

FATTENING YEARLING HEIFERS FOR THE SUMMER MARKET

Experiment I - 1944-45

A. D. Weber

Introduction.

In tests conducted at the Kansas Agricultural Experiment Station previous to the one reported herein, it was found that heifer calves fed 4 to 5 pounds of grain per head daily during the winter were too fleshy to turn on pasture, hence they could not be used advantageously for deferred full feeding in accordance with the system developed for steer calves. It may be noted in this connection that the standard system approved for good and choice steer calves consists of three phases: (1) producing 225 to 250 pounds of gain during the winter, which usually necessitates the feeding of 4 to 5 pounds of grain per head daily; (2) grazing 90 days without grain; and (3) full feeding 100 days in a dry lot.

On the other hand, it was demonstrated that satisfactory results may be expected when heifer calves are wintered well but fed no grain, then grazed 90 days without grain, and finally, full-fed 100 days in a dry lot for the November market. Thus by taking into account the tendency of heifers to fatten more readily than steers, a modified system of deferred full feeding was developed for heifer calves.

Since the heifer calves fed 4 to 5 pounds of grain per head daily during the winter in these earlier tests were too fleshy for the standard system of deferred full feeding, they were full fed in a dry lot for 50 days beginning about May 1. While the results were reasonably satisfactory, the question immediately arose as to the quantity of grain that heifer calves should receive when they are to be fattened in dry lot for the summer (June to September) market. Considerable interest also developed among cattlemen concerning the influence of a low-protein winter ration on ultimate returns from heifers handled in this manner.

The test reported herein was planned with these problems in mind. It is hoped to develop a standard system of fattening heifers for the summer market without the use of pasture. When a satisfactory dry-lot system has been developed, it will be used as a check in developing a system of fattening heifers for the summer market which includes brome grass pasture.

Experimental Procedure

Detailed results of the test completed in 1945 are given in the tables which follow. It will be noted that each lot received a full feed of silage and one-tenth pound of ground limestone per head daily during the wintering phase. Ground shelled corn and cottonseed meal were fed as follows per heifer daily: Lot 1, corn, full feed; cottonseed meal, $1\frac{1}{2}$ pounds; Lot 2, corn, one-half feed; cottonseed meal, $1\frac{1}{2}$ pounds; Lot 3, corn, 3 pounds, no cottonseed meal; Lot 4, no corn, cottonseed meal, 3 pounds; Lot 5, no corn, cottonseed meal, $1\frac{1}{2}$ pounds.

On April 19, 1945 at the close of the 140-day wintering period, Lot 1 was continued on a full feed of grain and lots 2, 3, 4 and 5 were gradually brought to a full feed. Each lot was marketed after having reached an average weight of approximately 850 pounds per heifer. Marketing information and slaughter data were obtained for each lot.

Observations

1. At the close of the wintering period, the heifers in Lot 1 were fatter than those in any of the other lots. There was considerable trouble with foot rot during the winter, particularly in Lot 1, which may have retarded gains somewhat.

2. The heifers in Lot 2 performed satisfactorily during the wintering phase. On the other hand, the Lot 3 heifers, fed silage, 3 pounds of corn and one-tenth pound ground limestone, had very poor appetites while on this ration, especially toward the end of the wintering phase, and they made unsatisfactory gains. Their hair was harsh and they appeared to be unthrifty.

3. The Lot 3 heifers made a remarkable come-back when cottonseed meal and alfalfa hay were included in their ration during the full feeding period.

4. The Lot 4 heifers, fed 3 pounds of cottonseed meal per head daily made significantly larger gains and more growth during the winter than those in Lot 3, fed a low-protein ration. However, there did not appear to be any particular differences between these two lots of heifers with respect to prominence of hips or smoothness of conformation.

5. The heifers in Lots 3 and 5 were in stocker condition at the close of the wintering period. Those in Lots 1 and 2 were much too fleshy to turn on pasture, while the Lot 4 heifers were on the border line in this respect.

6. Differences in dressing percentages, and carcass grades were too small to be significant hence it would appear that the lots had attained about the same degree of finish when marketed. Variations in selling price per cwt. apparently were due to fluctuations in market prices and not to differences in finish or quality.

7. The results of this test indicate that full feeding grain during the winter to heifer calves that are to be fattened for the summer market is not justified. Further tests are needed to determine how much grain and protein concentrate, if any, should be fed during the winter for best results. However, on the basis of total feeds consumed, especially grain; total gain; date marketed; and margin per heifer, the system represented by Lot 2, fed a half-feed of grain, appears to have an advantage over those represented by the other lots in this test.

Credit is due F. W. Bell for weighing and allotting the steers used in this experiment.

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Phase I - Wintering, November 30, 1944 to April 19, 1945 - 140 days

1-Lot Number	1	2	3	4	5
2-Number of heifers	10	10	10	8	10
3-Average daily ration:					
Ground shelled corn	9.17	4.60	2.82		
Atlas sorgo silage	9.61	23.10	23.06	30.22	31.16
Cottonseed meal	1.50	1.50		2.86	1.50
Ground limestone	0.10	0.10	0.10	0.10	0.10
4-Average initial weight	456.50	456.25	457.50	457.19	456.75
5-Average final weight	698.50	682.00	558.50	642.50	626.50
6-Average gain	242.00	225.75	101.00	185.31	169.75
7-Average daily gain	1.73	1.61	0.72	1.32	1.21
8-Feed cost for 100 lbs. gain-wintering phase	\$ 14.65	\$ 12.14	\$ 15.94	\$ 12.27	\$ 10.21
9-Corn consumed per heifer - bushels	22.93	11.50	7.05	...	...

