	24.63	24.60
24.	-5.24		-1.88	-1.37	-4.98	-1.41	-3.97
	<u>Lot</u>		<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25.	\$30727		\$14526	\$13945	\$6364	\$40181	\$5000
26.	21328		10388	10382	4608	30839	4435
27.	9399		4138	3563	1756	9342	565
	<u>Cwt.</u>		<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28.	\$23.15		\$23.94	\$25.66	\$21.67	\$23.28	\$20.49
29.	16.07		17.12	19.10	15.69	17.87	18.17
30.	7.08		6.82	6.56	5.98	5.41	2.32
31.	-3.29		-1.40	-0.80	-3.85	-1.35	-4.11
32.	10.37		8.22	7.36	9.83	6.76	6.43
33.	\$144		\$140	\$134	\$139	\$130	\$113

Table 4. Feed costs and returns from long-fed yearlings, 1967-1968

Item	Average of 7 lots	Individual lot nos. 22	
<u>Number and weight of cattle fed</u>			
1. Date of purchase		Varied	
2. Number of head bought	95	123	
3. Days on farm	279	245	
4. Days on pasture	36	-	
5. Percent death loss	0.4	0.8	
6. Average purchase weight, lbs.	579	703	
7. Average sales weight, lbs.	1080	1195	
8. Gain per head, lbs.	501	492	
9. Gain per head per day, lbs.	1.8	2.0	
10. Pounds of beef produced	47468	59385	
<u>Feed used</u>			
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn (bu/head) (lbs/cwt gain)	48.4	544	459
12. Small grain (bu/head) (lbs/cwt)	2.7	17	-
13. Commercial feed, lbs.	222	45	45
14. Total concentrates, lbs.	3020	606	504
15. Legume hay, lbs.	1003	207	184
16. Other hay, lbs.	44	9	-
17. Total dry roughages, lbs.	1047	216	184
18. Corn silage, lbs.	2819	540	606
19. Grass or oat silage, lbs.	37	7	-
20. Total silage, lbs.	2856	547	606
21. Pasture, days	10	2	-
<u>Price of cattle</u>			
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$157.54	\$27.25	\$25.52
23. Price received	285.79	26.42	27.12
24. Price spread or gross margin	128.25	-.83	+1.60
<u>Cost and return</u>			
		<u>Cwt.</u>	<u>Cwt.</u>
25. Total value produced		\$12064	\$17492
26. Total feed cost		7756	8890
27. Total return over feed		4308	8602
<u>Cost and return</u>			
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$127.60	\$25.53	\$29.45
29. Feed costs	88.05	17.69	14.97
30. Return over feed cost	39.55	7.84	14.48
31. Return over feed cost from price spread		-.89	2.33
32. Return over feed cost from feeding		8.73	12.15
33. Return per \$100 of feed cost		\$144	\$197

Table 4. Feed costs and returns from long-fed yearlings, 1967-1968 (concluded)

		Individual lot numbers					
		23	24	25	26	27	28
1.	Apr 67	Varied	Jan 68	Jul 67	Sep 67	Jun 67	
2.	55	94	110	208	50	22	
3.	336	250	345	240	252	284	
4.	68	-	-	-	-	184	
5.	0.0	2.1	0.0	0.0	0.0	0.0	
6.	509	531	530	568	613	600	
7.	989	1073	1101	1056	1072	1078	
8.	480	542	571	488	459	478	
9.	1.4	2.2	1.6	2.0	1.8	1.7	
10.	26407	48779	62744	101480	22970	10525	
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11.	454	585	539	483	607	680	
12.	18	-	24	24	56	-	
13.	57	29	44	25	72	42	
14.	529	614	607	532	735	722	
15.	212	141	64	15	418	418	
16.	-	-	19	-	44	-	
17.	212	141	83	15	462	418	
18.	-	681	1214	1280	-	-	
19.	-	49	-	-	-	-	
20.	-	730	1214	1280	-	-	
21.	14	-	-	-	-	4	
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22.	\$23.71	\$27.53	\$29.50	\$30.31	\$25.75	\$28.42	
23.	25.07	26.99	27.85	26.51	25.35	26.05	
24.	+1.36	-0.54	-1.65	-3.80	-.40	-2.37	
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25.	\$7001	\$12901	\$16513	\$22416	\$5702	\$2428	
26.	4161	8009	11069	14907	4768	2488	
27.	2840	4892	5444	7509	934	-60	
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28.	\$26.51	\$26.45	\$26.32	\$22.09	\$24.82	\$23.07	
29.	15.75	16.42	17.64	14.69	20.76	23.64	
30.	10.76	10.03	8.68	7.40	4.06	-.57	
31.	1.44	-.54	-1.53	-4.42	-0.53	-2.98	
32.	9.32	10.57	10.21	11.82	4.59	2.41	
33.	\$168	\$161	\$149	\$150	\$120	\$ 98	

