AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

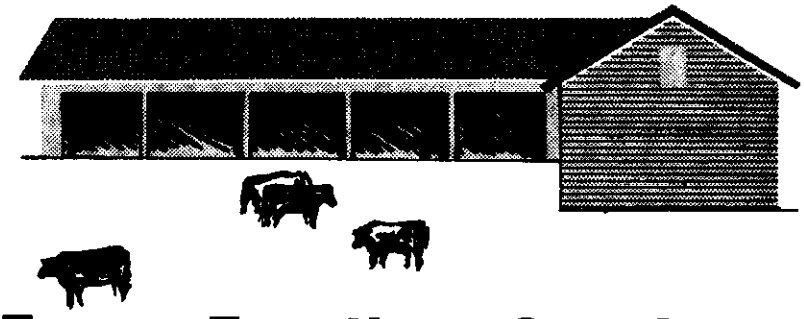
Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Report No. 292 July 1967
Department of Agricultural Economics
Institute of Agriculture
University of Minnesota
St. Paul, Minnesota 55101



Cost and Return From Feeding Cattle

1965-1966

Cooperating agencies:

University of Minnesota, Institute of Agriculture
United States Department of Agriculture, Economic Research Service

FEEDER CATTLE COSTS AND RETURNS
1965-1966

C. L. Pherson and T. R. Nodland

	Page
Introduction	1
Prices	1
Numbers and Weights of Cattle Fed	3
Feeding Data Presented	4
Long-fed Calves, 1965-1966	5
Long-fed Yearlings, 1965-1966	12
Short-fed Yearlings, 1965-1966	15
Comparison of Returns from Price Spread from Feeding for the Different Cattle Feeding Programs	17
Labor Requirements for Feeding Cattle	17
Determining Profit Prospects	18
Feed Requirements	18
Four-year Comparison of Feeder Cattle Costs and Returns	19

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 46 lots of feeder cattle on Southern Minnesota farms in the 1965-1966 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 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 1965 through May 1967 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.

1100/7/67

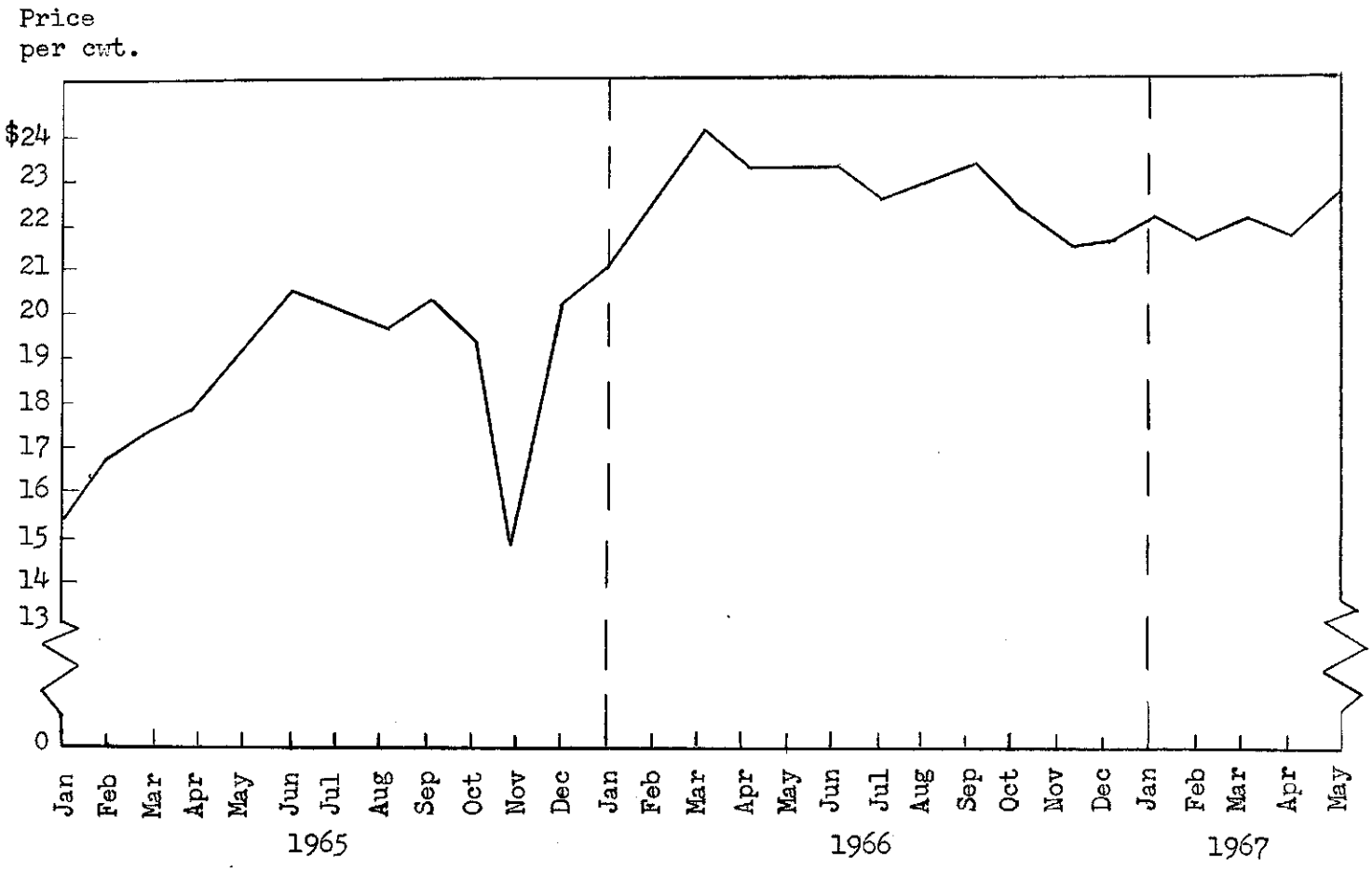


Figure 1. Average monthly prices per 100 pounds of feeders, all weights, South St. Paul, January 1965 - May 1967 (compiled from Livestock Market News Statistics and Related Data, USDA, AMS, 1965-1967).

