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THE WINTERING AND CALVING OF ANGUS BEEF
COWS ON A SANDUST PAD

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ABSTRACT

A system of wintering and calving beef cows on a sawdust cattle pad was compared with the traditional method of wintering unsupplemented cows on hill country pasture. Comparisons were made over four years, beginning in 1970.

Two herds of Angus beef cows were used in the experiment. One herd was originally the Massey University Stud herd, which included approximately 50 cows aged from three to ten. Three-year-old replacements were added to this herd each year. This herd was designated the Stud herd. The other herd designated the Commercial herd, was based on 67 yearling heifers bought in 1969. These cows were all of the same age, and no replacements were added. In 1969 25 cows from this herd were mated to calve at two-years-of-age. The two herds were run together as one unit during the trial, distinction only being made for the purpose of statistical analysis.

The pad consists of two yards with sawdust packed on top of tile drains. A concrete apron runs along the side where the feeding racks are situated. A stand of pampas grass protects the pad from the prevailing wind. Half gates were installed, and the bottom rails of the yard were removed to allow the calves to get out and creep feed on the adjoining pasture.

Three weeks before calving begins cows were allotted to the pad or the hill treatment using a table of random numbers. In 1971, 1972, 1973 a switchover design was adopted, whereby some animals alternated between the two treatments in successive years, while others wintered on the same treatments.

Over 1970 the cows were confined all the time. In 1971 the cows on pad I were allowed to break feed saved pasture over a week. In 1972 and 1973 the cows and calves were removed from the pad for three and four days after birth respectively. This enabled the calf to obtain colostrum without interference, allowed the cow to build up reserves of vitamin A, helped form a bond between the calf and its mother, and enabled the calf to have the benefit of a healthier environment for the first days of its life. This practice appeared to have some merit in reducing the incidence of calf scours.

While confined the cows were fed hay, barley straw, and barley meal. In 1970 some experimentation in feeding levels was necessary, and in 1971, 1972 and 1973, 4.3 kg hay, 2.3 kg barley straw and 0.6 kg of barley meal per head per day were fed.

In 1972 and 1973 feeding once a day was compared with feeding the same ration once every second day.

Before the cows were confined the top three inches of sawdust was removed and the sawdust and timberwork sprayed with a 10% solution of formalin. In 1973 the concrete apron was scraped off weekly with a tractor and blade.

Milk determinations were made by the weigh-nurse-weigh method following a 16 hour separation.

The cows entered the pad about the second week in July, and remained there until the end of September, when they joined their contemporaries on the hill.

Generally the cows wintered on the pad lost more weight than the cows grazed on the hill, although the magnitude of the weight lost varied considerably between years.

Birth weights of the calves born on the pad were generally about 2 kg below that of the calves born on the hill. However, there were no clear differences between treatments for the weaning weights. Limited information gathered on the cow milk production indicated that although milk weights of the cows on the pad were lower during confinement, handicapping the growth of their calves, there appeared to be a surge of milk production in these animals upon their release to the hill pasture, in some years. This resulted in an increased growth rate of the calves from the pad at this time.

Reproductive performance of the three-year-old and mature cows as measured by their calving interval was unaffected by the winter treatments.

The performance of the first calving two-year-old heifers from the Commercial herd in 1970 was adversely affected by the pad treatment. Birth weights and weaning weights were reduced and 26.5% of the heifers failed to rebreed the following season. Nevertheless

subsequent performance demonstrated no further effect of calving at two-years-of-age under adverse conditions.

There was no effect on the calf performance of feeding every day against feeding every second day. Neither was calf performance affected by any of the switching treatments imposed between years.

Differences due to the effect of sex and age of dam were similar to those reported in the literature for birth weight and weaning weight. As the four-year-old dams performed surprisingly well in this study an age-of-dam \times treatment interaction was suspected. There was an indeterminate effect of sex on the milk yield of the dam.

Regressions involving the age of the calf on the weight at various points revealed a strong association of growth with climatic variables. Since the period under study included stormy weather and long droughts this complicated the evaluation of calf growth data.

It was concluded that the pad system of wintering and calving beef cows can be operated as a commercial system in the manner described. A discussion of pad husbandry is given, and recommendations are made.

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