Table 5. Feed costs and returns from short-fed yearlings, 1967-1968

Item	Average of		Individual lot nos.	
	8 lots		29	30
<u>Number and weight of cattle fed</u>				
1. Date of purchase			Varied	Nov 67
2. Number of head bought	74		113	30
3. Days on farm	206		227	233
4. Days on pasture	0.9		-	-
5. Percent death loss	0.7		0.9	0.0
6. Average purchase weight, lbs.	680		500	598
7. Average sales weight, lbs.	1089		1018	1057
8. Gain per head, lbs.	409		518	459
9. Gain per head per day, lbs.	2.0		2.3	2.0
10. Pounds of beef produced	30507		57525	13765
<u>Feed used</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11. Corn (bu/head) (lbs/cwt gain)	44	664	523	473
12. Small grain, lbs.	-	-	-	-
13. Commercial feed, lbs.	178	46	52	40
14. Total concentrates, lbs.	2628	710	575	513
15. Legume hay, lbs.	830	222	156	256
16. Other hay, lbs.	32	8	-	-
17. Total dry roughage, lbs.	862	230	156	256
18. Corn silage, lbs.	2422	574	-	1278
19. Grass or oat silage, lbs.	-	-	-	-
20. Total silage, lbs.	2422	574	-	1278
21. Pasture, days	0.9	0.2	-	-
<u>Price of cattle</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22. Price paid	\$171.79	\$25.29	\$25.82	\$22.43
23. Price received	278.38	25.60	26.13	25.67
24. Price spread or gross margin	106.59	+ .31	+ .31	+ 3.24
<u>Cost and return</u>				
		<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25. Total value produced		\$7795	\$15206	\$4112
26. Total feed cost		5338	8337	2486
27. Total return over feed		2457	6869	1626
<u>Cost and return</u>				
	<u>Head</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28. Value produced	\$105.15	\$26.15	\$26.43	\$29.87
29. Feed costs	73.13	19.28	14.49	18.06
30. Return over feed cost	32.02	6.87	11.94	11.81
31. Return over feed cost from price spread		.55	.30	4.20
32. Return over feed cost from feeding		6.32	11.64	7.61
33. Return per \$100 of feed cost		\$142	\$182	\$165

Table 5. Feed costs and returns from short-fed yearlings, 1967-1968 (concluded)

	Individual lot numbers					
	31	32	33	34	35	36
1.	Jan 68	Sep 67	Sep 67	Sep 67	Sep 67	Jun 68
2.	20	130	100	101	44	58
3.	199	237	201	212	214	121
4.	-	-	-	7	-	-
5.	5.0	0.0	1.0	0.0	0.0	0.0
6.	800	720	688	750	603	779
7.	1261	1117	1074	1224	1003	956
8.	461	397	386	474	400	177
9.	2.3	1.7	1.9	2.2	1.9	1.5
10.	7960	51520	37515	47850	17605	10315
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
11.	602	641	451	665	612	1346
12.	-	-	-	-	-	-
13.	36	47	12	34	78	67
14.	638	688	463	699	690	1413
15.	352	380	104	63	76	388
16.	-	-	38	23	-	-
17.	352	380	142	86	76	388
18.	-	388	795	602	1528	-
19.	-	-	-	-	-	-
20.	-	388	795	602	1528	-
21.	-	-	-	2	-	-
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
22.	\$20.00	\$25.50	\$28.18	\$29.99	\$25.18	\$25.25
23.	22.74	26.63	25.88	27.04	25.18	25.53
24.	+2.74	+1.13	-2.30	-2.95	0.00	+2.28
	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>	<u>Lot</u>
25.	\$2249	\$14777	\$8123	\$10704	\$4432	\$2760
26.	1424	9958	5482	7979	3742	3294
27.	825	4819	2641	2725	690	-534
	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>	<u>Cwt.</u>
28.	\$28.25	\$28.68	\$21.65	\$22.37	\$25.18	\$26.75
29.	17.89	19.33	14.61	16.67	21.26	31.93
30.	10.36	9.35	7.04	5.70	3.92	-5.18
31.	5.51	2.05	-4.23	-4.67	0.00	1.22
32.	4.85	7.30	11.27	10.37	3.92	-6.40
33.	\$158	\$148	\$148	\$134	\$118	\$ 84

