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W. R. Trevillyan
South Dakota State University

M. MacnNeil

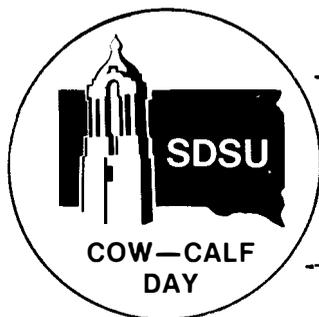
C. A. Dinkel

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EFFECT OF TEMPORARY CALF SEPARATION ON DAY OF FIRST SERVICE AND CONCEPTION AT FIRST SERVICE

W.R. Trevillyan, M. MacNeil and C.A. Dinkel

Dept. of Animal Science
Experiment Station

South Dakota State University
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Summary

The effect of two separations a week apart lasting for 48 hours each on day of first service was small and nonsignificant (2 days) when all cows were considered and significant (4 days) for cows with postpartum intervals greater than 50 days. The three breed groups, Hereford, Angus-Hereford cross and Simmental-Hereford cross cows, did differ significantly in their response to the treatment, but this appeared to be related to the age of the cows. The Hereford and Simmental-Hereford cross cows, primarily all mature cows, responded similarly to the treatment showing no effect from the calf separation regardless of postpartum interval. The Angus-Hereford cows, all lactating 3-year-olds, did respond to the treatment, coming into estrus 5 days early which raises the possibility that calf separation may be a useful management technique for 2- and 3-year-old lactating cows. This conclusion will need support from further research. For those Angus-Hereford cows with postpartum intervals greater than 50 days, the treatment resulted in cows coming into estrus 9 days early.

Introduction

Results of several experiments have indicated the possible effectiveness of temporary calf separations from the cow, both in bringing cows into estrus early and in some cases improving conception rate. It has been demonstrated that frequency of lactation affects the reproductive ability of the cow and it is thought these temporary separations might be involved in this manner. The technique is a part of one of the currently used research methods in estrus synchronization and appears to be useful in conjunction with the hormone treatment. This study was undertaken to determine if calf separation technique would be useful when synchronization was not being attempted.

Procedures

One hundred thirty-six cows of the Hereford, Angus-Hereford and Simmental-Hereford breed groups at the Antelope Range Livestock Station with postpartum intervals of 39 days or greater on first day of the breeding season were divided into two groups (control and separated) to study the effect of two calf separations each of 48 hours duration 1 week apart on day of first service and conception rate. The two groups were balanced with regard to breed group, age of calf, age of dam and management group (regular and super). The calves were separated on May 23 for 48 hours and again a week later with the breeding season starting on June 1. The cows were

artificially inseminated until July 5 (33 days), when clean-up bulls were turned out. Data reported here are the dates of service for those cows detected in heat during the AI period and conception rates based on palpation September 22.

Results

The effects of separation (table 1) were small and nonsignificant (2 days) when all cows were considered. Considering only those with postpartum interval (interval from calving to breeding) of 50 days or greater, the treatment effect of 4 days was significant. However, further consideration of treatment effects on individual breeds indicates that this effect is primarily restricted to one breed group.

Breed group effects were significant for all cows as well as for those with postpartum intervals greater than 50. However, the difference appears to be primarily that of a difference in age of cow. The Hereford and Simmental-Hereford cows were primarily all mature, while the Angus-Hereford cows were all lactating 3-year-olds. Considering the treatment and breed groups separately, there appeared to be little, if any, treatment effect in the Hereford and Simmental-Hereford groups, with the greatest treatment effect being 3 days in the Simmental-Hereford cows with postpartum intervals greater than 50. In the case of the Angus-Hereford cows, the separated group came into estrus 5 days earlier considering all cows, and 9 days earlier, considering only those with postpartum intervals greater than 50.

Conception rates based on palpation indicated no significant differences for treatment, breed or the interaction of the two. Some differences were present but with the small number of cows do not appear repeatable.

These results indicate the possibility that calf separation technique might be a useful management tool for young cows. Further research will be necessary to verify this and to clarify the breed effect. The overall treatment effect in this study was largely due to the response of the Angus-Hereford cows. These effects on day of first service were not as large as some previously reported, but it does appear that this treatment may be sensitive to other factors of management such as postpartum interval, age of dam and possibly breed effect.

Since the normal nursing routine is disrupted by the temporary separation of the cow and calf, there is interest in whether this influences the weight of the calf at weaning. Reports of the effect of calf separation on weaning weights have been somewhat variable, with the majority indicating no effect. Weaning weights were not available at the time of the preparation of this report but will be furnished in later reports concerning this work.

Table 1. Effect of Calf Separation on Postpartum Interval, Day of Service and Conception Rate

Treatment	All cows				Cows with PPI <50			
	PPI ^a days	Day of service	Concep- tion rate %	n	PPI days	Day of service	Concep- tion rate %	n
Separated	75	163	96	73	79	161	96	47
Control	76	165	96	63	82	165	98	42
Hereford	76	162	93	41	79	160	97	30
Angus x Hereford	77	167	96	42	85	167	97	25
Simmental x Hereford	73	162	98	53	78	162	98	34
Sep.-H	75	163	96	23	79	160	100	15
Sep.-AH	76	165	96	22	82	163	94	14
Sep.-SH	74	163	96	28	77	161	95	18
Con.-H	77	161	91	18	79	161	94	15
Con.-AH	79	170	96	20	88	172	100	11
Con.-SH	73	163	100	25	78	164	100	16

^a PPI = postpartum interval = interval from calving to breeding.