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 1965 and 1966. 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	1965	1966
Alfalfa hay, per ton	$23.00	$21.00
Timothy or brome hay, per ton	13.00	12.18
Oats or hay silage, per ton	7.25	6.50
Corn silage, per ton	7.25	7.30
Ear corn, per bushel	1.13	1.19
Oats, per bushel	.63	.66
Soybean meal, per 100 pounds	4.63	5.25
Pasture, per month per head	3.00	3.00

The average purchase and sale prices per 100 pounds of feeder cattle for the years 1962-1966 by type of feeding program are shown in Figure 2.

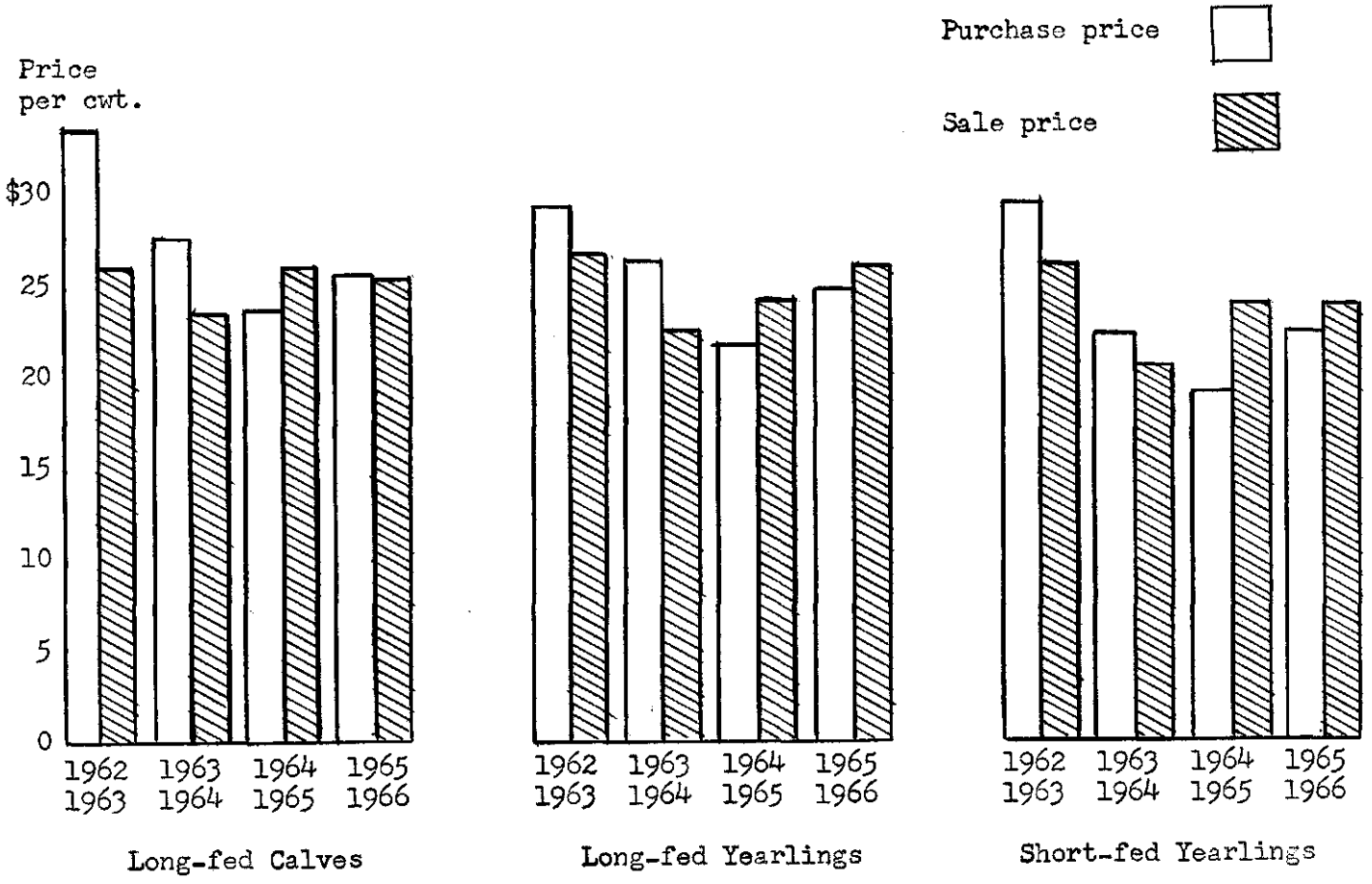


Figure 2. Average purchase and sales prices per 100 pounds of feeder cattle by feeding program on farms studied, 1962-1966.

NUMBERS AND WEIGHTS OF CATTLE FED

The individual lots of cattle for the 1965-1966 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 the feeding time.

Average death loss was 1.4 percent, 1.5 percent, and 0.6 percent for the long-fed calves, long-fed yearlings, and short-fed yearlings respectively.

