

The high level heifers gained 173 pounds during the subsequent summer grazing season resulting in a yearly gain of 268 pounds. The Lot 1 heifers gained 209 pounds during the summer after approximately maintaining their weight during the supplemental winter feeding period. Their yearly gain was 203 pounds. Therefore, the difference which was present in the spring was reduced but the overall yearly gain was 65 pounds in favor of Lot 2.

These heifers will be fed on a low and a high level of supplemental feeding for successive winters until they have produced two calves in order that accumulative effects of winter losses may be studied.

Summary

Winter weight losses of 20 to 30 percent of body weight appear to be detrimental to the production of young cows calving in the fall. These weight losses and the weaning weights of their calves are related to the quantity of supplemental feed. However, the weaning weights of calves from both the low and high level cows have not been satisfactory.

There are probably many factors related to the low weaning weights obtained in these studies. Certainly, there is a substantial decrease in the nutritive value of the forage during the winter. Also, the nutritive requirements are markedly increased during lactation in addition to the requirements for growth. Apparently, the amount of nutrients consumed by the cows was not adequate for growth and desirable lactation.

A notable reduction in winter weight losses resulted when the dry range grass was replaced by prairie hay. Also, weaning weights were increased by this method. The provision of large quantities of supplemental feed decreases considerably the voluntary intake of prairie hay.

Effect of Feeding Cottonseed Meal At Intervals of Two, Four and Six Days To Yearling Heifers Grazing Dry Range Grass

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One of the factors to consider in improving range beef cattle production is efficient use of labor. In many areas range cattle are commonly fed supplemental protein every other day instead of daily. In such cases twice the daily allowance is fed every other day. Weekly feeding of sheep in certain sections of Australia during a drouth has satisfactorily

furnished a subsistence ration for sheep. We are interested in higher production than was present in these tests. In our area we can usually assume that adequate energy can be obtained from the dry grass in the pastures. When this is true, will cattle fed protein supplement at four or six day intervals gain as well as those fed every other day? An experiment to provide such information was started in November, 1960.

Procedure

Thirty yearling Hereford heifers were divided into three lots of 10 head each on November 22, 1960 and each lot was placed in a pasture of about 100 acres of native grass at the Lake Blackwell range area. All heifers were fed an average of 2 pounds of pelleted cottonseed meal per head daily. Those in Lot 1 were fed an average of 4 pounds per head every other day, those in Lot 2 were fed 8 pounds every fourth day, and those in Lot 3 were fed 12 pounds every sixth day. A mineral mixture of 2 pounds salt and 1 pound defluorinated phosphate was available in all pastures.

Results

A summary of the weight gains of the heifers is given in Table 1. In the 137 day period from November 22 until April 8 the heifers fed protein supplement every other day lost 2 pounds, while those fed every fourth day lost 8 pounds per head. Those fed every six days lost an average of 26 pounds, which is considerably more than the losses in the other groups. There was considerable variation in response of individual animals and recommendations should not be made on the basis of results of this pilot test.

Table 1.—Comparison of Supplemental Feeding of Yearling Heifers at Two, Four, and Six-day Intervals (Preliminary Results, 1960-61).

| Lot Number | 1 | 2 | 3 |
|--|--------|--------|--------|
| Interval between Feedings | 2 days | 4 days | 6 days |
| Pounds Cottonseed Meal per Head per Feeding ¹ | 4 | 8 | 12 |
| Number of heifers per lot | 10 | 10 | 10 |
| Average weight per heifer (lbs.) | | | |
| Initial 11-22-60 | 592 | 600 | 605 |
| Spring 4-8-61 | 590 | 592 | 579 |
| Gain (137 days) | -2 | -8 | -26 |

¹ Each heifer received an average of 2 lb. of pelleted cottonseed meal per day.