COMPARISON OF SELECTED FACTORS FOR THE
DIFFERENT CATTLE FEEDING PROGRAMS

Table 6 compares the three feeding alternatives with respect to buying and selling price, feed costs, returns over feed costs, average purchase weights, and average gains per head.

Generally, calves command a higher purchase price than yearlings but they are fed for a longer period for more gain in weight and put on gain at less cost per pound. Short-fed yearlings must be bought for a lower price per pound than calves because of their higher initial weight and because feed costs per cwt. gain in weight are higher on heavier cattle than is true for calves.

Table 6. Returns from price spread from feeding, 1967-1968

Item	Long-fed calves 21 lots	Long-fed yearlings 7 lots	Short-fed yearlings 8 lots
Purchase price per 100 pounds	\$27.15	\$27.25	\$25.29
Sale price per 100 pounds	\$25.03	\$26.42	\$25.60
Total value produced per 100 pounds	\$23.56	\$25.53	\$26.15
Feed cost per 100 pounds	\$15.36	\$17.69	\$19.28
Return over feed cost per 100 pounds	\$ 8.20	\$ 7.84	\$ 6.87
Average purchase weight	393	579	680
Pounds gain per head	522	501	409
Pounds gain per head per day	1.8	1.8	2.0

DETERMINING PROFIT PROSPECTS

Profit prospects for the coming feeding season can be calculated by using the work sheet on page 19. 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. Feeders will want to use their own estimates of labor, feed, and other costs when records are available. For farmers who do not have records, the averages shown in table 7 and 8 of this report will provide data which can be used.

Table 7. Average feeder requirements based on 1964-1968 lot averages

Item	Long-fed calves	Long-fed yearlings	Short-fed yearlings
Purchase weight	408	582	670
Gain in weight	551	504	393
Days on farm	307	283	196
Gain per head per day	1.8	1.8	2.0
<u>Requirements per head</u>			
Corn, bu.	53.0	51.6	43.3
Oats, bu.	2.8	3.4	.5
Supplement, lbs.	270	226	203
All hay, tons	.54	.58	.38
Silage, tons	1.33	1.45	1.24
Pasture, days	5	13	4
Labor, hours ¹	7.1	5.8	3.9
Interest, percent	7.0	7.0	7.0
<u>Requirements per cwt.²</u>			
Miscellaneous costs	\$1.10	\$1.10	\$1.10
Overhead cost for shelter and equipment	1.20	1.20	1.20

1. Source: Johnson, R. G. and T. R. Nodland, "Labor Used in Cattle Feeding," Station Bulletin 451, University of Minnesota Agricultural Experiment Station, March 1960, pp. 12-15. (Based on 100 head per lot.)

2. Adapted from "Cattle Feeder's Planning Guide," Agricultural Extension Service, University of Minnesota, September 1966.