Table 2. Range in numbers and weights for individual lots, 1965-1966

Item	28 lots long-fed calves			7 lots long-fed yearlings		
	Ave.	High	Low	Ave.	High	Low
Number of head in lot	135	358	14	103	227	59
Average purchase weight	420	498	344	573	679	507
Average sale weight	976	1198	795	1092	1180	994
Average gain in weight per head	556	784	370	519	576	481
Average daily gain per head	1.8	2.5	0.9	1.9	2.2	1.6

Item	11 lots short-fed yearlings		
	Ave.	High	Low
Number of head in lot	88	178	15
Average purchase weight	700	801	579
Average sale weight	1068	1220	893
Average gain in weight per head	368	514	196
Average daily gain per head	2.0	2.6	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 1965-1966 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 the difference between the price 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, 1965-1966

Item	Average of 28 lots		Individual lot numbers 1
Number and weight of cattle fed			
1. Date of purchase			Varied
2. Number of head bought	135		358
3. Days on farm	317		286
4. Days on pasture	12		-
5. Percent death loss	1.4		1.1
6. Average purchase weight, lbs.	420		464
7. Average sales weight, lbs.	976		834
8. Gain per head, lbs.	556		370
9. Gain per head per day, lbs.	1.8		1.3
10. Pounds of beef produced	73,818		129,128
Feed used	Head	Cwt.	Cwt.
11. Corn (bu/head) (lbs/cwt)	57.2	584	840
12. Small grain (bu/head)(lbs/cwt)	3.0	19	-
13. Commercial feed, lbs.	328	59	72
14. Total concentrates, lbs.	3628	662	912
15. Legume hay, lbs.	1002	184	282
16. Other hay, lbs.	66	12	-
17. Total dry roughage, lbs.	1068	196	282
18. Corn silage, lbs.	2833	554	279
19. Grass or oat silage, lbs.	14	3	-
20. Total silage, lbs.	2847	557	279
21. Pasture, days	12	3	-
Price of cattle	Head	Cwt.	Cwt.
22. Price paid	$104.02	$24.80	$23.37
23. Price received	239.02	24.55	29.23
24. Price spread or gross margin	135.00	-.25	5.86
Cost and return		Lot	Lot
25. Total value produced	$18396.73		$47480.81
26. Total feed cost	14170.01		32245.50
27. Total return over feed	4226.72		15235.31
Cost and return	Head	Cwt.	Cwt.
28. Value produced	$133.57	$24.83	$36.77
29. Feed costs	109.03	20.09	24.97
30. Return over feed cost	24.54	4.74	11.80
31. Return over feed cost from price spread		.28	7.54
32. Return over feed cost from feeding		4.46	4.26
33. Return per $100 feed cost		$124	$147

Table 3. Costs and returns from long-fed calves, 1965-1966 (continued)

Item	Individual lot numbers 2	3	4	5
Number and weight of cattle fed				
1. Date of purchase	Nov 65	Dec 65	Oct 65	Nov 65
2. Number of head bought	170	202	127	307
3. Days on farm	462	321	278	303
4. Days on pasture	150	-	-	-
5. Percent death loss	0.0	5.4	0.0	0.6
6. Average purchase weight, lbs.	373	373	489	400
7. Average sales weight, lbs.	795	831	996	1038
8. Gain per head, lbs.	422	458	507	638
9. Gain per head per day, lbs.	.9	1.4	1.8	2.1
10. Pounds of beef produced	71,671	83,280	64,405	194,050
Feed used	Cwt.	Cwt.	Cwt.	Cwt.
11. Corn, lbs.	-	454	448	604
12. Small grain, lbs.	31	253	3	-
13. Commercial feed, lbs.	30	84	41	61
14. Total concentrates, lbs.	61	791	492	665
15. Legume hay, lbs.	226	14	244	92
16. Other hay, lbs.	-	68	-	-
17. Total dry roughage, lbs.	226	82	244	92
18. Corn silage, lbs.	1925	1328	1110	223
19. Grass or oat silage, lbs.	-	-	-	-
20. Total silage, lbs.	1925	1328	1110	223
21. Pasture, days	36	-	-	-
Price of cattle	Cwt.	Cwt.	Cwt.	Cwt.
22. Price paid	$20.31	$20.85	$20.05	$24.66
23. Price received	24.13	28.01	23.73	25.28
24. Price spread or gross margin	3.82	7.16	3.68	.62
Cost and return	Lot	Lot	Lot	Lot
25. Total value produced	$19713.51	$28732.04	$17563.64	$49811.68
26. Total feed cost	11620.16	20432.55	11984.81	34479.60
27. Total return over feed	8093.35	8299.49	5579.83	15332.08
Cost and return	Cwt.	Cwt.	Cwt.	Cwt.
28. Value produced	$27.50	$34.50	$27.27	$25.67
29. Feed costs	16.21	24.53	18.61	17.77
30. Return over feed cost	11.29	9.97	8.66	7.90
31. Return over feed cost from price spread	3.37	6.49	3.54	.39
32. Return over feed cost from feeding	7.92	3.48	5.12	7.51
33. Return per $100 feed cost	$170	$141	$146	$144

Table 3. Costs and returns from long-fed calves, 1965-1966 (continued)

	Individual lot numbers				
	6	7	8	9	10
1.	Apr 65	Nov 65	Dec 65	Nov 65	Feb 66
2.	43	181	193	326	20
3.	350	307	275	350	275
4.	165	-	-	-	-
5.	2.3	1.1	0.0	2.5	0.0
6.	494	407	415	344	460
7.	894	1007	924	1055	968
8.	400	600	509	711	508
9.	1.1	2.0	1.9	2.0	1.8
10.	16,320	106,590	98,258	223,384	10,150
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
11.	749	499	592	572	717
12.	20	22	4	1	-
13.	61	52	78	62	23
14.	830	573	674	635	740
15.	135	114	104	60	182
16.	-	-	-	-	-
17.	135	114	104	60	182
18.	-	469	387	462	-
19.	-	-	-	-	-
20.	-	469	387	462	-
21.	41	-	-	-	-
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
22.	$21.00	$26.74	$24.81	$24.59	$22.28
23.	26.22	24.63	24.71	23.74	23.39
24.	5.22	-2.11	-.10	-.85	1.11
	Lot	Lot	Lot	Lot	Lot
25.	$5386.59	$24692.89	$24204.60	$52071.36	$2475.30
26.	4111.44	17487.51	18086.83	38484.22	1895.95
27.	1275.15	7205.38	6117.77	13587.14	579.35
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
28.	$33.00	$23.17	$24.63	$23.31	$24.39
29.	25.19	16.41	18.41	17.23	18.68
30.	7.81	6.76	6.22	6.08	5.71
31.	6.78	-1.46	-0.08	-0.43	1.00
32.	1.03	8.22	6.30	6.51	4.71
33.	$131	$141	$133	$135	$130

