1992

Effect of Lutylase or Bovilene on Conception Rate to Artificial Insemination of Heifers

T. B. Goehring
South Dakota State University

D. M. Marshall
South Dakota State University

EFFECT OF LUTYLASE OR BOVILENE ON CONCEPTION RATE TO ARTIFICIAL INSEMINATION OF HEIFERS

T.B. Goehring[1] and D.M. Marshall[2]
Department of Animal and Range Sciences
CATTLE 92-13

Summary

Calving records from 306 two-year-old heifers were used to compare the effect of Lutylase or Bovilene on first-service conception rate as part of an estrus synchronization and artificial insemination program. There was no difference (P=.91) between products in the percentage of heifers conceiving to artificial insemination following estrus synchronization.

(Key Words: Lutylase, Bovilene, Prostaglandin, Synchronization.)

Introduction

Pharmaceutical advancements have resulted in the clearance of three prostaglandin products for estrus synchronization of beef cattle. These include a natural preparation, trade name Lutylase[3], and two synthetic preparations, trade names Bovilene[4] and Estrumate[5]. Currently, there is considerable opinion but little research data comparing prostaglandin products for estrus synchronization and artificial insemination. The objective of this field research was to compare the effectiveness of Lutylase or Bovilene for estrus synchronization and artificial insemination for replacement heifers.

The effect of Lutylase or Bovilene on estrus synchronization response was reported in South Dakota Beef Report 91-19. The effect of Lutylase or Bovilene on first-service conception rate is reported herein.

Materials and Materials

A total of 533 yearling heifers were synchronized with MGA[6] and prostaglandin injection at three locations. Beginning 33 days prior to the start of breeding, heifers were fed .5 mg per head per day of MGA for 14 consecutive days. Seventeen (17) days after the last day of MGA feeding, heifers were injected with either Bovilene or Lutylase according to label directions. Specifically, either 5 cc of Lutylase were injected into the muscle or 2 cc of Bovilene were injected under the hide (subcutaneous). Heifers within a location were allotted to prostaglandin treatment according to birth date when possible. Heifers were subdivided into five injection groups within the three locations. Injection groups 1 to 3 were managed on one ranch, group 4 on a second ranch, and group 5 heifers were managed at the SDSU Range and Livestock Research Station near Philip.

Heifers were artificially inseminated if they came into estrus within 5 days of injection. A heifer was inseminated approximately 12 hours after being first detected in estrus.

Only heifers with 1992 calving dates were included in the statistical analysis of first-service conception rate. Attrition from the study occurred due to being open in the fall of 1991, aborting before calving, or a pregnant heifer was sold and calving date was not recorded. Calving dates were available for 141 heifers injected with Bovilene and 165 heifers

---

[1]Assistant Professor.
[2]Associate Professor.
[3]The Upjohn Company, Kalamazoo, MI.
[4]Syntex Animal Health, Des Moines, IA.
[5]Haver, Shawnee, KS.
[6]Melengestrol acetate, The Upjohn Company, Kalamazoo, MI.

injected with Lutylase. Gestation length was calculated from the date of insemination. Heifers with a gestation length of 291 days or less were considered to have conceived to artificial insemination.

Independent variables included in preliminary statistical models evaluating first-service conception rate included prostaglandin treatment, injection group, and the treatment x group interaction. The treatment x group interaction was not significant and was therefore dropped from the final analysis.

Results and Discussion

Prostaglandin treatment had no effect (P=.91) on first-service conception rate. Conception rates were 75.8% for Lutylase and 76.3% for Bovilene. Although these values represent a biased estimate of first-service conception rate due to the loss of heifers from the study, the relative difference between products is an accurate evaluation. Attrition from the study occurred at random and was equal between products.

Based on the heat detection data reported previously and the conception data reported herein, it would appear that the choice between Lutylase and Bovilene should be based on economics and operator preference in giving intramuscular or subcutaneous injections, as no biological differences were noted.

Appreciation is expressed to Ed and Rich Blair, Blair Ranches, Sturgis; Reuben and Connee Quinn, Quinn Cow Company, Pine Ridge; and to Ron Haigh, Range and Livestock Research Station, Philip, for supplying cattle and to representatives of The Upjohn Company and Syntex Animal Health for supplying prostaglandin product.