

Cattle - Feeding

Department of Economics and Sociology
Colorado Experiment Station
cooperating with
Bureau of Agricultural Economics
United States Department of Agriculture

Preliminary Report

Cattle Feeding 1922-23 and 1923-24

Weld County, Colorado

R. T. Burdick

This report includes five farms for 1922-23 and five farms for 1923-24. The number is too small to make it possible to more than observe the actual results on each farm. However, these individual results are suggestive to one who wishes to compare his own results with those of his neighbors.

The farms here studied are all at present cooperating with the Department of Economics and the Colorado Experiment Station and with the United States Department of Agriculture in keeping a detailed account of their farm business.

In 1922 calves, cows and steers were purchased to feed. In 1923 steers only were reported.

Table I. Number and Cost of Cattle Fed.

Cattle Feeding, Weld County, Colorado.

1922-23						
Farm Number	11	6	25	20	17	
Class of cattle fed	calves	cows	steers	steers	steers	
Number purchased	60	25	29	62	55	
Average weight, lbs.	411	910	1083	909	972	
Purchase cost per cwt.	\$6.61	\$2.97	\$6.60	\$5.88	\$5.89	
Purch. cost per head	\$27.17	\$27.10	\$71.40	\$43.45	\$57.15	
Death loss, number	---	1	1	1	1	
Increased cost per head due to death loss	---	\$1.10	\$2.60	\$0.90	\$1.00	
Purch. cost per head fed	\$27.17	\$28.20	\$74.00	\$54.35	\$58.15	

1923-24						
Farm Number	25	5	31	17	20	Ave.
Class of cattle fed			Steers on all farms			
Number purchased	37	34	90	66	56	55
Average weight, lbs.	934	728	911	720	930	875
Purchase cost per cwt.	\$ 6.70	\$ 5.42	\$ 6.63	\$ 5.48	\$5.84	\$6.08
Purch. cost per head	\$62.60	\$39.45	\$60.41	\$42.75	\$57.75	\$53.10
	No death loss reported for 1923-24.					

Table I shows that in 1922 the cost of each animal fed thru was increased from 90 cents to \$2.60 by the death loss of one animal. This death loss was one reason for smaller profits in 1922.

The farms in this and the following tables are all in the same order with the farm showing the smallest at the left and the farm showing the largest profit at the right.

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Table II. Feeding Period and Feeding Gains.

Cattle Feeding, Weld County, Colorado.

1922-23						
Farm number	11	6	25	20	17	
Avg. feeding period, days	224	102	94	111	113	
Gain per head, lbs.	306	-	188	-	181	
Gain per day, lbs.	1.37	-	2	-	1.6	
Number sold	60	24	28	61	54	
Avg. sale weight, lbs.	717	-	1270	-	1153	

1923-24						
Farm number	25	5	31	17	20	Average
Avg. feeding period, days	113	127	130	113	118	121
Gain per head, lbs.	221	236	255	208	232.5	233
Gain per day, lbs.	1.96	1.86	1.96	1.84	1.98	1.92
Number sold	27	34	90	66	56	55
Avg. sale weight, lbs.	1155	964	1166	988	1222.5	1108

Table II shows the length of the feeding period and the gains made (except for two farms in 1922 that sold for a lump sum so that no sale weight was secured.) The gains per day in 1923 were very uniform ranging from 1.84 pounds to 1.98 pounds per day. In 1922 the calves made a gain of 1.37 pounds per day while farms 25 and 17 showed 2 pounds and 1.6 pounds respectively gain per steer per day.

The average feeding period in 1922 was 137 days, while it was only 121 days in 1923. The apparently longer average feeding period in 1922 is due to the fact that the calves were fed 224 days. The other four farms averaged only 106 days in 1922 so that for steers a shorter feed was given in 1922 than in 1923.

Table III. Amount of Feed per Head per Day.

Cattle Feeding, Weld County, Colorado.

1922-23						
Farm number	11	6	25	20	17	
Feed per head per day:						
Alfalfa, pounds	8.02	25.6	12.7	13.18	5.85	
Corn "	5.34	--	4.27	2.94	.91	
Molasses "	1.30	--	6.50	2.98	--	
Pulp "	19.30	--	26.6	29.38	75.00	
Potatoes "	--	33.7	--	--	--	

1923-24						
Farm number	25	5	31	17	20	Average
Feed per head per day:						
Alfalfa, pounds	6.72	10.65	10.27	7.52	8.49	9.02
Barley "	---	--	2.35	--	1.90	1.21
Corn "	5.55	3.85	1.50	2.80	1.23	2.42
Misc. Grain "	.06	.77	.74	--	.42	.45
Molasses "	1.64	--	2.83	--	1.53	1.46
Pulp "	72.4	--	28.77	55.49	58.8	40.9
Silage "	--	25.00	--	--	--	3.26
Potatoes "	1.96	--	--	--	--	.18

Table III shows the amount of feed per head per day. In 1922 one man fed alfalfa and potatoes only without any grain. The other four men fed alfalfa, corn, molasses and pulp, except No. 17 who fed no molasses. In 1923 four men fed pulp, three fed molasses and two fed barley. The amount of pulp fed per day in 1923 varied from 29 to 75 pounds with an average of 41 pounds.

