

INFLUENCE OF WINTER RATIONS AND GAINS ON SUBSEQUENT PASTURE GAINS

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1. Relative values of Atlas silage, oats straw and combinations of these two roughages.
2. One pound of cottonseed meal versus four pounds of alfalfa hay as a supplement to the above feeds.
3. Feeding cottonseed meal on grass and its effect on late season gains and full feeding results following the grazing season.
4. Wintering yearling steers on bluestem pasture.

INTRODUCTION

This test began with good to choice steer calves. The purpose is to use bluestem grass to the best advantage in producing beef.

Two of the lots were fed out at the close of the first season's grazing and the other three lots have been wintered and will be grazed a second season.

EXPERIMENTAL PROCEDURE

Atlas silage, oats straw and a combination of these two roughages were used in wintering these steers as calves the winter of 1946 and 1947. Lot 1 was full fed silage, lots 2 and 3 were full fed oats straw alone and lots 4 and 5 were fed a one-half feed of silage plus oats straw. All five lots were grazed together on bluestem grass until August 2. From August 2 until October 29, lots 2 and 4 received $1\frac{1}{2}$ pounds cottonseed meal on grass while lots 1, 3, and 5 continued on grass the full season without supplementary feed.

Following the grazing period, lots 4 and 5 were full fed in dry lot. These lots had been wintered alike but lot 4 was fed cottonseed meal on grass.

Lot 3 was wintered on grass with 1 pound cottonseed cake per day until December 16 and $1\frac{1}{2}$ pounds cottonseed cake until May 1. A low grade of prairie hay was fed only when the grass was covered completely with snow. These steers were not fed daily, but only every second day.

Lots 1 and 2 were wintered on silage, prairie hay, and cottonseed meal. Lots 1, 2, and 3 will be grazed together during the summer of 1948. We did not have scales at the pasture during the 1947 grazing season and as a consequence, the steers were weighed only once during the summer, August 2.

OBSERVATIONS

Phase 1-First Wintering

1. Silage and 1 pound cottonseed meal in lot 1 gave larger gains and the steers were showing more condition and much more bloom than the other four lots.

2. Lots 2 and 3, which received oats straw as the only roughage, finished in rather rough condition but all steers appeared to be strong and thrifty. There was a definite tendency for the steers to develop large paunchy middles.

Phase II-Early Summer Period

1. April 24th weights were taken with cattle full, while August 2nd weights were after gathering and trucking 5 miles.

2. All five lots gained practically the same to August 2 regardless of how they were wintered.

3. Lots 2 and 3 wintered on oats straw and gaining only 50 pounds during the winter were slow to start gaining on pasture and shed off late.

4. Lot 4, wintered on silage, was showing some finish and considerable bloom on August 2.

5. Grass was good and abundant.

Phase III-Late Summer Period

1. The level of wintering did not show up in early summer gains but lot 1, the better wintered steers, made only slightly more than one-half the gain made by lots 3 and 5 and also lost their bloom during August, September, and October.

2. One and one-half pounds of cottonseed meal increased the gain more than one pound per day and also increased the appraised value per cwt. 50 cents.

3. Steers fed $1\frac{1}{2}$ pounds cottonseed meal on grass made approximately the same gain as comparable heifers fed $1\frac{1}{2}$ pounds cottonseed meal and a full feed of grain on grass.

Phase IV-Second Wintering Period

1. Lots 1 and 2 have arrived at about the same point as to weight and finish but by different methods of management.

2. Lot 2 steers were poorly wintered the first winter and then went ahead of lot 1 due to cake on grass last summer.

3. Lot 1 outgained lot 2 due to their thinner condition off grass and to the increase in cottonseed meal fed.

4. Prairie hay was bright, green, early-cut hay and proved to be an excellent roughage when fed with silage. The steers to which it was fed made good gains and are carrying considerable flesh.

