

THE EFFECT ON COWS OF CREEP FEEDING FALL-BORN CALVES

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Creep feeding suckling calves has long been proposed as a method of increasing energy consumption by calves to gain improved performance from the calf without increasing feed costs of the cow. Creep feeding fall-born calves has been shown to be a promising and profitable practice in the high desert area (Foster and Raleigh, 1973). The effect of creep feeding has not been associated with a possible effect on the cow, but is generally limited to observing the calf's response. This work was initiated to determine the effect of the cow's supplement on the calf as well as the calf's supplement (creep) on the cows.

Experimental Procedure

In trial 1, 104 cow-calf pairs that were calved in October and November were stratified to treatment on the basis of previous treatment, age, and production index of the cow, and age, weight, and sex of the calf. The study design was a 2 x 2 x 2 factorial with two levels of energy and two sources of N for the cow and two levels of creep for the calves. The data for effect of daily cow supplementation and effect of creep feeding on the calves are presented in companion paper. The cow herds were placed in adjoining pastures. The creep arrangement was identical in both pastures except no feed was placed in the feeder on the no creep feed side. Feed (table 1) was placed in a wooden self feeder inside the enclosed creep area which was bedded with straw and had a windbreak on the west side. Windbreak areas were about in the middle of each of the fields. There was one automatic waterer in each field. Loose native meadow hay was fed ad libitum each morning after the cows received their daily supplement. Salt and a salt-bonemeal mix were available at all times.

The cows were moved off native range in September (previous calves having been weaned August 1) and grazed on meadow aftermath and rake-bunched meadow hay in common until initiation of the trial on December 9. Calves were born in October and November. The cows were bred during a 60 day breeding season starting January 2 and were pregnancy tested by a licensed veterinarian about 65 days following the end of the breeding season. Final weights were taken on March 31.

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TABLE 1. CREEP RATION TRIALS 1 AND 2 ^{a/}

Ingredient ^{b/}	Percent
Alfalfa	80
Barley	13
Molasses	5
Salt	2
Total	100

^{a/} Creep fed free choice.

^{b/} 75 mg of Terramycin and 20,000 IU of vitamin A per 454 grams of feed.

The following year, trial 2 was conducted with 92 cow-calf pairs, allotted on the basis of the previous year to the same experimental design, with cattle handled the same in the fall. The study was initiated on December 23 and ended on March 16. All statistical analysis was by AOV (Steel and Torrie, 1960). Analysis of conception rate was done following transformation to Arcsin (percentage).^{1/2}

Results and Discussion

Results (table 2) as measured by cow weight change over the winter and conception rate, as determined by pregnancy test, indicated a decreased performance of cows whose calves had been creep fed. Cows with creep fed calves lost 9.67 kg and 36.02 kg for trials 1 and 2, respectively, for an average weight loss of 22.85 kg for both years. Cows with calves on no creep feed lost 1.70 kg and 12.95 kg for trials 1 and 2, respectively, or 7.32 kg average. The difference in trial 2 weight change was significant ($P < .01$). Conception rate followed the same trend as weight change. Cows with creep fed calves had an average conception rate of 80% and 85% for trials 1 and 2, respectively. Cows whose calves received no creep feed averaged 91% conception with 89% and 94% for trials 1 and 2, respectively. The difference being significant ($P < .05$) only in trial 2. Both weight change and conception rate were different ($P < .01$) between trials 1 and 2.

TABLE 2. COW PERFORMANCE

Treatment	Weight loss			Conception rate		
	Trial 1	Trial 2	Avg.	Trial 1	Trial 2	Avg.
	kg	kg	kg	%	%	%
Creep	9.67	36.02	22.85	80	85	83
No creep	1.70	12.95	7.32	89	94	91

The reason for the adverse effect of creep feeding on cow performance is not clear at this time. The same individual fed both groups in a manner assuring each group ad libitum hay intake. The creep fed calves were gaining more ($P < .01$), were heavier, and thus, might have consumed more hay than non-creep fed calves. It is possible they put more demand on the mothers for milk.

Summary

One hundred four cow-calf pairs that were calved in October and November were stratified by previous treatment, age, and production index of the cow, weight, age, and sex of the calf in a $2 \times 2 \times 2$ factorial with two levels of energy for the cow, two sources of N for the cow and two levels of creep for the calf (reported by Foster and Raleigh, 1973ab). The results reported in this paper are for the effect of creep feeding the calf on the performance of the cows. Winter weight losses and conception rate were 9.67 kg, 80%; and 36.02 kg, 85% for cows with creep fed calves in trials 1 and 2, respectively; 1.70 kg, 89%; and 12.95 kg, 94% for cows with non-creep fed calves in trials 1 and 2, respectively. Differences between creep feed levels in trial 1 were not significant although they followed the trend of trial 2 which were different for weight loss ($P < .01$) and conception rate ($P < .05$). It would appear that creep feeding the fall-born calf might have some deleterious effect on the dam. An explanation is not conclusive at this point and research is continuing on the effect.

Literature Cited

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