Table IV. Feed Required for 100 Pounds Gain.

Cattle Feeding, Weld County, Colorado.

1922-23

Farm number	11	6	25	20	17
Feed per 100 lbs. gain:					
Alfalfa, pounds	589	*	812	*	408
Corn "	391	*	273	*	64
Molasses "	95	*	416	*	--
Pulp "	1414	*	1705	*	5220

1923-24

Farm number	25	5	31	17	20	Average
Feed per 100 lbs. gain:						
Alfalfa, pounds	345	573	522	408	430	469
Barley "	--	--	120	--	96	63
Corn "	284	207	76	152	62	126
Misc. Grain "	3	41	38	--	21	23
Molasses "	84	--	144	--	76	76
Pulp "	3705	--	1466	2980	2979	2130
Silage "	--	1345	--	--	--	169
Potatoes "	101	--	--	--	--	9

*Farms 6 and 20 sold for lump sum, hence no gain in weight available upon which to figure feed.

Table IV shows the feed required to produce 100 pounds of gain. Since two men sold by the head in 1922 no opportunity was given to show the gains per head or the amount of feed needed to produce 100 pounds of gain. Alfalfa and beet pulp are the main feeds used. In 1923 an average of 288 pounds of all kinds of grain per 100 pounds of gain were used in addition to the alfalfa, and pulp, and other roughage.

Table V. Cost of Producing 100 Pounds Gain.
Cattle Feeding, Weld County, Colorado.

1922-23					
Farm number	11	6	25	20	17
All feeding costs					
per 100 lbs. gain	\$12.90	*	\$12.10	*	\$9.80
Feed cost per					
100 lbs. gain	10.20	*	8.37	*	6.80
Other listed costs					
per 100 lbs. gain	2.70	*	3.73	*	3.00
Int. paid @8%	.35		.77		.81
Man labor @ 25¢	1.26		1.54		.95
Horse " @ 15¢	.26		.62		.83
Depr. on equip.	.28		.22		.24
Marketing exp.	.54		--		--
Other expense	.01		.58		.17

1923-24						
Farm number	25	5	31	17	20	Average
All feeding costs						
per 100 lbs. gain	\$14.90	\$13.50	\$11.00	\$11.10	\$11.00	\$11.70
Feed cost per						
100 lbs. gain	7.80	10.80	8.60	6.30	7.40	8.10
Other listed costs						
per 100 lbs. gain	7.10	2.70	2.40	4.80	3.60	3.60
Int. paid, @8%	.83	.46	.63	.51	.74	.62
Man labor @ 25¢	1.18	.99	.81	.95	1.22	.98
Horse " @ 15¢	.89	.72	.65	.29	1.19	.71
Depr. on equip.	.25	.26	.05	.18	.16	.13
Marketing exp.	2.97	--	--	1.54	.32	.66
Other expenses	.98	.27	.26	1.33	.07	.50

*No sale weight available for Farms 6 and 20.

Table V shows the cost of producing 100 pounds of gain. The cost ranged from \$9.80 to \$12.90 per 100 pounds in 1922 and from \$11.00 to \$14.90 in 1923. The average cost was \$11.70 per 100 pounds gain in 1923 which compares with a \$6.08 purchase cost per cwt. In 1922 the average purchase cost was \$5.75 per cwt. The average cost of putting on 100 pounds of gain in 1922 has not been computed as two men sold for a lump sum and secured no sale weights.

Apparently it cost about twice as much to put on 100 pounds of gain as it costs to buy an hundredweight of feeders. This means that a wider margin between purchase and sale price is needed to handle light feeders as compared to heavy feeders, unless gains can be put on cheaper on the lighter animals. As a matter of fact in 1923 the heaviest feeders, weighing 990 pounds, put on 100 pounds of gain for \$11 which was the lowest cost and the lightest feeders, weighing 728 pounds, put on 100 pounds gain for \$13.50 which was next to the highest cost. The method of feeding, the quality of the animals and other factors not included in this study will influence the cost of gains.

In 1923 the \$11.70 cost of 100 pounds of gain consisted of \$8.10 feed cost and \$3.60 for all other listed costs. Feed is about 70 per cent of the cost in this case. Man labor costs about one dollar for each 100 pounds of gain and horse labor costs about 70 cents per 100 pounds gain.

Table VI. Necessary and Actual Feeding Margin
Cattle Feeding, Weld County, Colorado.

