



Winter Nutrition of Spring Calving Cows on Flint Hills Range

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Summary

Energy appears to be the limiting factor in the rations studied. Three lbs. of milo was superior to 1½ lbs. of soybean meal when date of breeding was considered. In the second trial 3 lbs. of alfalfa and 6 lbs. of milo was superior to 3 lbs. of alfalfa hay and 3 lbs. of milo. Delaying feeding grain until after calving did not give satisfactory results. Possibly additional energy was supplemented too late to be effective.

Introduction

One of the greatest costs in a cow-calf operation is winter feed for the cow. It is desirable to feed as little as possible to maintain satisfactory performance. Increased costs of protein supplements make it more important to evaluate various levels of energy and protein supplement. In this 4-year study, we investigated wintering ration components for cows on Flint Hills pasture.

Experimental Procedure

Eight wintering rations, four per two-year trial, were studied from 1968-1971. Spring-calving Polled Hereford cows were allotted randomly by age to one of the four rations in each trial. Cows were randomly assigned to breeding groups approximately May 20 each year and exposed to bulls. Statistical corrections were made for bull exposed to, year, age, and whether or not a cow calved.

The end points considered here are conception percentages and day of the year conception occurred. Day of conception was calculated using a 283-day gestation period and the day a cow calved the following year. Only cows that calved and rebred were included.

Rations studied in 1967-68 and 1968-69 were designed to compare energy and protein levels (Table 1).

Rations in the second trial were based on the results of Trial 1 (Table 2). Ration 7 had a higher energy level than any ration in Trial 1. Ration 5 was the same as Ration 2 in Trial 1 and Ration 6 was an all-concentrate ration including urea, formulated to approximate Ration 5 (Table 3). Ration 8 studied the timing of energy

supplementation. Cows on Ration 8 started receiving 6 lbs. of milo in addition to their alfalfa hay within one week after calving.

Results

Nutritional treatments significantly affected day conceived. Rations 2 and 1 were significantly superior to both Rations 3 and 4 and Ration 3 was significantly better than Ration 4. Rations 6 and 7 tended to be superior to Rations 5 and 8 although not significantly so.

Cows on Ration 8 conceived significantly later than cows on Rations 6 and 7. Cows on Ration 5 bred significantly later than those on Ration 7.

Day calved significantly affected day bred. Cows conceived an average of 3 to 5 days later for every 10 days calving was delayed, with the most effect on 2-year-old cows.

Table 1. Breeding Results of Trial One

| Items | Ration | | | |
|----------------------|---------|---------|---------|---------|
| | 1 | 2 | 3 | 4 |
| Soybean meal, lb. | 1½ | --- | 1½ | --- |
| Milo, lb. | 3 | 3 | --- | --- |
| Alfalfa hay, lb. | 3 | 3 | 3 | 3 |
| No. Cows | 33 | 32 | 32 | 31 |
| Conception, % | | | | |
| 2 yr. old | 95 | 99 | 92 | 68 |
| 3 yr. old | 100 | 96 | 100 | 100 |
| 4 yr. old | 69 | 63 | 93 | 81 |
| Avg. conception date | June 11 | June 10 | June 20 | June 30 |

Table 2. Breeding Results of Trial Two

| Items | Ration | | | |
|-------------------------|---------|---------|--------|--------------------|
| | 5 | 6 | 7 | 8 |
| Mix ^a , lb. | --- | 5 | --- | --- |
| Milo, lb. | 3 | --- | 6 | 6 after calving |
| Alfalfa hay, lb. | 3 | --- | 3 | 3 |
| No. cows | 46 | 48 | 43 | 38 |
| Conception, % | 92 | 98 | 100 | 88 |
| Avg. conception date | June 17 | June 13 | June 7 | June 22 |

^a given in table

Table 3. Ingredients of Mix Fed in Trial Two

| Feed | 1969 - 70 mix | 1970 - 71 mix |
|--------------|---------------|---------------|
| Milo | 85.5% | 70.5% |
| Wheat | --- | 15.0 |
| Dehy alfalfa | 9.5 | --- |
| Alfalfa hay | --- | 9.5 |
| Urea | 1.0 | 1.0 |
| Limestone | 2.0 | 2.0 |
| Molasses | 2.0 | 2.0 |