Table 3. Costs and returns from long-fed calves, 1965-1966 (continued)

Item	Individual lot numbers 11	12	13	14
Number and weight of cattle fed				
1. Date of purchase	Nov 65	Oct 65	Nov 65	Nov 65
2. Number of head bought	61	98	138	251
3. Days on farm	282	318	280	348
4. Days on pasture	-	-	-	-
5. Percent death loss	1.6	1.0	2.2	0.8
6. Average purchase weight, lbs.	498	454	451	391
7. Average sales weight, lbs.	1039	936	990	1058
8. Gain per head, lbs.	541	482	539	667
9. Gain per head per day, lbs.	1.9	1.5	1.9	1.9
10. Pounds of beef produced	31,975	46,313	71,400	165,332
Feed used	Cwt.	Cwt.	Cwt.	Cwt.
11. Corn, lbs.	643	526	633	312
12. Small grain, lbs.	8	-	2	2
13. Commercial feed, lbs.	47	71	67	250
14. Total concentrates, lbs.	698	597	702	564
15. Legume hay, lbs.	77	263	305	178
16. Other hay, lbs.	-	-	-	-
17. Total dry roughage, lbs.	77	263	305	178
18. Corn silage, lbs.	271	484	224	408
19. Grass or oat silage, lbs.	75	-	-	-
20. Total silage, lbs.	346	484	224	408
21. Pasture, days	-	-	-	-
Price of cattle	Cwt.	Cwt.	Cwt.	Cwt.
22. Price paid	$27.55	$23.62	$25.32	$26.22
23. Price received	25.56	24.49	25.54	23.74
24. Price spread or gross margin	-1.99	.87	.22	-2.48
Cost and return	Lot	Lot	Lot	Lot
25. Total value produced	$7568.59	$11726.17	$18367.59	$36814.67
26. Total feed cost	5766.59	9153.34	14782.90	29248.22
27. Total return over feed	1802.00	2572.83	3584.69	7566.45
Cost and return	Cwt.	Cwt.	Cwt.	Cwt.
28. Value produced	$23.67	$25.32	$25.72	$22.27
29. Feed costs	18.03	19.76	20.70	17.69
30. Return over feed cost	5.64	5.56	5.02	4.58
31. Return over feed cost from price spread	-1.89	0.83	0.18	-1.47
32. Return over feed cost from feeding	7.53	4.73	4.84	6.05
33. Return per $100 feed cost	$131	$128	$124	$126

Table 3. Costs and returns from long-fed calves, 1965-1966 (continued)

	Individual lot numbers				
	15	16	17	18	19
1.	Dec 65	Dec 65	Nov 65	Oct 65	Jan 66
2.	169	183	200	82	37
3.	360	289	304	258	256
4.	-	-	-	-	-
5.	0.0	2.2	6.5	2.4	0.0
6.	427	411	370	444	446
7.	1117	863	882	936	929
8.	690	452	512	492	483
9.	1.9	1.6	1.7	1.9	1.9
10.	116,510	79,235	91,080	38,495	17,890
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
11.	498	506	674	620	516
12.	2	3	38	30	-
13.	42	38	57	89	45
14.	542	547	769	739	561
15.	198	253	85	174	335
16.	34	47	14	-	-
17.	232	300	99	174	335
18.	325	493	703	935	1151
19.	-	-	-	-	-
20.	325	493	703	935	1151
21.	-	-	-	-	-
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
22.	$27.48	$24.20	$23.00	$22.95	$22.87
23.	23.49	23.42	23.89	24.61	23.40
24.	-3.99	-0.78	.89	1.66	.53
	Lot	Lot	Lot	Lot	Lot
25.	$24490.34	$17968.15	$22416.80	$10080.57	$4273.45
26.	19342.61	14523.34	19245.97	8821.95	3717.40
27.	5147.73	3444.81	3170.83	1258.62	556.05
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
28.	$21.02	$22.68	$24.61	$26.19	$23.89
29.	16.60	18.33	21.13	22.92	20.78
30.	4.42	4.35	3.48	3.27	3.11
31.	-2.47	-0.74	0.72	1.58	0.49
32.	6.89	5.09	2.76	1.69	2.62
33.	$127	$124	$116	$114	$115

Table 3. Costs and returns from long-fed calves, 1965-1966 (continued)

