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# Conception rates in synchronized heifers bred at various times after onset of estrus

## Abstract

One hundred seven of 112 heifers were in estrus 1 to 5 days after an injection of prostaglandin F<sub>2α</sub> given when a 7-day synchronization implant was removed. Checks for estrus were made every four hours and heifers were bred 6, 10, 14, 18, 22, or 26 hours after being detected in estrus. Eight heifers were not bred on schedule. Sixty-seven of 99 (67.7%) bred on schedule conceived to first artificial insemination. Conception rates were similar in heifers bred 6 to 26 hours after being detected in estrus, no differences were noted in conception rates between A.M. and P.M. breedings.

## Keywords

Report of progress (Kansas State University. Agricultural Experiment Station); 291; Cattlemen's Day, 1977; Beef; Conception rates; Synchronization; Estrus

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## Conception Rates in Synchronized Heifers Bred at Various Times After Onset of Estrus

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### Summary

One hundred seven of 112 heifers were in estrus 1 to 5 days after an injection of prostaglandin  $F_{2\alpha}$  given when a 7-day synchronization implant was removed. Checks for estrus were made every four hours and heifers were bred 6, 10, 14, 18, 22, or 26 hours after being detected in estrus. Eight heifers were not bred on schedule. Sixty-seven of 99 (67.7%) bred on schedule conceived to first artificial insemination. Conception rates were similar in heifers bred 6 to 26 hours after being detected in estrus; no differences were noted in conception rates between A.M. and P.M. breedings.

### Introduction

We previously reported synchronization of estrus with no effect on conception rate in heifers given prostaglandin  $F_{2\alpha}$ . This study was to determine if conception rates would be changed by breeding 6 to 26 hours after the onset of estrus in synchronized heifers and if conception varies between A.M. and P.M. breedings.

### Experimental Procedure

Syncro-mate B (6 mgs., G. D. Searle Co.) was implanted in one ear of 112 cycling heifers to prevent estrus. Seven days later prostaglandin  $F_{2\alpha}$  (33.3 mgs. THAM salt, The UpJohn Co.) was injected intramuscularly after the implant was removed from 56 of the heifers in the morning (AM) and 56 heifers that night (PM). The heifers, confined to drylot, were observed for estrus every four hours during a five-day period. Heifers were then bred artificially 6, 10, 14, 18, 22, or 26 hours after being detected in estrus. Heifers detected in estrus at each time were divided into A.M. and P.M. breedings. Conception rates were determined by rectal palpation.

### Results and Discussion

Ninety-four of the 112 heifers (83.9%) were in estrus in a three-day period and 107 of 112 (95.5%), in a five-day period. Three of the 107 synchronized heifers were not bred at their first synchronized estrus. Seventy-two of the 104 heifers (69.2%) synchronized and bred conceived the first insemination. Five of the 104 heifers were not bred according to the experimental breeding schedule. Conception rates for the remaining 99 in the 6, 10, 14, 18, 22 and 26 hour breeding groups were 67, 60, 71, 68, 53 and 87 percent, respectively.

The synchronization results do not differ from those reported in previous years. This procedure resulted in approximately 95% of cycling heifers showing estrus in a four-day period. The results suggest that there is no difference in conception rates from breeding in the morning or evening. Also, we can breed as early as 6 hours or as late as 26 hours after onset of estrus and still get a good first-service conception rate.

Table 2.1. Estrus and conception rates in heifers treated with Syncro-mate B and prostaglandin.

Days post treatment <sup>a</sup>	1	2	3	4	5	Total
No. in estrus	26	47	21	12	1	107 <sup>b</sup>
No. conceived 1st service	16	30	16	9	1	72
1st service conception	61.5	63.8	76.2	75.0	100.0	69.2 <sup>c</sup>

<sup>a</sup>Implant removed day 0.

<sup>b</sup>Five of 112 heifers showed no signs of estrus during the 5 days.

<sup>c</sup>Three heifers found in heat were not bred and are not included in first service conception data.

Table 2.2. Conception rates of synchronized heifers bred at indicated times after onset of estrus.

Hours bred after estrus detected <sup>a</sup>	6	10	14	18	22	26	Total
No. of heifers bred at: 8 a.m.	6	9	6	12	7	10	50
8 p.m.	12	6	11	7	8	5	49
% Conception 1st service of heifers bred at: 8 a.m.	67	56	67	67	57	100	70
8 p.m.	67	67	73	71	50	60	65
% Conception by breeding period	67	60	71	68	53	87	67.6

<sup>a</sup>Estrus checked every four hours.