5. Lot 3, wintered on bluestem pasture, finished in strong condition and made more gain than was expected.

6. A double ration every second day proved to be satisfactory for feeding cottonseed meal on grass.

7. Prairie hay fed lot 3 on winter pasture was exceedingly poor in quality. It was brown, coarse and had been in storage several years. Horses would not eat

this hay. Hay was fed only when grass was completely covered with snow.

8. Lots 4 and 5 were full fed and lot 4 fed cottonseed meal on grass came into the feedlot approximately 100 pounds heavier than lot 5 and carried more condition.

9. Lot 4 held the advantage in weight and finish the first 60 days in the feedlot and were 40 to 50 days ahead of lot 5 due to the fact that they had been fed cottonseed meal on grass.

10. Lot 4 went off feed and lost almost 30 days gain due to no fault of the steers and almost lost their advantage off grass.

11. A careful study of the accompanying tables must be made to get a complete picture of the results of this management test.

Table I

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

1-Lot Number	1	2	3	4	5
2-Number of steers in lot	10	10	10	10	10
3-Average daily winter ration:					
Atlas silage	27.46			13.75	13.75
Oats straw		9.18	7.31	4.81	2.20
Alfalfa hay			4.00		4.00
Cottonseed meal	1.00	1.00		1.00	
Salt	.14	.04	.07	.08	.06
4-Average initial weight	411	411	411	410	412
5-Average final weight	546	461	466	516	510
6-Average gain	135	50	55	106	98
7-Average daily gain	0.96	0.36	0.39	0.76	0.70
8-Cost of feed per 100 pounds gain-wintering phase	\$11.78	\$31.87	\$26.72	\$15.24	\$14.41
9-Feed cost per steer-wintering phase	\$15.91	\$15.94	\$14.71	\$16.17	\$14.12
10-Initial cost per steer	\$80.04	\$80.04	\$80.04	\$80.04	\$80.04
11-Initial cost per steer plus winter feed cost	\$95.95	\$95.98	\$94.75	\$96.21	\$94.16
12-Necessary selling price per cwt. to cover initial cost plus wintering cost	\$17.57	\$20.82	\$20.33	\$18.65	\$18.46
13-Appraised value per cwt. May 3, 1947	\$22.00	\$21.00	\$21.00	\$22.00	\$21.75

FEED PRICES FOR 1946-1947: Cottonseed meal, \$90 per ton; silage, \$5 per ton; oats straw, \$15 per ton; alfalfa hay, \$25 per ton.

Table II

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

14-Lot Number	1	2	3	4	5
15-Number of steers in lot	10	10	10	10	10
16-Weight per steer at beginning of early summer period	546	461	466	516	510
17-Weight per steer at end of early summer period	653	563	586	624	624
18-Gain per steer, early summer period	107	107	120	108	114
19-Daily gain per steer, early summer period	1.07	1.07	1.20	1.08	1.14

Table III

Phase 3 - Grazing, Late Summer Period
August 2, 1947 to October 29, 1947 - 88 Days

20-Lot Number	1	2	3	4	5
21-Number of steers in lot	10	10	10	10	10
22-Amount of cottonseed meal fed per steer daily		1.46		1.47	
23-Total amount of cottonseed meal fed per steer in lbs.		129.50		129.50	
24-Total cost of cottonseed meal per steer		\$ 6.48		\$ 6.48	
25-Weight per steer at beginning of late summer period	653	568	586	624	624
26-Weight per steer at end of late summer period	684	726	645	770	677
27-Daily gain per steer, late summer period	.35	1.79	.71	1.65	.60
28-Total gain per steer, late summer period	31	158	59	146	53
29-Additional gain as a result of feeding cottonseed meal*		99		93	
30-Value of additional gain based on appraised value of steers		23.02		21.86	
31-Value of additional gain less cost of cottonseed meal		16.54		15.38	
32-Value of cottonseed meal per ton based on additional gain secured		\$356.00		\$338.00	

* Lots 2 and 3 were wintered the same and compared to obtain the 99 pound figure, while lots 4 and 5 were wintered the same and compared.