Item	Individual lot numbers 20	21	22	23
Number and weight of cattle fed				
1. Date of purchase	Nov 65	Nov 65	Dec 65	Jan 66
2. Number of head bought	70	208	98	66
3. Days on farm	329	364	291	315
4. Days on pasture	-	-	-	37
5. Percent death loss	0.0	1.4	0.0	0.0
6. Average purchase weight, lbs.	374	363	368	414
7. Average sales weight, lbs.	1026	1101	882	1198
8. Gain per head, lbs.	652	738	514	784
9. Gain per head per day, lbs.	2.0	2.0	1.8	2.5
10. Pounds of beef produced	45,655	150,140	50,355	51,775
Feed used	Cwt.	Cwt.	Cwt.	Cwt.
11. Corn, lbs.	542	561	500	635
12. Small grain, lbs.	26	21	-	-
13. Commercial feed, lbs.	31	18	40	69
14. Total concentrates, lbs.	599	600	540	704
15. Legume hay, lbs.	208	204	183	154
16. Other hay, lbs.	-	53	-	-
17. Total dry roughage, lbs.	208	257	183	154
18. Corn silage, lbs.	346	317	540	-
19. Grass or oat silage, lbs.	-	-	-	-
20. Total silage, lbs.	346	317	540	-
21. Pasture, days	-	-	-	5
Prices of cattle	Cwt.	Cwt.	Cwt.	Cwt.
22. Price paid	$29.25	$26.56	$28.81	$28.29
23. Price received	24.52	23.29	23.38	24.02
24. Price spread or gross margin	-4.73	-3.27	-5.43	-4.27
Cost and return	Lot	Lot	Lot	Lot
25. Total value produced	$9959.82	$32502.22	$9816.44	$11268.49
26. Total feed cost	8621.82	28261.92	8440.36	9997.73
27. Total return over feed	1338.00	4240.30	1376.08	1270.76
Cost and return	Cwt.	Cwt.	Cwt.	Cwt.
28. Value produced	$21.81	$21.65	$19.49	$21.76
29. Feed costs	18.88	18.82	16.76	19.31
30. Return over feed cost	2.93	2.83	2.73	2.45
31. Return over feed cost from price spread	-2.71	-1.64	-3.89	-2.26
32. Return over feed cost from feeding	5.64	4.47	6.62	4.71
33. Return per $100 feed cost	$116	$115	$116	$113

Table 3. Costs and returns from long-fed calves, 1965-1966 (concluded)

	Individual lot numbers				
	24	25	26	27	28
1.	Feb 66	Sept 65	Nov 65	Nov 65	Nov 65
2.	14	28	53	56	45
3.	276	322	337	344	403
4.	-	-	-	-	-
5.	0.0	3.6	1.9	1.8	0.0
6.	471	461	411	404	388
7.	996	999	1074	1049	899
8.	525	538	663	645	511
9.	1.9	1.7	2.0	1.9	1.3
10.	7349	14070	34080	35070	22977
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
11.	566	534	700	732	1172
12.	-	21	32	17	3
13.	44	54	41	57	27
14.	610	609	773	806	1202
15.	54	136	336	169	392
16.	116	-	-	6	-
17.	170	136	336	175	392
18.	1225	1814	-	86	-
19.	-	-	-	-	-
20.	1225	1814	-	86	-
21.	-	-	-	-	-
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
22.	$25.49	$26.25	$28.50	$28.74	$20.81
23.	23.61	24.81	23.99	23.67	24.97
24.	-1.88	-1.44	-4.51	-5.07	4.16
	Lot	Lot	Lot	Lot	Lot
25.	$1611.71	$3304.13	$7195.10	$7151.64	$6464.20
26.	1515.25	3180.15	7018.81	7429.71	6866.84
27.	96.46	123.98	176.29	-278.07	-402.64
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
28.	$21.93	$23.48	$21.11	$20.39	$28.13
29.	20.62	22.60	20.60	21.18	29.88
30.	1.31	.88	.51	-.79	-1.75
31.	-1.68	-1.33	-2.88	-3.28	3.16
32.	2.99	2.21	3.39	2.49	-4.91
33.	$106	$104	$102	$ 96	$ 94

Table 4. Costs and returns from long-fed yearlings, 1965-1966

Item	Average of 7 lots		Individual lot numbers 29	30
Number and weight of cattle fed				
1. Date of purchase			Jul 65	Apr 65
2. Number of head bought	103		101	82
3. Days on farm	276		265	263
4. Days on pasture	3		-	-
5. Percent death loss	1.5		2.0	0.0
6. Average purchase weight, lbs.	573		550	589
7. Average sales weight, lbs.	1092		1066	1165
8. Gain per head, lbs.	519		516	576
9. Gain per head per day, lbs.	1.9		1.9	2.2
10. Pounds of beef produced	51,668		49,965	47,254
Feed used	Head	Cwt.	Cwt.	Cwt.
11. Corn (bu/head) (lbs/cwt)	55.0	607	336	604
12. Small grain (bu/head) (lbs/cwt)	6.5	40	161	14
13. Commercial feed, lbs.	197	39	55	44
14. Total concentrates, lbs.	3488	686	552	662
15. Legume hay, lbs.	1041	209	-	258
16. Other hay, lbs.	176	35	244	-
17. Total dry roughages, lbs.	1217	244	244	258
18. Corn silage, lbs.	3301	642	1053	243
19. Grass or oat silage, lbs.	317	61	-	84
20. Total silage, lbs.	3618	703	1053	327
21. Pasture, days	3	0.6	-	-
Price of cattle	Head	Cwt.	Cwt.	Cwt.
22. Price paid	$138.29	$24.19	$23.02	$22.78
23. Price received	278.26	25.47	27.13	25.[illegible]
24. Price spread or gross margin	139.97	1.28	4.11	3.45
Cost and return		Lot	Lot	Lot
25. Total value produced		$13951.95	$15837.47	$13810.63
26. Total feed cost		11012.66	9367.58	8884.29
27. Total return over feed		2939.29	6469.89	4926.34
Cost and return	Head	Cwt.	Cwt.	Cwt.
28. Value produced	$137.90	$27.00	$31.70	$29.23
29. Feed costs	109.54	21.65	18.75	18.80
30. Return over feed cost	28.36	5.35	12.95	10.43
31. Return over feed cost from price spread		1.53	4.57	3.26
32. Return over feed cost from feeding		3.82	8.38	7.17
33. Return per $100 feed cost		$128	$169	$155

Table 4. Costs and returns from long-fed yearlings, 1965-1966 (concluded)

