

FATTENING HEIFERS FOR THE SUMMER OR EARLY FALL MARKET

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Experiment III.- 1946-1947

1. Without Pasture

2. With Pasture

A. Full feeding on grass
after grazing 100 days.

B. Full feeding in dry lot
after grazing 100 days.

INTRODUCTION

The two preceding tests with heifer calves were conducted without the use of grass. Varying amounts of grain and protein supplement were fed with silage during the winter season and then a full feed of grain was used to finish these heifers for the summer or early fall market.

With experimental pastures available, grass is being used to the fullest extent in developing a system of deferred feeding for fattening heifers.

EXPERIMENTAL PROCEDURE

Wintering Phase

All five lots of heifers, numbered 3 to 7 inclusive, received a full feed of silage, 1/10 pound of ground limestone daily, and salt. Lot 3 was full fed ground shelled corn; 1 pound of cottonseed meal was fed the first 35 days and then increased to 1½ pounds. Lots 4 and 5 received a full feed of silage and ¼ feed of ground shelled corn. The only difference was that the cottonseed meal was increased from 1 pound daily to 1½ pounds daily in lot 4 at the same time it was increased in lot 3.

Mustard Seed Meal. Lots 6 and 7 were wintered on a full feed of silage, 1/10 pound of ground limestone and 1 pound protein supplement. Lot 6 received 1 pound mustard seed meal daily, while lot 7 was fed 1 pound of cottonseed meal daily.

Grazing and Full Feeding

At the close of the wintering phase, Lot 3 was continued on full feed in dry lot and marketed July 2. Likewise, lot 4 was not grazed but was placed on full feed in dry lot following the wintering period. This lot was marketed August 11, 1947.

Lots 5, 6, and 7 were grazed together on bluestem grass without grain until August 2. On August 2, lots 5 and 7 were full fed on grass until marketed October 25. Lot 6 was full fed in the dry lot for this same period.

OBSERVATIONS

Phase I-Wintering

1. Lot 3 heifers were fatter at the close of the wintering period than the other lots.
2. The extra 50 pounds of cottonseed meal, $\frac{1}{2}$ pound daily for 100 days, received by lot 4 over lot 5, accounted for 25 pounds of extra gain. The heifers also showed a slightly greater degree of finish and more bloom.
3. While consuming only 25 percent as much grain as lot 3, lot 4 gained approximately 80 percent as much as lot 3.
4. Mustard seed meal gave practically the same gains in lot 6 as did cottonseed meal in lot 7. More tests need to be made before definite conclusions are made but on the basis of this first test it appears that mustard seed meal is equal to cottonseed meal.
5. A study of the table will provide details of this wintering phase.

Phase II-Early Summer Period

1. Lots 6 and 7 wintered without grain gained about one pound per heifer daily, or slightly more than lot 5, the well wintered lot. Lot 5 still held a 40 pound gain advantage and appeared to be carrying more flesh.

Phase III-Late Summer or Full Feeding Period

1. Lot 6 fed in the dry lot, showed a distinct advantage over lot 7 fed on grass.
 - a. Consumed almost $1\frac{1}{2}$ bushels less corn.
 - b. Gained 52.5 pounds more in the 84 day period.
 - c. Sold for \$1.50 more per cwt.
 - d. Graded approximately 1 grade higher in the carcass.
 - e. Shrank less in transit.
 - f. Dressed slightly higher.
2. This does not entirely agree with all past work done with steers and therefore future work should be carefully observed.
3. One cannot always rely on visual observations. The heifers being fed on grass appeared to be doing better than those in dry lot. The lack of finish however was readily noticeable at market, both on foot and in the cooler.
4. Unfortunately we did not have a well wintered lot to feed in dry lot to check against lot 5 fed on grass. This lot fell between lots 6 and 7 in gain and finish, grading approximately one-half grade below lot 6 and one-half grade above lot 7.
5. The well wintered lot sold \$1.00 per cwt. above lot 7 and \$.50 under lot 6.

1. This test shows a definite advantage in favor of deferring the full feeding of grain and the use of roughage and grass in fattening heifer calves for an early market.
2. Where grass is not available a good wintering before full feeding grain is desirable.
3. Heifers full fed from the start required approximately 100% more corn than was required by heifers that were wintered, grazed and then full fed.
4. The importance of efficient gains is emphasized by comparing lots 6 and 7.

SUMMARY

Table I

Phase I - Wintering
December 5, 1946 to April 24, 1947 - 140 Days

1. Lot Number	3	4	5	6	7
2. Number of heifers in lot	11	11	11	11	11
3. Level of grain feeding	Full Feed	$\frac{1}{2}$ Feed	$\frac{1}{4}$ Feed	No Grain	No Grain
4. Daily winter ration per heifer:					
Silage	10.66	24.90	25.32	26.63	26.69
Ground corn	8.69	2.17	2.17	---	---
Cottonseed meal	1.39	1.39	1.00	---	1.00
Mustard seed meal	---	---	---	1.00	---
Ground limestone	.09	.09	.09	.09	.09
Salt	.05	.05	.06	.07	.10
5. Average initial weight	407	400	401	405	406
6. Average final weight	665	605	580	531	544
7. Average gain	258	205	179	126	138
8. Average daily gain	1.84	1.46	1.23	.90	.96
9. Feed required per 100 pounds gain:					
Silage	578	1701	1980	2959	2789
Ground corn	472	148	170	---	---
Cottonseed meal	75	95	78	---	104
Mustard seed meal	---	---	---	111	---
Ground limestone	5	6	7	10	9
Salt	2	3	5	8	11