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3/4 28

Table IV

Phases 2 and 3 - Summary of Grazing
 April 24, 1947 to October 29, 1947 - 188 Days

33-Lot Number	1	2	3	4	5
34-Number of steers in lot	10	10	10	10	10
35-Weight per steer April 24	546	461	466	516	510
36-Weight per steer Oct. 29	684	726	645	770	677
37-Gain per steer, grazing season	138	265	179	254	167
38-Daily gain per steer, grazing season	.73	1.41	.95	1.35	.89
39-Cost of grazing per steer	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00
40-Initial steer cost plus feed cost to date	\$105.95	\$112.46	\$104.75	\$112.69	\$104.16
41-Necessary selling price per steer at home to cover initial cost plus feed cost	\$ 15.49	\$ 15.49	\$ 16.24	\$ 14.64	\$ 15.39
42-Appraised value per cwt. October 29, 1947	\$ 23.00	\$ 23.25	\$ 22.75	\$ 23.50	\$ 23.00

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Table V

Phase 4 - Wintering and Full Feeding

Lots 1, 2, and 3, wintered October 29, 1947 to April 14, 1948
168 Days

Lots 4 and 5, full fed October 29, 1947 to February 18, 1948
112 Days

43-Lot Number	1	2	3	4	5
44-Number of steers in lot	10	10	10	10	10
45-Management followed	Wintered dry lot	Wintered dry lot	Grazed	Full fed in dry lot and marketed 2-18-48	Full fed in dry lot and marketed 2-18-48
46-Average daily ration:					
Alfalfa hay				2.02	2.02
Prairie hay	5.23	5.00	1.36		
Silage	38.25	38.25		16.20	14.88
Ground corn				13.70	14.36
Cottonseed meal	1.21	1.06	1.37	1.36	1.36
47-Initial weight per steer October 29, 1947	634	726	645	770	677
48-Final weight per steer, when marketed on April 14	945	935	711	983	970
49-Gain per steer	267	209	66	213	293
50-Daily gain per steer	1.59	1.24	.39	1.90	2.62
51-Total feed consumed per steer during this phase:					7.5
Alfalfa hay				226	226
Prairie hay*	879	840.4	228.2		
Silage	6426	6426		1814	1666
Ground corn				1534.9	1608
Cottonseed meal	203.5	178	229.5	152.5	152.5

* This was bright, green, early-cut prairie hay.

Phase 4 - Wintering and Full Feeding
(continued)

52-Feed cost per steer for this phase:	Lot 1	Lot 2	Lot 3	Lot 4	Lot 5
Alfalfa hay				\$ 2.83	\$ 2.83
Prairie hay	\$ 6.59	\$ 6.30	\$ 1.72		
Silage	23.78	23.78		6.71	6.16
Ground corn				65.85	68.98
Cottonseed meal	10.18	8.90	11.48	7.63	7.63
Winter grass			6.00		
Total	\$40.55	\$38.98	\$19.20	\$83.02	\$85.60
53-Feed cost per steer to date	\$66.46	\$71.40	\$43.91	\$115.67	\$109.72
54-Initial cost per steer	\$80.04	\$80.04	\$80.04	\$80.04	\$ 80.04
55-Initial cost plus feed cost	\$146.50	\$151.44	\$123.95	\$195.71	\$189.76
56-Necessary selling price to cover initial cost plus feed cost	\$ 15.50	\$ 16.20	\$ 17.43	\$ 19.91	\$ 19.56
57-Appraised value or selling price per cwt.				\$ 26.50	\$ 26.00
58-Margin per cwt. above initial cost plus feed cost				\$ 6.59	\$ 6.44
59-Dressing percentage				59.7	58.5
60-Carcass grades					
Choice					
high.....					
average.....					
low.....					1
Good					
high.....				1	
average.....				4	2
low.....				3	4
Commercial					
high.....				1	2
average.....				1	1
low.....				1	1

FEED PRICES FOR 1947-1948: Ground corn, \$2.40 per bushel; cottonseed meal, \$100 per ton; silage, \$7.50 per ton; alfalfa hay, \$25.00 per ton; prairie hay (bright green, early cut), \$15.00 per ton.