1922-23						
Farm number	11	6	25	30	17	
Purch. cost per cwt. fed	\$6.61	*	\$6.84	*	\$6.00	
All costs per cwt. sales	9.31		7.62		6.49	
Necessary feeding margin	2.70		.78		.49	
Sales price per cwt.	9.00		7.97		7.45	
Actual feeding margin	2.39		1.13		1.45	

1923-24						
Farm number	25	5	31	17	20	Average
Purch. cost per cwt. fed	\$6.70	\$5.42	\$6.63	\$5.48	\$5.84	\$6.08
All costs per cwt. sales	8.26	7.39	7.59	6.21	6.82	7.37
Necessary feeding margin	1.56	1.97	.96	.73	.98	1.19
Sales price per cwt.	8.86	8.16	8.29	7.81	7.99	8.16
Actual feeding margin	2.16	2.74	1.66	2.33	2.15	3.08

*No sale weight available for computation.

Table VI shows the necessary and actual feeding margin per 100 pounds for all farms except numbers 6 and 30, for which no sale weights were available. In 1923 the necessary margin on all steers was \$1.19 per hundredweight with a range of from 73 cents to \$1.97 per hundredweight. In 1922 the necessary margin on 2 farms feeding steers was 78 cents and 49 cents, while it was \$2.70 per hundredweight on one farm feeding calves.

The actual margin was greater than the necessary margin in all cases except the calves in 1922 which lacked 31 cents per hundredweight of selling for enough to break even. In 1923 the average margin received was 89 cents above the necessary margin.

Table VII. Labor Requirements Feeding Cattle.
Cattle Feeding, Weld County, Colorado.

1922-23						
Farm number	11	6	25	20	17	Average
Per 100 head per day:						
Man labor hrs.	6.87	9.54	12.1	5.86	5.74	7.3
Horse " "	2.35	2.04	8.08	9.52	8.8	5.8
Per head for feeding period:						
Man labor hrs.	15.27	11.55	11.55	6.98	6.49	10.00
Horse " "	5.26	3.45	7.58	11.32	9.96	7.93
1923-24						
Farm number	25	5	31	17	20	Average
Per 100 head per day:						
Man labor hrs.	9.07	7.23	6.31	4.08	9.38	6.81
Horse " "	11.63	8.97	8.47	3.58	15.46	9.16
Per head for feeding period:						
Man labor hrs.	10.23	9.20	8.21	4.60	11.18	8.27
Horse " "	13.15	11.41	11.01	4.05	18.39	11.11

It takes about 7 hours of man labor per day to care for 100 steers. In 1922 it took about 6 hours of horse labor per day per 100 steers while it took slightly over 9 hours in 1923 to do the same work. This increase is mostly due to the difference in the distance that feed was hauled on different farms the two years.

It took more man labor than horse labor per steer in 1922 and more horse labor than man labor per steer in 1923.

Table VIII. Percentage Distribution of Expense.
Cattle Feeding, Weld County, Colorado.

1922-23						
Farm number	11	6	35	20	17	Average
	pct.	pct.	pct.	pct.	pct.	pct.
Purch. cost in feed lot	40.8	52.3	76.5	65.8	76.7	63.2
Purchased feeds	33.1	--	10.0	8.7	6.0	13.1
Marketing expense	3.4	--	--	--	--	0.8
Interest paid @ 8 %	1.6	--	1.5	1.8	1.9	1.6
All other cash expense	.1	--	1.1	.2	.1	.2
Depreciation on equip.	1.2	.7	.4	.4	.5	.7
Man labor	5.8	5.5	3.0	2.4	2.3	3.5
Horse labor	1.2	.7	1.2	2.1	3.0	1.6
Farm feeds	14.8	40.8	6.3	18.6	10.5	15.5

1923-24						
Farm number	25	5	31	17	20	Average
	pct.	pct.	pct.	pct.	pct.	pct.
Purchase cost in feed lot	65.5	55.4	68.3	64.8	69.3	66.0
Purchased feeds	13.7	12.5	12.6	9.6	8.8	11.3
Marketing expense	6.9	--	--	4.9	.6	1.9
Interest paid @ 8%	1.9	1.5	1.8	1.6	2.1	1.8
All other cash expense	0.8	.5	.2	4.4	.2	1.2
Depreciation on equip.	0.6	.9	.2	.3	.4	.4
Man labor	2.7	3.3	2.3	3.0	3.4	2.8
Horse labor	2.0	2.4	1.9	.9	3.3	2.1
Farm feeds	5.9	23.5	12.7	10.5	11.9	12.5

Table VIII shows the percentage distribution of all listed expenses in cattle feeding for the two years. The cost of feeders in the feed lot is about two-thirds of the total expense. Purchased feeds in 1923 were 11.3 per cent of the expense while farm feeds were 12.5 per cent the same year.

