

## INFLUENCE OF WINTER RATIONS AND GAINS ON SUBSEQUENT PASTURE GAINS

A. G. Pickett and A. D. Weber

1. The relative values of Atlas silage, oats straw and a combination of these two roughages.
2. One pound of cottonseed meal versus four pounds of alfalfa hay as a supplement to the above feeds.

### INTRODUCTION

Many authorities and successful beef cattle producers have held the belief that the safest long-time beef production system was one that kept the producer in business 12 months of the year. This, of course, means wintering, grazing and under certain conditions, feeding some grain. In the past we have not been in a position here at the college to work out details of the various systems of beef production since experimental grazing land was not available. March 1, 1947 we gained possession of 1,143 acres of bluestem grass which will be used to develop the best systems of beef cattle production. Other problems dealing with grass utilization will also be studied.

Purchasing lightweight, young, good quality steer calves or yearlings in the fall, wintering, grazing and then selling as feeders or giving them a short grain feed and selling on the fall or early winter market, has proved profitable for many cattle men in Kansas. Feeding trials here at the college are being planned to work out details and modifications for such programs.

The use of roughage, protein supplement, and grain in a manner that will make for the most profitable utilization of grass is our main objective.

This year oats straw was fed as the only roughage and in a combination with silage as against silage alone in wintering steer calves.

### EXPERIMENTAL PROCEDURE

Oats straw, Atlas silage and a combination of these feeds were compared when supplemented with 1 pound of cottonseed meal per steer daily in lots 1, 2 and 4 and with 4 pounds of alfalfa hay in lots 3 and 5. Silage was full fed to lot 1, and lots 4 and 5 received one-half as much silage as lot 1 consumed. Oats straw was full fed in all lots where fed. Some straw, especially the heavier part of the stems, was not consumed.

Range-bred Hereford steer calves from southwest Texas were purchased and used in this test. They graded good to choice and were a uniform lot of calves both as to quality and weight when the test started.

### OBSERVATIONS

1. As reported in the past with prairie hay, about 3 pounds of silage were equal to 1 pound of oats straw in satisfying the steers' appetite for

roughage. On this basis lots 3 and 5, which received 4 pounds of alfalfa hay daily, consumed  $1\frac{1}{2}$  to 2 pounds more roughage per head per day but of course did not receive the pound of cottonseed meal as did lots 1, 2 and 4.

2. Silage as a roughage increased salt consumption. Lot 1, with silage as the only roughage, consumed 0.14 pound salt daily while lot 2, receiving oats straw as the only roughage, ate only 0.04 pound salt daily.

3. Four pounds of alfalfa hay gave slightly better results than cottonseed meal when fed as the supplement to oats straw alone but where oats straw was fed in combination with silage, cottonseed meal gave a small increase in gain over alfalfa hay. These differences are small and more work should be done before any conclusions are made.

4. On the basis of prices used in this report, oats straw could not be profitably fed since wintering costs were approximately as high as where silage was fed and gains were much lower. Current prices should always be applied to results shown.

5. Silage and 1 pound of cottonseed meal in lot 1 gave larger gains, the steers were carrying more flesh and much more bloom than the other four lots.

6. Lots 2 and 3 receiving 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 steers in these lots to develop large, paunchy middles.

7. Steers receiving oats straw as a roughage and alfalfa hay as a supplement had a definite craving for the alfalfa hay and cleaned it up to the last stem. Some of the hay used was over-ripe and quite stemmy.

8. Feces from lots 2 and 3 receiving oats straw as the only roughage, were normal with no tendency toward constipation.

9. The table summarizing this test should be studied by those interested in the feeding value of these feeds.

Phase I - Winter, 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-Ration fed	Silage Cotton- seed meal Salt	Oats straw Cotton- seed meal Salt	Alfalfa hay Oats straw Salt	Silage Oats straw Cotton- seed meal Salt	Silage Oats straw Alfalfa hay Salt
4-Average daily ration:	Pounds	Pounds	Pounds	Pounds	Pounds
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
5-Average initial weight	411	411	411	410	412
6-Average final weight	546	461	466	516	510
7-Average gain	135	50	55	106	98
8-Average daily gain	0.96	0.36	0.39	0.76	0.70
9-Feed required for 100 pounds gain:					
Atlas silage	2847	---	---	1816	1965
Oats straw	---	2569	1867	635	314
Alfalfa hay	---	---	1021	---	571
Cottonseed meal	104	280	---	132	---
Salt	14	12	18	10	8
10-Cost of feed for 100 pounds gain	\$ 11.78	\$ 31.87	\$ 26.72	\$ 15.24	\$ 14.41
11-Feed cost per steer	15.91	15.94	14.71	16.17	14.12
12-Initial cost per steer	80.04	80.04	80.04	80.04	80.04
13-Total cost per head to date	95.95	95.98	94.75	96.21	94.16
14-Necessary selling price per cwt. to pay for feed and initial cost	17.57	20.82	20.33	18.65	18.46
15-Appraised value per cwt. May 3					

FEED PRICES: Corn, \$1.40 per bu.; cottonseed meal, \$90 per ton; silage, \$5 per ton; oats straw, \$15 per ton; mustard seed meal, \$50 per ton; ground limestone, \$20 per ton; alfalfa hay, \$25 per ton.