Phase II - Full feeding, April 19, 1945 until marketed

10-Lot number	1	2	3	4	5
11-Number of days in Phase II	98	98	143	116	148
12-Average daily ration:					
Ground shelled corn	11.43	12.08	12.12	12.04	11.93
Cottonseed meal	1.49	1.43	1.32	1.43	1.31
Atlas sorgo silage	2.72	8.63	5.93	8.77	6.18
Alfalfa hay	0.85	0.80	1.25	1.07	1.25
Ground limestone	0.10	0.10	0.10	0.10	0.10
13-Average initial weight	698.50	682.00	558.50	642.50	626.50
14-Average final weight	855.00	852.00	870.00	865.63	861.50
15-Average gain	156.50	170.00	311.50	223.13	235.00
16-Average daily gain	1.60	1.69	2.10	1.92	1.59
17-Feed cost of 100 lbs. gain - full feeding phase	\$ 18.12	\$ 18.74	\$ 14.73	\$ 16.50	\$ 12.31
18-Corn consumed per heifer - bushels	20.00	21.73	32.04	24.96	31.53

FEED PRICES: Ground shelled corn, \$1.12 per bushel; Cottonseed meal, \$60 per ton;
Atlas sorgo silage, \$5 per ton; Alfalfa hay, \$20 per ton; Ground lime-
stone, \$20 per ton.

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Summary of Phases I and II

19-Lot number	1	2	3	4	5
20-No. heifers in lot	10	10	10	10	10
21-Date placed on test	11-30-44	11-30-44	11-30-44	11-30-44	11-30-44
22-Date taken off test	7-26-45	7-26-45	9-13-45	8-13-45	9-13-45
23-Date marketed	7-30-45	7-30-45	9-17-45	8-15-45	9-17-45
24-Duration of experiment - days	238	238	288	256	288
25-Total gain per heifer	399	396	413	408	405
26-Average final weight	855.0	851.0	870.0	865.6	861.5
27-Av. weight at market	833.0	820.0	840.0	831.3	828.0
28-Shrink in transit:					
Pounds per heifer	22.0	31.0	30.0	34.3	35.5
Percent	2.6	3.6	3.4	4.0	3.9
29-Total feeds consumed per heifer:					
Gr. shelled corn - bus.	42.93	33.28	39.09	24.96	31.58
Cottonseed meal - lbs.	355.00	355.00	196.00	566.00	403.00
Silage - tons	0.80	2.05	2.05	2.62	2.64
Alfalfa hay - lbs.	83.00	81.00	184.00	123.00	184.00
Gr. limestone - lbs.	24.00	24.00	29.00	26.00	29.00
30-Total feed cost per heifer	\$ 63.80	\$ 59.22	\$ 62.04	\$ 59.53	\$ 62.71
31-Feed cost for 100 pounds gain	16.01	14.96	15.04	14.58	15.50
32-Initial cost per heifer at 11.5¢ per lb.	52.50	52.47	52.61	52.58	52.51
33-Marketing expense per heifer	3.27	3.24	3.28	3.26	3.2
34-Initial cost plus feed cost plus marketing expense	119.57	114.93	117.93	115.37	118.51
35-Necessary selling price per cwt. at Kansas City to cover costs listed in Line 33	14.35	14.02	14.04	13.88	14.3
36-Selling price per cwt. at Kansas City	16.50	16.50	16.75	16.15	16.7
37-Selling price per heifer at Kansas City	137.45	135.50	140.70	134.25	138.6
38-Margin per heifer above costs listed in Line 33	17.88	20.37	22.77	18.88	20.1
39-Dressing percentage	60.00	60.60	60.10	60.40	60.4
40-Carcass grades					
Choice (AA)	10	10	10	6	6
Good (A)	--	--	--	2	4

FATTENING YEARLING HEIFERS FOR THE SUMMER MARKET

Experiment II - 1945-46

A. D. Weber and F. W. Bell

Phase I - Wintering. November 29, 1945 to April 18, 1946 - 140 days

1-Lot number	1	2	3	4
2-Number of heifers	10	10	10	10
3- Average daily ration:				
Ground shelled corn	10.06	5.04	2.52	...
Atlas sorgo silage	16.75	25.94	29.65	31.66
Cottonseed meal	1.44	1.44	1.44	1.44
Ground limestone	0.10	0.10	0.10	0.10
4-Average initial weight	514	517	514	516
5-Average final weight	788	738	708	671
6-Average gain	274	221	194	155
7-Average daily gain	1.96	1.58	1.39	1.11
8-Feed cost for 100 pounds gain - wintering phase	\$ 14.68	\$ 13.29	\$ 12.18	\$ 11.15
9-Corn consumed per heifer - bushels	25.15	12.59	6.30	...
10-Appraised value per cwt. May 4, 1946				

FEED PRICES: Ground shelled corn, \$1.12 per bushel; Silage, \$5 per ton; Cottonseed meal, \$60 per ton; Ground limestone, \$20 per ton.

Observations

This is the second test conducted at the Kansas Agricultural Experiment Station in an attempt to develop a standard system of fattening heifers for the summer market without the use of pasture. Each lot received silage, cottonseed meal and ground limestone during the wintering phase. In addition, ground shelled corn was fed as follows: Lot 1, full feed; Lot 2, one-half feed; Lot 3, one-fourth feed; Lot 4, none.

Full feeding was started in lots 2, 3 and 4 on April 18, 1946. It is planned to market each lot when an average weight of approximately 850 pounds per heifer is reached. Marketing information and slaughter data will be obtained for each lot.