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## Conception rates of beef heifers treated with GnRH analog at the time of estrus or at the time of artificial insemination.

### Abstract

Injecting a GnRH-analog at the time of estrus or at insemination did not generally improve conception rates in heifers inseminated following a synchronized estrus. However, within some herds, a significant positive response was noted.

### Keywords

Cattlemen's Day, 1989; Kansas Agricultural Experiment Station contribution; no. 89-567-S; Report of progress (Kansas State University, Agricultural Experiment Station and Cooperative Extension Service); 567; Beef; Conception rates; GnRH; Estrus; Artificial insemination

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### Authors

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**CONCEPTION RATES OF BEEF HEIFERS TREATED  
WITH GnRH ANALOG AT THE TIME OF ESTRUS OR  
AT THE TIME OF ARTIFICIAL INSEMINATION<sup>1,2</sup>**

**L.R. Corah, W.E. Beal,<sup>3</sup>  
J.S. Stevenson, and M.F. Spire<sup>4</sup>**

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**Summary**

Injecting a GnRH-analog at the time of estrus or at insemination did not generally improve conception rates in heifers inseminated following a synchronized estrus. However, within some herds, a significant positive response was noted.

**Introduction**

Recent research in Kansas has shown that gonadotropin releasing hormone (GnRH) has improved conception rates in dairy females, particularly in those inseminated on the second and third estrus. The objective of our study was to determine the efficacy of GnRH in beef heifers following estrus synchronization.

**Experimental Procedures**

Three hundred and seventy-nine yearling beef heifers in five commercial Kansas herds were used to determine if administering gonadotropin releasing hormone analog (GnRH-a Fertinelin acetate) improved conception rates following artificial insemination. Heifers in good body condition were fed .5 mg MGA<sup>®</sup> per head daily for 14 days. Prostaglandin (Lutalyse<sup>®</sup>) was injected I.M. 17 days after the last day of MGA feeding. Heifers exhibiting a synchronized estrus received 1) no treatment (control), 2) 100 micrograms GnRH-a I.M. at the time of estrus detection (GnRH-E), 3) 50 micrograms of GnRH-a at the time of insemination (GnRH-B-50), or 4) 100 micrograms GnRH-a at the time of insemination (GnRH-B-100). All heifers were inseminated 12 hours after estrus detection. Semen and inseminators were assigned randomly among treatment groups at each location. Data were analyzed by analysis of variance procedures appropriate for categorical data, with location and treatment as main effects.

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<sup>2</sup>Appreciation is expressed to cooperating commercial cattlemen, Gary Johnson, Craig Johnson, Ken Stielow, Larry Wickstrum, and Rodney Oliphant.

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## Results

Results are shown in Table 7.1. There was no effect due to any GnRH treatments, and the treatment x location interaction was not significant. The administration of 50 micrograms GnRH-a at the time of insemination raised the mean conception rate by 9%, but the effect was not statistically significant.

Table 7.1. Effect of GnRH Treatment at Estrus or at the Time of Artificial Insemination on First Service Conception Rates of Heifers

| Treatment          | No. Heifers | Conception Rate (%) |
|--------------------|-------------|---------------------|
| <u>3 Locations</u> |             |                     |
| Control            | 80          | 71.3                |
| GnRH-B-50          | 68          | 80.9                |
| GnRH-B-100         | 71          | 76.1                |
| <u>2 Locations</u> |             |                     |
| Control            | 54          | 66.7                |
| GnRH-E             | 49          | 57.1                |
| GnRH-B-100         | 57          | 59.6                |