	Individual lot numbers				
	31	32	33	34	35
1.	Varied	Varied	Dec 65	Sep 65	Varied
2.	59	227	65	124	62
3.	315	273	273	278	265
4.	-	-	-	-	21
5.	1.7	0.4	1.5	1.6	3.2
6.	509	665	507	679	513
7.	1013	1180	1074	1152	994
8.	504	515	567	473	481
9.	1.6	1.9	2.1	1.7	1.8
10.	28,721	115,765	35,815	56,330	27,848
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
11.	457	680	632	947	591
12.	53	1	53	-	-
13.	28	52	1	39	56
14.	538	733	686	986	647
15.	308	215	14	288	381
16.	-	-	-	-	-
17.	308	215	14	288	381
18.	912	353	1156	671	108
19.	-	339	-	-	-
20.	912	692	1156	671	108
21.	-	-	-	-	4
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
22.	$23.30	$23.88	$27.25	$24.07	$25.03
23.	24.29	24.44	25.76	25.78	24.94
24.	.99	.56	-1.49	1.71	-.09
	Lot	Lot	Lot	Lot	Lot
25.	$7271.80	$29131.99	$8734.84	$15962.09	$6919.74
26.	5661.14	23087.38	7369.50	15322.06	7400.54
27.	1610.66	6044.61	1365.34	640.03	-480.80
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
28.	$25.32	$25.16	$24.39	$28.34	$24.84
29.	19.71	19.94	20.58	27.20	26.57
30.	5.61	5.22	3.81	1.14	-1.73
31.	1.03	.72	-1.37	2.56	-0.10
32.	4.58	4.50	5.18	-1.42	-1.63
33.	$128	$126	$118	$104	$ 94

Table 5. Costs and returns from short-fed yearlings, 1965-1966

Item	Average of 11 lots		Individual lot numbers 36	37
Number and weight of cattle fed				
1. Date of purchase			Nov 65	Aug 65
2. Number of head bought	88		68	61
3. Days on farm	182		193	192
4. Days on pasture	-		-	-
5. Percent death loss	0.6		0.0	1.6
6. Average purchase weight, lbs.	700		801	756
7. Average sales weight, lbs.	1068		1215	1158
8. Gain per head, lbs.	368		414	402
9. Gain per head per day, lbs.	2.0		2.1	2.1
10. Pounds of beef produced	32,146		28.130	23,415
Feed used	Head	Cwt.	Cwt.	Cwt.
11. Corn (bu/head) (lbs/cwt)	42.7	685	488	532
12. Small grain (bu/head) (lbs/cwt)	0.2	2	-	-
13. Commercial feed, lbs.	215	62	34	35
14. Total concentrates, lbs.	2613	749	522	567
15. Legume hay, lbs.	700	198	43	256
16. Other hay, lbs.	65	21	28	34
17. Total dry roughages, lbs.	765	219	71	290
18. Corn silage, lbs.	2418	674	1386	1495
19. Grass or oat silage, lbs.	-	-	-	-
20. Total silage, lbs.	2418	674	1386	1495
21. Pasture, days	-	-	-	-
Price of cattle	Head	Cwt.	Cwt.	Cwt.
22. Price paid	$158.14	$22.79	$17.32	$18.24
23. Price received	258.02	24.16	22.52	23.34
24. Price spread or gross margin	99.88	1.37	5.20	5.10
Cost and return		Lot	Lot.	Lot
25. Total value produced		$8522.22	$9173.54	$7817.44
26. Total feed cost		6754.95	5064.39	5133.93
27. Total return over feed		1767.27	4109.15	2683.51
Cost and return	Head	Cwt.	Cwt.	Cwt.
28. Value produced	$98.87	$27.69	$32.61	$33.39
29. Feed costs	77.79	22.51	18.00	21.93
30. Return over feed cost	21.08	5.18	14.61	11.46
31. Return over feed cost from price spread		3.53	10.09	10.05
32. Return over feed cost from feeding		1.65	4.52	1.41
33. Return per $100 feed cost		$127	$181	$152

Table 5. Costs and returns from short-fed yearlings, 1965-1966 (continued)

	Individual lot numbers					
	38	39	40	41	42	43
1.	Jun 65	Dec 65	Sep 65	Oct 65	Oct 65	Mar 66
2.	50	178	80	76	172	136
3.	189	183	219	186	176	226
4.	-	-	-	-	-	-
5.	2.0	1.1	0.0	0.0	1.7	0.7
6.	784	691	672	733	685	611
7.	1220	1059	1079	1110	931	1125
8.	436	368	407	377	246	514
9.	2.3	2.0	1.8	2.0	1.4	2.3
10.	20,600	63,263	32,615	28,610	39,460	68,795
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
11.	421	462	652	786	741	651
12.	-	-	-	18	-	-
13.	32	80	55	99	71	28
14.	453	542	707	903	812	679
15.	272	168	307	231	102	163
16.	39	-	-	-	127	-
17.	311	168	307	231	229	163
18.	1282	1005	-	545	1700	-
19.	-	-	-	-	-	-
20.	1282	1005	-	545	1700	-
21.	-	-	-	-	-	-
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
22.	$18.20	$23.59	$25.40	$25.25	$21.98	$30.95
23.	22.23	25.75	26.24	26.52	24.53	24.63
24.	4.03	2.16	.84	1.27	2.55	-6.32
	Lot	Lot	Lot	Lot	Lot	Lot
25.	$6163.61	$18951.90	$9012.95	$8292.71	$12679.33	$11690.94
26.	3899.08	12884.97	6553.08	7015.15	11327.01	9635.53
27.	2264.53	6066.93	2459.87	1277.56	1352.32	2055.41
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
28.	$29.92	$29.96	$27.63	$28.99	$32.13	$16.99
29.	18.93	20.37	20.09	24.52	28.70	14.00
30.	10.99	9.59	7.54	4.47	3.43	2.99
31.	7.69	4.21	1.39	2.47	7.60	-7.64
32.	3.30	5.38	6.15	2.00	-4.17	10.63
33.	$158	$147	$138	$118	$112	$121

Table 5. Costs and returns from short-fed yearlings, 1965-1966 (concluded)