Farm No. 11 in 1922 had the lowest purchase percentage and the highest purchased feed percentage. Farm 6 in 1922 bought no feed so that practically all of his expense other than the first cost of feeders consisted of farm feeds and labor.

Table IX. Financial Summary.
Cattle Feeding, Weld County, Colorado.

1932-33						
Farm number	11	6	35	30	17	Avg.
Purchase cost	\$1630.39	\$376.95	\$2071.74	\$3314.36	\$3149.50	\$2168.59
Other cash costs	1452.06	.10	342.39	532.74	222.37	533.33
Depr. on equip.	51.06	9.36	11.90	21.32	19.84	23.19
Farm feeds	594.00	528.70	170.00	939.74	439.00	533.29
Man labor	233.20	70.75	81.44	122.34	93.41	120.03
Horse labor	47.40	9.00	32.40	104.40	81.45	54.93
Total	4007.11	1294.86	2709.87	5041.90	4105.67	3432.36
Receipts	3871.80	1510.00	2833.80	5471.78	4578.31	3613.14
Balance above listed costs	*135.31	15.14	123.93	439.88	472.64	180.78
Balance per head fed *1.30		.63	4.42	7.05	6.75	3.98
1933-34						
Farm number	25	5	31	17	20	Avg.
Purchase cost	\$1689.98	\$1340.99	\$5436.49	\$2820.99	\$3233.10	\$2904.31
Other cash costs	598.03	352.90	1169.61	888.03	544.23	710.56
Depr. on equip.	14.84	21.04	11.90	14.86	20.76	16.68
Farm feeds	151.60	570.00	1010.50	456.00	554.10	548.44
Man labor	70.37	79.34	184.75	130.93	159.12	124.90
Horse labor	53.25	58.20	148.65	40.05	154.50	90.93
Total	2578.07	2422.47	7961.90	4350.86	4665.81	4395.82
Receipts	2765.20	2675.00	8700.00	5095.82	5467.30	4940.71
Balance above listed costs	187.13	252.53	738.10	744.96	801.69	544.89
Balance per head fed 6.94		7.42	8.20	11.28	14.32	9.21

*Loss - Hogs followed these calves and netted \$57.30 hence net loss from feeding \$78.01.

Table X. Costs and Receipts per Head.

Cattle Feeding, Weld County, Colorado.

1922-23

Farm number	11	6	25	20	17	Average
No. head fed thru	60	24	28	61	54	45.4
Purchase cost	\$27.17	\$28.21	\$73.99	\$54.34	\$58.32	\$47.77
Other cash costs	24.30	.005	12.23	8.85	6.16	11.75
Depr. on equipment	.85	.39	.42	.35	.37	.51
Farm feeds	9.90	22.04	6.07	15.40	7.94	11.72
Man labor	3.87	2.94	2.91	2.00	1.73	2.64
Horse labor	.79	.37	1.16	1.71	1.51	1.21
Total	66.78	53.95	96.78	82.65	76.03	75.60
Receipts	64.53	54.58	101.20	89.70	84.78	79.58
Balance per head	2.25*	.63	4.42	7.05	8.75	3.98

1923-24

Farm number	25	5	31	17	20	Average
No. head fed thru	27	34	90	66	56	55
Purchase cost	\$62.59	\$39.44	\$60.41	\$42.74	\$57.73	\$52.81
Other cash costs	22.15	10.38	12.99	13.46	9.72	12.92
Depr. on equipment	.55	.62	.13	.22	.37	.30
Farm feeds	5.61	16.76	11.23	6.91	9.89	9.97
Man labor	2.61	2.33	2.05	1.98	2.84	2.27
Horse labor	1.97	1.71	1.65	.61	2.76	1.65
Total	95.48	71.24	88.46	65.92	83.31	79.92
Receipts	102.41	78.67	96.67	77.21	97.63	89.83
Balance per head	6.93	7.43	8.21	11.29	14.32	9.91

*Loss.

Tables IX and X give the financial summary of each farm as a total and per head fed for the cattle feeding operations. One man lost \$135.31 on his cattle feeding in 1922. The largest gain per steer in 1922 was \$8.76 and the average was practically \$4 per head. In 1923 no farmer lost money and the average was practically \$10 per head.

The net balance per head in 1923 is two and one-half times as great as in 1922.

It would appear from a study of the two years on these few farms that cattle feeding is carried on with a rather narrow margin of profit at the prevailing prices. The farmers secured market prices for their feed and average wages for their own time, and in addition to that received \$4 per steer in 1922 and \$10 per steer in 1923 to cover such items as use of auto or truck, interest on their investment in feeding equipment and profit. When in addition to the above the value of manure secured from feeding is considered, it will be seen that cattle feeding represents an opportunity to secure employment during the winter months and turn a small profit as well.

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