Table 8. A four-year comparison of feeder cattle feed costs and returns

Item	Long-fed calves			
	1964-65 average 32 lots	1965-66 average 28 lots	1966-67 average 31 lots	1967-68 average 21 lots
<u>Number and weight of cattle fed</u>				
Number of head bought	109	135	118	152
Days on farm	318	317	311	290
Days on pasture	7	12	2	-
Percent death loss	0.9	1.4	2.0	1.5
Average purchase weight, lbs.	415	420	407	393
Average sales weight, lbs.	954	976	995	915
Gain per head, lbs.	539	556	588	522
Gain per head per day, lbs.	1.7	1.8	1.9	1.8
Pounds of beef produced per lot	58130	73818	65643	80481
<u>Feed used per 100 lbs. gain</u>				
Corn, lbs.	555	584	513	503
Small grain, lbs.	31	19	11	7
Commercial feed, lbs.	44	59	47	47
Total concentrates, lbs.	630	662	571	557
Legume hay, lbs.	227	184	215	121
Other hay and stover, lbs.	3	12	11	7
Total dry roughage, lbs.	230	196	226	128
Silage, lbs.	369	557	411	587
Pasture, days	2	3	0.3	-
<u>Price of cattle</u>				
Price paid per 100 lbs.	\$22.02	\$24.80	\$28.13	\$27.15
Price received per 100 lbs.	24.22	24.55	25.26	25.03
Price spread per 100 lbs.	2.20	-.25	-2.87	-2.12
<u>Cost and returns per 100 lbs. gain</u>				
Value produced	\$26.42	\$24.83	\$23.18	\$23.56
Feed costs	18.17	20.09	17.21	15.36
Return over feed costs	\$ 8.25	\$ 4.74	\$ 5.97	\$ 8.20
Return over feed cost from price spread	\$ 2.20	\$ 0.28	\$ -2.08	\$ -1.47
Return over feed cost from feeding	6.05	4.46	8.05	9.67
Return per \$100 feed cost	\$150	\$124	\$135	\$147
Estimated costs other than feed and labor*	\$ 2.81	\$ 2.91	\$ 2.93	\$ 3.44
Estimated return to labor and mgmt.	5.44	1.83	3.04	4.76

* Interest charge adjusted according to purchase value and time period lot was held. Rates used were 6.5 percent for the 1964-67 and 7 percent for the 1967-68 feeding period.

Table 8. A four-year comparison of feeder cattle feed costs and returns (cont'd)

Item	Long-fed yearlings			
	1964-65 average 9 lots	1965-66 average 7 lots	1966-67 average 11 lots	1967-68 average 7 lots
<u>Number and weight of cattle fed</u>				
Number of head bought	97	103	119	95
Days on farm	296	276	280	279
Days on pasture	10	3	4	36
Percent death loss	0.5	1.5	1.3	0.4
Average purchase weight, lbs.	592	573	584	579
Average sales weight, lbs.	1054	1092	1119	1080
Gain per head, lbs.	462	519	535	501
Gain per head per day, lbs.	1.6	1.9	1.9	1.8
Pounds of beef produced per lot	58130	51668	60175	47468
<u>Feed used per 100 pounds gain</u>				
Corn, lbs.	520	607	623	544
Small grain, lbs.	18	40	11	17
Commercial feed, lbs.	47	39	48	45
Total concentrates, lbs.	585	686	682	606
Legume hay, lbs.	228	209	171	207
Other hay, lbs.	12	35	52	9
Total dry roughage, lbs.	240	244	223	216
Silage, lbs.	570	703	497	547
Pasture, days	2	0.6	0.9	2
<u>Price of cattle</u>				
Price paid per 100 pounds	\$20.26	\$24.19	\$25.67	\$27.25
Price received per 100 pounds	23.04	25.47	24.51	26.42
Price spread per 100 pounds	2.78	1.28	-1.16	-.83
<u>Cost and returns per 100 pounds gain</u>				
Value produced	\$27.03	\$27.00	\$23.56	\$25.53
Feed costs	18.71	21.65	19.79	17.69
Return over feed costs	\$ 8.32	\$ 5.35	\$ 3.77	\$ 7.84
Return over feed cost from price spread	\$ 3.99	\$ 1.53	\$-0.95	\$-0.89
Return over feed cost from feeding	4.33	3.82	4.72	8.73
Return per \$100 of feed cost	\$145	\$128	\$119	\$149
Estimated costs other than feed and labor	\$3.21	\$3.17	\$3.25	\$3.97
Estimated return to labor and mgmt.	5.11	2.18	.52	3.87

Table 8. A four-year comparison of feeder cattle feed costs and returns (concl.)

