INFLUENCE OF 96 HOUR CALF SEPARATION ON REPRODUCTIVE PERFORMANCE OF RANGE COWS

R.P. Wettemann[1], K.S. Lusby[1] and G.E. Selk[2]

Story in Brief

Forty-nine mature Angus and Hereford cows were used to evaluate the effect of 96-hr calf separation on reproductive performance of cows and growth of calves. Calves were separated as a group from half of the cows when the cows were between 28 and 105 days post partum. Pregnancy rate and days to conception were not altered by 96-hr calf separation. Calf separation did not have an adverse effect on calf health or weaning weight. Although reproductive performance was not improved by calf separation in this study, separation of calves from cows shortly before the onset of normal estrous cycles may be beneficial and should be evaluated.

Introduction

Two major factors that regulate the length of the interval from calving to conception in beef cows are nutrient intake before and after calving and suckling. If nutrient intake is inadequate and body energy reserves are depleted, the interval from calving to the first estrus is extended. Suckling also inhibits the resumption of normal estrous cycles after calving and the interval can be shortened by 48 hour calf separation or once daily suckling. However, the effects of short term calf separation are very inconsistent and probably related to when a cow is separated from her calf relative to the time that the cow will exhibit spontaneous estrus. The purposes of this study were to determine if a longer interval of calf separation, 96 hours, may produce a more consistent response as far as the initiation of estrous cycles in anestrous cows, and to determine if 96 hour calf separation has a detrimental effect on calf growth.

Materials and Methods

Thirty-four mature Angus and 15 Hereford cows that calved between February 19 and May 7, 1985 were used in this study. Cows with an average body condition score of 5.2 (BCS; 1 = emaciated, 9 = obese) were allotted to treatment based on breed of cow and calving date. Calves either remained with cows continuously (control) or were separated from cows for 96 hours for one period (June 4) when cows were between 28 and 105 days post partum. Sixty-seven percent of the cows were between 40 and 90 days post partum at calf separation. Cows were in a pasture adjacent to the pen where calves were held during calf separation and control cows and their calves were kept in a separate pasture. A

[1]Professor [2]Assistant Professor

fertile bull equipped with a chin-ball marker was with the cows beginning May 1 for 90 days.

Blood samples were obtained 7 days before, on the day of calf separation and at 7, 14 and 21 days after the start of calf separation. Concentrations of progesterone in plasma greater than 1 ng/ml at two weekly bleedings indicated the onset of ovarian luteal activity. Pregnancy rate was determined at 75 days after the end of the breeding season. Date of conception was calculated by subtraction of 280 days from the subsequent calving date.

Table 1. Influence of 96 hour calf separation on reproductive performance of range cows.

	Treatment	
Criteria	Control	Calf separated
Cows, No.	25	24
Cycling cows at calf separation, No.	10	10
Non-cycling, %	60	58
Cows that started cycling after separation, No.	7	10
%	47	71
Cows cycling at 3 weeks after calf separation, %	68	83
Cows pregnant by 10 days after calf separation, %	62	56
Pregnancy rate, %	84	83
Days from calving to conception	83±4	78±5

Results and Discussion

At the time of calf separation, about 40% of the cows were cycling, based on concentrations of progesterone in plasma. Calf separation did not significantly enhance the percentage of cows with ovarian luteal activity. Ovarian luteal activity was initiated in 71% of the non-cycling cows after calf separation and 47% of the control cows started cycling.

The percentage of cows cycling at three weeks after calf separation was not influenced by calf separation. In addition, calf separation did not influence the number of cows pregnant by 10 days after calf separation or the number of days from calving to conception. Separation of calves from cows for 96 hr did not have an adverse effect on the health of calves and weaning weights were not altered.

This study indicates that 96 hr calf separation was not a major stimulus for the initiation of estrous cycles in these anestrous cows. Although about 60% of the cows were anestrus when calves were separated and there was a tendency for more of the separated cows to have estrous cycles at 3 weeks after separation, reproductive performance was not improved by 96 hr calf separation.

Results of previous studies have suggested that calf separation may stimulate the onset of estrous cycles if cows are within a few weeks of their first postpartum estrus. The average days after calving to conception for the cows in this study was about 80. If calf separation was performed at about 60 days postpartum, the response may have been more beneficial compared with separation of calves from cows between 40 and 90 days postpartum. In any case, calf separation did not have a detrimental effect on calf performance and may be useful under some conditions.