

Table 54.—Three-year summary comparing roughages and supplements for wintering beef heifer calves.

| Average 120 days | | | | | |
|--|--------------|--|--|-----------------------------|---------------------------|
| | Trial number | Atlas sorghum silage, 2 lbs. grain, 1 lb. S.R.M. | Atlas sorghum silage, 3 lbs. special supplt. | Prairie hay, grain, protein | Corn cobs, grain, protein |
| Av. initial wt., lbs. | 1 | 424 | 419 | 419 | 419 |
| | 2 | 296 | 296 | 294 | 296 |
| | 3 | 430 | 431 | 432 | 432 |
| | Av. | 383.3 | 382.0 | 382.0 | 382.0 |
| Av. final wt., lbs. | 1 | 610 | 602 | 592 | 573 |
| | 2 | 483 | 491 | 438 | 437 |
| | 3 | 647 | 695 | 641 | 622 |
| | Av. | 580.0 | 596.0 | 557.0 | 544.0 |
| Av. gain per heifer, lbs. | 1 | 186 | 183 | 173 | 154 |
| | 2 | 187 | 195 | 144 | 141 |
| | 3 | 217 | 264 | 209 | 190 |
| | Av. | 196.7 | 214.0 | 175.3 | 161.7 |
| Av. daily gain per heifer, lbs. | 1 | 1.72 | 1.69 | 1.60 | 1.43 |
| | 2 | 1.65 | 1.73 | 1.27 | 1.25 |
| | 3 | 1.55 | 1.89 | 1.50 | 1.36 |
| | Av. | 1.64 | 1.77 | 1.46 | 1.35 |
| Av. feed per 100 lbs. gain: | | | | | |
| Soybean meal, lbs. | 1 | 58.1 | | 77.5 | 133.1 |
| | 2 | 60.4 | | 77.2 | 120.2 |
| | 3 | 64.5 | | 66.8 | 110.5 |
| | Av. | 61.0 | | 73.8 | 121.3 |
| Grain, lbs. | 1 | 116.1 | | 228.3 | 210.4 |
| | 2 | 120.9 | | 203.0 | 181.5 |
| | 3 | 129.0 | | 200.4 | 184.1 |
| | Av. | 122.0 | | 210.6 | 192.0 |
| Special supplement, lbs. | 1 | | 177.0 | | |
| | 2 | | 173.8 | | |
| | 3 | | 158.8 | | |
| | Av. | | 169.9 | | |
| Atlas sorghum silage, lbs. | 1 | 1763.4 | 1808.7 | | |
| | 2 | 1418.4 | 1355.1 | | |
| | 3 | 1900.0 | 1563.3 | | |
| | Av. | 1693.9 | 1575.7 | | |
| Prairie hay, lbs. | 1 | | | 611.8 | |
| | 2 | | | 508.3 | |
| | 3 | | | 765.1 | |
| | Av. | | | 628.4 | |
| Corn cobs, lbs. | 1 | | | | 590.1 |
| | 2 | | | | 499.5 |
| | 3 | | | | 630.5 |
| | Av. | | | | 573.4 |
| Minerals (bone meal + salt), lbs. | 1 | 6.1 | 6.2 | 8.1 | 5.2 |
| | 2 | 3.6 | 3.5 | 4.6 | 4.0 |
| | 3 | 7.4 | 5.8 | 7.1 | 5.2 |
| | Av. | 5.7 | 5.2 | 6.6 | 4.8 |

Table 54 (Continued).

| | | | | | |
|-----------------|-----|-----|-----|-----|-----|
| Salt, lbs. | 1 | 2.4 | 3.8 | 1.3 | 2.8 |
| | 2 | 1.6 | 1.5 | 3.1 | 2.8 |
| | 3 | 6.1 | 5.9 | 2.4 | 5.2 |
| | Av. | 3.4 | 3.7 | 2.3 | 3.6 |

Alfalfa Silage vs. Alfalfa Hay for Wintering Heifer Calves

PROJECT 370

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Studies conducted at several experiment stations have demonstrated that alfalfa silage will not produce satisfactory gains for wintering young beef cattle, unless it is supplemented with grain or a protein concentrate. This experiment was designed to determine if a combination of alfalfa silage and hay would equal alfalfa hay as a roughage for wintering young beef heifers.

Experimental Procedure

Twenty choice-quality Hereford heifer calves, average weight of 438 pounds each, were used. The heifers were purchased as calves from the Lonker and the Hall-McNally ranches in Barber county, Kansas. Allotment of the heifers was based on weight, feeder grade, and origin.

The alfalfa hay and silage were harvested from the first-cutting growth on the Animal Husbandry farm. The silage was allowed to wilt from one to two hours in the harvesting process.

In the feeding trial, 3 pounds of alfalfa hay was fed to the cattle of Lot 3 to provide readily available protein and dry roughage. The heifers of Lot 3 were maintained at maximum consumption of alfalfa silage, whereas the heifers of Lot 6 were restricted to the same dry matter intake as Lot 3.

Observations

The rate of gain of the heifers fed alfalfa silage was significantly less than that of those fed alfalfa hay. Likewise, the cost of gain of the alfalfa hay-fed cattle was distinctly less.

Table 55.—Alfalfa silage versus alfalfa hay for wintering heifer calves.