Item	Individual lot numbers 44	45	46
Number and weight of cattle fed			
1. Date of purchase	Feb 66	Dec 65	Mar 66
2. Number of head bought	15	29	103
3. Days on farm	123	141	173
4. Days on pasture	-	-	-
5. Percent death loss	0.0	0.0	0.0
6. Average purchase weight, lbs.	579	697	692
7. Average sales weight, lbs.	900	893	1063
8. Gain per head, lbs.	321	196	371
9. Gain per head per day, lbs.	2.6	1.4	2.1
10. Pounds of beef produced	4803	5705	38205
Feed used	Cwt.	Cwt.	Cwt.
11. Corn, lbs.	661	1131	1019
12. Small grain, lbs.	-	-	-
13. Commercial feed, lbs.	143	50	53
14. Total concentrates, lbs.	804	1181	1072
15. Legume hay, lbs.	-	447	192
16. Other hay, lbs.	-	-	-
17. Total dry roughage, lbs.	-	447	192
18. Corn silage, lbs.	-	-	-
19. Grass or oat silage, lbs.	-	-	-
20. Total silage, lbs.	-	-	-
21. Pasture, days	-	-	-
Price of cattle	Cwt.	Cwt.	Cwt.
22. Price paid	$20.00	$23.00	$26.79
23. Price received	21.45	24.62	23.90
24. Price spread or gross margin	1.45	1.62	-2.89
Cost and return	Lot	Lot	Lot
25. Total value produced	$1156.90	$1732.94	$7072.19
26. Total feed cost	1013.88	1953.20	9824.28
27. Total return over feed	143.02	-220.26	-2752.09
Cost and return	Cwt.	Cwt.	Cwt.
28. Value produced	$24.09	$30.37	$18.51
29. Feed costs	21.11	34.23	25.71
30. Return over feed cost	2.98	-3.86	-7.20
31. Return over feed cost from price spread	2.64	5.75	-5.39
32. Return over feed cost from feeding	.34	-9.61	-1.81
33. Return per $100 feed cost	$114	$ 89	$ 72

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 1965-1966 lots is $-0.25 for the long-fed calves in comparison with $1.28 and $1.37 for the long-fed and short-fed yearlings respectively. The return over feed cost from price spread is $0.28, $1.53 and $3.53 for the long-fed calves, long-fed and short-fed yearlings respectively. The return over feed cost from feeding was $4.46, $3.82, and $1.65 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.

Table 6. Returns from price spread and from feeding, 1965-1966

Item	Long-fed calves 28 lots	Long-fed yearlings 7 lots	Short-fed yearlings 11 lots
Price spread per 100 pounds	$-0.25	$1.28	$1.37
Return over feed cost from price spread	.28	1.53	3.53
Return over feed cost from feeding	4.46	3.82	1.65
Return over feed cost per 100 pounds gain	4.74	5.35	5.18
Average purchase weight, pounds	420	573	700
Gain per head, pounds	556	519	368
Gain per head per day, pounds	1.8	1.9	2.0

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 22. 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 tables 7 and 8 of this report will provide data which can be used.

Table 7. Average feeder requirements based on 1962-1966 lot averages

Item	Long-fed calves	Long-fed yearlings	Short-fed yearlings
Purchase weight	413	598	691
Gain in weight	561	493	376
Days on farm	331	298	191
Gain per head per day	1.8	1.7	2.0
Requirements per head			
Corn, bu.	54.1	53.4	42.1
Small grain, bu.	2.6	2.6	0.6
Supplement, lbs.	268	230	208
All hay, tons	.70	.76	.42
Silage, tons	1.11	1.51	1.27
Pasture, days	7	10	1
Labor, hours[1]	7.46	4.97	3.76
Interest, percent	6.5	6.5	6.5
Requirements per cwt.			
Miscellaneous cost	$ .90	$ .90	$ .90
Overhead cost for shelter and equipment	.95	.95	.95

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.)

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

Item	Long-fed calves 1962-63 average 16 lots	1963-64 average 18 lots	1964-65 average 32 lots	1965-66 average 28 lots
Number and weight of cattle fed				
Number of head bought	110	90	109	135
Days on farm	348	323	318	317
Days on pasture	3	9	7	12
Percent death loss	1.2	2.9	0.9	1.4
Average purchase weight, lbs.	411	404	415	420
Average sales weight, lbs.	993	972	954	976
Gain per head, lbs.	582	568	539	556
Gain per head per day, lbs.	1.6	1.8	1.7	1.8
Pounds beef produced per lot	63,094	48,939	58,130	73,818
Feed used per 100 lbs. gain				
Corn, lbs.	509	525	555	584
Small grain, lbs.	6	9	31	19
Commercial feed, lbs.	50	39	44	59
Total concentrates, lbs.	565	573	630	662
Legume hay, lbs.	239	313	227	184
Other hay and stover, lbs.	20	-	3	12
Total dry roughage, lbs.	259	313	230	196
Silage, lbs.	422	258	369	557
Pasture, days	0.4	2	2	3
Price of cattle				
Price paid per 100 pounds	$30.70	$26.33	$22.02	$24.80
Price received per 100 pounds	22.81	21.90	24.22	24.55
Price spread per 100 pounds	-7.89	-4.43	2.20	- .25
Cost and returns per 100 pounds gain				
Value produced	$17.10	$19.69	$26.42	$24.83
Feed costs	15.92	15.96	18.17	20.09
Return over feed costs	$ 1.18	$ 3.73	$ 8.25	$ 4.74
Return over feed cost from price spread	$-5.71	$-2.21	$ 2.20	$ 0.28
Return over feed cost from feeding	6.91	5.94	6.05	4.46
Return per $100 feed cost	$112	$134	$150	$124
Estimated costs other than feed and labor+*	$3.75	$3.36	$2.81	$2.91
Estimated return to labor and management	-2.57	.32	5.44	1.83

* Hasbargen, P. R., and G. A. Pond, "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.

