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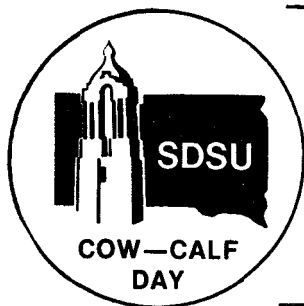
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Winter Feeding Requirements for Beef Cows During Cold Weather Stress

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Dept. of Animal Science Report

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Summary

Three winter feeding trials indicated that pregnant beef cows fed according to NRC standards did not maintain body weight. Improved body weight maintenance resulted when feed was increased during months of cold temperature. Preliminary indications are that small or no differences in calf birth weight, conception rate and calving interval result when levels of winter cow feeding are compared.

Introduction

In finishing rations for cattle and sheep, experimental data have shown that feed requirements increase when the weather is cold or windy. Relatively high priced proteins are wasted when a high energy feed is more suited for cattle under stress due to cold temperatures. Research has aided in furnishing winter feeding guidelines for finishing cattle, but very limited work has been done on winter feeding for pregnant beef cows. These requirements may vary due to stresses of relatively low weather temperatures. By collecting cow weights, calving and breeding data, the effects of varied winter cow rations can be evaluated.

Procedure

Pregnant spring calving cows of the Angus, Hereford and Shorthorn breeds were divided according to age and breed. The winter feeding trial covered the months of December, January and February. Cows in the control lot were fed according to NRC standard requirements. Other cows were fed an additional amount of feed which was calculated from stress needs caused by daily or monthly cold temperatures. Corn silage and chopped oat straw were used to make up the wintering rations. For this trial, cold temperature stress started when 30° F was reached. The total feed offered was increased by 1% for each degree colder than 30° F. The average monthly temperatures at this location for December, January and February were 18°, 12° and 17° F, respectively.

Results and Discussion

Three years of winter feeding trials have been completed. During the first trial, one group of cows was fed according to actual daily temperatures and another group was fed according to the average past year's monthly temperature. The total per head winter gain of 53 pounds and 57 pounds were so similar that it seemed practical to feed only on an average monthly temperature in the later trials and daily temperature adjustments were discontinued. As noted in table 1, changes in cow weight showed some variation from one year to the next. Perhaps all gains were relatively small since the cows were generally in their sixth, seventh or eighth month of gestation.

The group fed according to monthly stress did show per head winter gains which ranged from 13 to 44 pounds greater than the control group. The small gain or loss of cow weight in the control group would indicate that feeding by NRC standards during winter months was insufficient to maintain body weight. Winter cow weight gains may not be an all important factor in the total yearly cow-calf performance program. In cases of cows not maintaining their weight during winter months, there must be a spring or summer season with sufficient feed to enable the cow to maintain her yearly normal weight.

The control and adjusted stressed winter feeding resulted in no differences in birth weight of calves. Average birth weight which differed less than one-half pound per calf was compared for the two levels of cow winter feeding. Preliminary indications are that small differences exist when measuring breeding and calving data of cows on the two levels of winter feeding.

TABLE 1. EFFECT OF ADJUSTING UNDER STRESS FEEDING TO MAINTAIN WINTER COW WEIGHTS

Trial	1977-78	1978-79	1979-80
Per head winter gain or loss (lb)			
Control	+13	-12	+11
Adjusted monthly stress	+57	+15	+24