Item	Short-fed yearlings			
	1964-65 average 10 lots	1965-66 average 11 lots	1966-67 average 8 lots	1967-68 average 8 lots
<u>Number and weight of cattle fed</u>				
Number of head bought	72	88	88	74
Days on farm	193	182	204	206
Days on pasture	3	-	12	1
Percent death loss	0.8	0.6	0.3	0.9
Average purchase weight, lbs.	669	700	633	680
Average sales weight, lbs.	1055	1068	1043	1089
Gain per head, lbs.	386	368	410	409
Gain per head per day, lbs.	2.0	2.0	2.0	2.0
Pounds of beef produced per lot	25369	32146	36246	30507
<u>Feed used per 100 pounds gain</u>				
Corn, lbs.	565	685	609	664
Small grain, lbs.	12	2	1	-
Commercial feed, lbs.	<u>51</u>	<u>62</u>	<u>46</u>	<u>46</u>
Total concentrates, lbs.	628	749	656	710
Legume hay, lbs.	162	198	163	222
Other hay, lbs.	<u>10</u>	<u>21</u>	<u>3</u>	<u>8</u>
Total dry roughage, lbs.	172	219	166	230
Silage, lbs.	964	674	335	574
Pasture, days	0.7	-	3.7	-
<u>Price of cattle</u>				
Price paid per 100 pounds	\$17.83	\$22.79	\$25.32	\$25.29
Price received per 100 pounds	22.29	24.16	23.42	25.60
Price spread per 100 pounds	4.46	1.37	-1.90	.31
<u>Cost and returns per 100 pounds gain</u>				
Value produced	\$29.81	\$27.69	\$20.51	\$26.15
Feed costs	<u>19.74</u>	<u>22.51</u>	<u>18.80</u>	<u>19.28</u>
Return over feed costs	\$10.07	\$ 5.18	\$ 1.71	\$ 6.87
Return over feed cost from price spread	\$ 7.52	\$ 3.53	\$-2.91	\$.55
Return over feed cost from feeding	2.55	1.65	4.62	6.32
Return per \$100 feed cost	\$154	\$127	\$109	\$136
Estimated costs other than feed and labor	\$3.01	\$3.26	\$3.27	\$3.96
Estimated return to labor and mgmt.	7.06	1.92	-1.56	2.91

PROFITS PROSPECTS WORK SHEET

STEP 1. Determine cost of producing finished animal

(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			= \$ _____

Other costs - estimated

Labor cost _____ (hrs per head) x \$ _____ (per hour) = \$ _____

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

Miscellaneous costs _____ (lbs gain) x \$1.10 (per cwt.) = \$ _____

Other overhead costs for equipment and shelter:
 _____ (lbs gain) x \$1.20 (per cwt.) = \$ _____

(c) Total cost per head = \$ _____

STEP 2. Determine selling price you need to cover costs

Divide: $\frac{\text{total cost per head}}{\text{sales weight in cwt.}} = \frac{\$ \text{_____}}{\text{cwt.}} = \$ \underline{\underline{\hspace{2cm}}}$

STEP 3. Your estimated sale value of steer

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

Profit per head = \$ _____

Example of Determination of Total Cost and Necessary Selling Price

Long-fed calves--good to choice grade

STEP 1. Determine cost of producing finished animal

(a) Original cost per head = 393 lbs. @ \$27.15 per cwt.¹ \$106.70

(b) Feed and other costs per head 522 lbs. gain

<u>Feed cost</u>	<u>Amount fed</u> ²	<u>Price</u>	<u>Cost</u>
Corn, bu.	53.0 bu.	\$1.02	\$54.06
Oats, bu.	2.8 bu.	.62	1.74
Supplement, lbs.	270 lbs.	.05	13.50
All hay, tons	.54 tons	20.00	10.80
Silage, tons	1.33 tons	7.25	9.64
Pasture, days	5 days	.13	.65
Total feed cost			90.39

Other costs - estimated

Labor cost: 7.1 hours per head x \$2.00 per hour
(100 head basis) 14.20

Interest: \$106.70 (original cost per head) x 7%
(number of days on farm = 307 = .84 year) 6.27

Miscellaneous costs: 522 lbs. gain x \$1.10 per cwt.
(includes only variable costs) 5.74

Other overhead costs for equipment and shelter
(522 lbs gain x \$1.20 per cwt.) 6.26

(c) Total cost per head \$229.56

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

$$\frac{\text{Total cost per head}}{\text{Number of cwt. sold}} = \frac{229.56}{9.15} = \$25.09 = \text{price needed to cover all costs}$$

1. Gain in weight and price based on data in table 8 for the 1967-68 feeding period.

2. Based on data contained in table 7.