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

Item	Long-fed yearlings 1962-63 average 10 lots	1963-64 average 10 lots	1964-65 average 9 lots	1965-66 average 7 lots
Number and weight of cattle fed				
Number of head bought	39	91	97	103
Days on farm	307	311	296	276
Days on pasture	-	3	10	3
Percent death loss	0.2	0.8	0.5	1.5
Average purchase weight, lbs.	639	589	592	573
Average sales weight, lbs.	1088	1132	1054	1092
Gain per head, lbs.	448	543	462	519
Gain per head per day, lbs.	1.5	1.8	1.6	1.9
Pounds beef produced per lot	17,903	48,617	58,130	51,668
Feed used per 100 pounds gain				
Corn, lbs.	598	613	520	607
Small grain, lbs.	3	5	18	40
Commercial feed, lbs.	47	55	47	39
Total concentrates, lbs.	648	673	585	686
Legume hay, lbs.	341	345	228	209
Other hay, lbs.	4	29	12	35
Total dry roughage, lbs.	345	374	240	244
Silage, lbs.	939	374	570	703
Pasture, days	-	5	2	0.6
Price of cattle				
Price paid per 100 pounds	$26.13	$25.47	$20.26	$24.19
Price received per 100 pounds	22.80	21.83	23.04	25.47
Price spread per 100 pounds	-3.33	-3.64	2.78	1.28
Cost and returns per 100 pounds gain				
Value produced	$19.10	$18.14	$27.03	$27.00
Feed costs	20.12	18.42	18.71	21.65
Return over feed costs	$-1.02	$- .28	$ 8.32	$ 5.35
Return over feed cost from price spread	$-3.70	$-3.69	$ 3.99	$ 1.53
Return over feed cost from feeding	2.68	3.41	4.33	3.82
Return per $100 feed cost	$ 97	$ 98	$145	$128
Estimated costs other than feed and labor+*	$3.47	$3.27	$3.21	$3.17
Estimated return to labor and management	-4.49	-3.51	5.11	2.18

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

Items	Short-fed yearlings			
	1962-63 average 12 lots	1963-64 average 15 lots	1964-65 average 10 lots	1965-66 average 11 lots
Number and weight of cattle fed				
Number of head bought	90	62	72	88
Days on farm	194	195	193	182
Days on pasture	1.7	-	3	-
Percent death loss	0.6	0.5	0.8	0.6
Average purchase weight, lbs.	720	675	668	700
Average sales weight, lbs.	1088	1057	1055	1068
Gain per head, lbs.	368	382	386	368
Gain per head per day, lbs.	1.9	2.0	2.0	2.0
Pounds beef produced per lot	32,094	24,298	25,369	32,146
Feed used per 100 pounds gain				
Corn, lbs.	746	600	565	685
Small grain, lbs.	4	3	12	2
Commercial feed, lbs.	71	48	51	62
Total concentrates, lbs.	821	651	628	749
Legume hay, lbs.	183	292	162	198
Other hay, lbs.	8	38	10	21
Total dry roughage, lbs.	191	330	172	219
Silage, lbs.	506	633	964	674
Pasture, days	0.4	-	0.7	-
Price of cattle				
Price paid per 100 pounds	$24.83	$20.73	$17.83	$22.79
Price received per 100 pounds	21.36	19.82	22.29	24.16
Price spread per 100 pounds	-3.47	- .91	4.46	1.37
Cost and returns per 100 pounds gain				
Value produced	$14.95	$18.83	$29.81	$27.69
Feed costs	20.31	18.37	19.74	22.51
Return over feed costs	$-5.36	$ .46	$10.07	$ 5.18
Return over feed cost from price spread	$-6.41	$ -.99	$ 7.52	$ 3.53
Return over feed cost from feeding	1.05	1.45	2.55	1.65
Return per $100 feed cost	$ 76	$102	$154	$127
Estimated costs other than feed and labor+*	$2.71	$2.57	$3.01	$3.26
Estimated return to labor and management	-8.07	-2.11	7.06	1.92

PROFITS PROSPECTS WORK SHEET

STEP 1. Determine cost of producing finished animal[2]

(a) Original cost per head: _____ (wt) x $_____ (price) = $_____

(b) Feed and other costs per head:

Feed cost	Amount fed	Price	Cost
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 costs[3] _____ (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: $\frac{\text{total cost per head}}{\text{sales weight}}$ = $_____ / cwt. = $_____

STEP 3. Your estimated sale value of steer

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

Profit per head = $_____

---

2. Routhe, 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 = 420 lbs. @ $24.80 per cwt. = $104.16

(b) Feed and other costs per head 556 lbs. gain

Feed cost	Amount fed[4]	Price	Cost
Corn, bu.	57.2 bu.	$1.19	$68.07
Small grain, bu.	3.0 bu.	.66	1.98
Supplement, lbs.	328 lbs.	.052	17.05
All hay, tons	.53 tons	21.00	11.13
Silage, tons	1.42 tons	7.30	10.36
Pasture, days	3 days	.10	.30

Total feed cost . . . . . = 108.89

Estimated other costs

Labor cost: 7.46 hours per head x $2.00 per hour (100 head basis) = 14.92

Interest: $104.16 (original cost per head) x 6.5% (number of days on farm = 317 = .87 year) = 5.89

Miscellaneous costs: 556 lbs. gain x $0.90 per cwt. (includes only variable costs) = 5.00

Other overhead costs for equipment and shelter: 556 lbs. gain x $0.95 per cwt. = 5.28

(c) Total cost per head . . . . . = $244.14

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

$$\frac{\text{Total cost per head}}{\text{Number of cwt. sold}} = \frac{\$244.14}{9.76} = \$25.01$$

---

4. See table 7 for feed requirements.