(Nov. 15, 1954-April 4, 1955—140 days)

| | | |
|------------------------------|-------|-------|
| Lot number | 3 | 6 |
| Number heifers per lot | 10 | 10 |
| Av. initial wt., lbs. | 438 | 438 |
| Av. final wt., lbs. | 635 | 673 |
| Av. total gain, lbs. | 197 | 235 |
| Av. daily gain, lbs. | 1.41 | 1.68 |
| Av. daily ration, lbs.: | | |
| Ground milo | 4.00 | 4.00 |
| Alfalfa hay | 3.00 | 11.95 |
| Alfalfa silage | 26.78 | |
| Salt | .05 | .04 |
| Mineral | .11 | .10 |

Table 55 (Continued).

| | | | |
|--|---------|---------|--|
| Lbs. feed per 100 lbs. gain: | | | |
| Milo | 284.55 | 238.50 | |
| Alfalfa hay | 213.41 | 712.30 | |
| Alfalfa silage | 1905.48 | | |
| Salt | 3.56 | 2.30 | |
| Mineral ¹ | 7.57 | 5.75 | |
| Feed cost per 100 lbs. gain ² | \$17.31 | \$14.76 | |

1. Mineral composed of 2 parts steamed bone meal and 1 part salt.
2. Feed prices listed on page 3.

Wintering and Grazing Steer Calves

Methods of Wintering Steer Calves That Are To Be Grazed a Full Season and Sold Off Grass, 1954-55.

PROJECT 253-1

F. H. Baker, R. F. Cox, E. F. Smith, D. L. Good, and G. L. Walker

This is a progress report of the wintering phase of the second trial of this experiment. The results of the first trial were reported in Kansas Agr. Exp. Sta. Cir. 308. The experiment is designed to study management methods, levels of feeding, and supplements for wintering steer calves that are to be sold as stocker or feeder yearlings. Results of the experiment are measured by the combined winter and summer performance of the steers.

The current test includes the following comparisons:

1. Wintering in dry lot compared with wintering on dry bluestem pasture.
2. Levels of protein feeding on dry bluestem pasture.
3. A combination of grain and protein concentrate compared with protein concentrate fed on dry bluestem pasture.

Experimental Procedure

Forty choice Hereford steer calves, purchased from the Lonker Ranch in Barber county, Kansas, were used in this experiment. The steers of Lot 1 were wintered in a dry lot at the experimental barn, while those of the other lots were wintered on dry bluestem pasture at the experimental range unit. The pastures had been stocked at a normal rate the previous summer; adequate grass remained for winter pasture. The calves of Lots 2, 3, and 4 were moved from pasture to pasture monthly to minimize any differences due to pasture.

The rations used in the test as well as the results are presented in Table 56.

Table 56.—Wintering and grazing steer calves.
(Nov. 10, 1954-April 6, 1955—147 days)

| Lot number | 1 | 2 | 3 | 4 |
|---------------------------------|---------|------------------|------------------|------------------|
| Number of steers | 10 | 10 | 10 | 10 |
| Place of wintering | Dry lot | Bluestem pasture | Bluestem pasture | Bluestem pasture |
| Initial wt. of steer, lbs. | 521 | 523 | 522 | 519 |
| Final wt. of steer, lbs. | 653 | 534 | 561 | 561 |
| Gain per steer, lbs. | 132 | 11 | 39 | 42 |
| Daily gain per steer, lbs. | 0.90 | 0.08 | 0.27 | 0.29 |

Table 56 (Continued).

| | | | | |
|-------------------------------|-------------|-------------|-------------|-------------|
| Daily ration per steer, lbs.: | | | | |
| Soybean pellets | 1.00 | 1.00 | 1.00 | 2.00 |
| Prairie hay | 12.11 | 1.59 | 1.59 | 1.59 |
| Corn | | | 1.00 | |
| Dry bluestem pasture | | Free choice | Free choice | Free choice |
| Salt | Free choice | Free choice | Free choice | Free choice |
| Minerals | Free choice | Free choice | Free choice | Free choice |
| Feed cost per steer* | \$24.11 | \$11.17 | \$14.99 | \$17.49 |

* Feed prices listed on page 3 of this publication.

Observations

1. The winter was rather severe for feeding cattle on pasture. This, along with the fleshy condition of the calves at the beginning of the winter, may be responsible for the low gains of all the steers wintered on pasture.
2. The condition of the calves at the end of the winter appears to be as good as in years when the gains were higher.
3. The steers wintered in dry lot made gains comparable to those of steers on the same ration in previous years.

Wintering, Grazing, and Fattening Heifers 1953-54.

PROJECT 253-2

F. H. Baker, E. F. Smith, and R. F. Cox

This experiment was designed to study the effect of different wintering management systems on the grazing and fattening performance of beef heifers. Since this report concerns the third trial of the series, a brief summary table of the three years' results and the current year's results is included in the report.

Experimental Procedure

Twenty choice-quality Hereford heifer calves were used in the study. They were delivered to Manhattan, December 1, 1953, at \$18 per cwt., from the Pueblo, Colo., area. The system of management for each lot follows:

Lot 1—wintered on dry bluestem pasture with 1.31 pounds of cottonseed cake per head daily, grazed on bluestem pasture until July 2, full-fed in dry lot 112 days.

Lot 2—wintered on Atlas sorgo silage, 1 pound cottonseed meal, and 2 pounds ground milo per head daily, grazed on bluestem pasture until July 2, and full-fed in dry lot 112 days.

Observations

1. The winter of 1953-54 was mild and very favorable for wintering cattle on dry grass.
2. Although wintering heifers on dry bluestem pasture resulted in lower total gains, dressing percentages, carcass grades, and selling prices, they returned as much money above feed costs as did the heifers wintered in dry lot. This was due primarily to the higher grass gains the following summer and lower winter feed costs of the heifers wintered on bluestem pasture.