Table II

Phase 2 - Early Summer Period
April 24, 1947 to August 2, 1947 - 100 Days

10. Lot Number	3	4	5	6	7
11. Number of heifers in lot	11	11	11	11	10
12. Management followed	Continued on full feed in dry lot and marketed July 2	Placed on full feed in dry lot and marketed Aug. 11	Grazed without grain	Grazed without grain	Grazed without grain
13. Number of days in period	69	109	100	100	100
14. Average daily ration:					
Silage	3.38	5.38			
Alfalfa	3.48	5.01			
Ground corn	11.56	11.69	Grazed	Grazed	Grazed
Cottonseed meal	1.23	1.15			
Ground limestone	.07	.04			
15. Weight per heifer at beginning of early summer period	665	605	580	531	544
16. Weight per heifer at end of early summer period	778	808	665	628	644
17. Gain per heifer early summer period	113	203	85	97	100
18. Daily gain per heifer, early summer period	1.63	1.86	.85	.97	1.00
19. Total corn consumed per heifer-bushels	14.25	22.76	0	0	0

Table III

Phase 3 - late Summer Period
August 2, 1947 to October 25, 1947 - 84 Days

20. Lot Number	3	4	5	6	7
21. Number of days fed	0	0	84	84	84
22. Where fed			Pasture	Dry lot	Pasture
23. Average daily ration:					
Alfalfa			—	7.77	—
Ground corn			12.37	11.40	12.37
Cottonseed meal			1.48	1.00	1.48
24. Weight per heifer at beginning of late summer period			665	628	644
25. Weight per heifer at end of late summer period			830	838	802
26. Gain per heifer, late summer period			165	210	158
27. Daily gain per heifer, late summer period			1.96	2.50	1.87
28. Corn consumed per heifer - bushels			18.56	17.11	18.55

Table IV

Summary of Phases 1, 2 and 3

29. Lot Number	3	4	5	6	7
30. Number of heifers in lot	11	11	11	11	11*
31. Date placed on test	12-5-46	12-5-46	12-5-46	12-5-46	12-5-46
32. Date taken off test	7-2-47	8-11-47	10-25-47	10-25-47	10-25-47
33. Date marketed	7-7-47	8-12-47	10-28-47	10-28-47	10-28-47
34. Duration of experiment in days	209	249	324	324	324
35. Average final weight	778	808	830	838	802
36. Total gain per heifer	371	408	429	433	396
37. Total feeds consumed per heifer:					
Ground shelled corn - bu.	35.98	28.19	23.99	17.11	18.56
Protein supplement-lbs.	278.40	319.68	264.90	224.09	253.54
Silage-lbs.	1725.00	4073.64	3544.55	3728.64	3737.27
Alfalfa hay-lbs.	240.45	546.36		652.72	
Ground limestone-lbs.	17.63	17.63	12.54	12.54	12.54
Grass			Apr. 24 to Oct. 25	Apr. 24 to Aug. 2	Apr. 24 to Aug. 2

* One heifer with calf removed from test on 6-24-47.

Table V

Financial Statement and Marketing Data

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38. Lot Number	3	4	5	6	7
39. Feed cost per heifer:					
Silage	\$ 6.38	\$ 15.07	\$ 13.11	\$ 13.79	\$ 13.83
Alfalfa hay	3.01	6.83		8.16	
Ground corn	86.35	67.65	57.58	41.06	44.54
Protein supplement	13.92	15.98	13.21	11.20	12.68
Ground limestone	.18	.18	.13	.13	.13
Grass			10.00	10.00	10.00
40. Total cost of feed and grass	\$109.84	\$105.71	\$ 94.03	\$ 84.34	\$ 81.18
41. Cost of feed per 100 pounds gain	\$ 29.60	\$ 25.90	\$ 21.92	\$ 19.48	\$ 20.53
42. Initial cost per heifer at \$17.40 per cwt.	\$ 70.82	\$ 69.60	\$ 69.77	\$ 70.47	\$ 70.64
43. Heifer cost plus feed cost	\$180.66	\$175.31	\$163.80	\$154.81	\$151.82
44. Selling price per cwt. at Kansas City	\$ 27.34	\$ 28.00	\$ 26.00	\$ 26.50	\$ 25.00
45. Necessary selling price per cwt. at Kansas City to cover initial cost plus feed cost	\$ 23.43	\$ 22.44	\$ 20.60	\$ 19.02	\$ 19.72
46. Selling price per heifer at Kansas City	\$210.79	\$218.68	\$206.70	\$215.71	\$192.50
47. Margin per heifer above feed cost and initial cost	\$ 30.13	\$ 43.37	\$ 42.90	\$ 60.90	\$ 40.68
48. Average weight at market	771.00	781.00	795.00	814.00	770.00
49. Shrink in transit					
Pounds per heifer	7.00	27.00	35.00	24.00	31.50
Per cent	.89	3.34	4.21	2.86	3.93
50. Dressing percentage	*	*	58.7	58.0	57.8
51. Carcass grades	*				
Choice					
high.....					
average.....					
low.....		1			
Good					
high.....		1			
average.....		7			
low.....		1	1	4	
Commercial					
high.....		1	4	4	1
average.....			4	3	6
low.....			2		3

* Not available