Kansas Agricultural Experiment Station Research Reports

Volume 0
Issue 1 *Cattleman's Day (1993-2014)*

Article 1006

1987

Effect of several spaying methods on grazing heifer gains

Gerry L. Kuhl

T. Goehring

B. Ritter

See next page for additional authors

Recommended Citation

Kuhl, Gerry L.; Goehring, T.; Ritter, B.; Laudert, S.; and McCully, W. (1987) "Effect of several spaying methods on grazing heifer gains," *Kansas Agricultural Experiment Station Research Reports*: Vol. 0: Iss. 1. https://doi.org/10.4148/2378-5977.2409

Effect of several spaying methods on grazing heifer gains

Abstract

Several spaying and ovarian autografting methods were tested in three field trials with 658 grazing heifers. None of the techniques examined were found to have a beneficial effect on heifer gains compared to intact controls. Heifers' initial weight, frame size, and body condition score were associated with cattle performance; however, their relative impact on gains varied across the three trials.

Keywords

Cattlemen's Day, 1987; Kansas Agricultural Experiment Station contribution; no. 87-309-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 514; Beef; Heifer; Performance; Spaying; Ovarian autografting

Authors

Gerry L. Kuhl, T. Goehring, B. Ritter, S. Laudert, and W. McCully

Effect of Several Spaying Methods on Grazing Heifer Gains[1]

Gerry Kuhl, Terry Goehring, Bob Ritter[2], Scott Laudert[2], and William McCully[3]

Summary

Several spaying and ovarian autografting methods were tested in three field trials with 658 grazing heifers. None of the techniques examined were found to have a beneficial effect on heifer gains compared to intact controls. Heifers' initial weight, frame size, and body condition score were associated with cattle performance; however, their relative impact on gains varied across the three trials.

Introduction

Interest in spaying heifers as a means of improving performance and preventing pregnancy has been renewed. Moreover, it has been suggested that transplanting a section of the ovary to other areas of the body (termed autografting) will stimulate heifer growth through estrogen production from the transplant, but suppress estrous activity.

Several different techniques for spaying and autografting have been developed in recent years. The Kimberling-Rupp (K-R) intravaginal spay technique is an alternative to the traditional flank spay (FS) method. The flank spay plus autograph (FS+A) technique involves placing a small piece of ovarian tissue into the ruminal wall. More recently, a rather crude form of ovarian autografting using the K-R method has been suggested. This technique involves simply dropping the excised ovaries inside the peritoneal cavity (K-R + Ovary Drop) instead of removing them from the body. Field trials were conducted to determine the effect of these spaying alternatives on gains of grazing heifers.

Experimental Procedures

Three field trials involving a total of 658 yearling, mixed breed heifers were conducted in south central Kansas. In trial 1, treatments included: 1) intact controls; 2) Kimberling-Rupp vaginal spay, with ovaries removed (K-R); 3) Kimberling-Rupp vaginal spay, with the ovaries dropped intraperitoneally (K-R + Ovary Drop); and 4) flank spay, with rumen-ovarian autograft (FS+A). In trials 2 and 3, treatments included: 1) intact controls; 2) flank spay, with ovaries removed

[1]Sincere appreciation is expressed to Innis Croft, Croft Farms, Anthony, KS for supplying cattle and facilities; to Drs. Dean Bertholf and Gary Schulteis, Anthony Veterinary Clinic, Anthony, KS and Dr. Scott Crain, Country Vet Clinic, Meade, KS for conducting the spaying procedures; and to Pratt Feeders, Pratt, KS and Garth Boyd, Extension Assistant for assistance in data collection.

[2]Extension Livestock Specialist, South Central and Southwest Kansas, respectively.

[3]Harper County Extension Agricultural Agent.

(FS); and 3) FS+A. The cattle were processed, including routine vaccinations and parasite control, then backgrounded on silage for 2 to 4 weeks before the trials were initiated. Feed was removed from the cattle 48 hours prior to the start of each trial to facilitate surgical procedures. On day 1, the heifers were individually weighed, implanted with Ralgro®, and randomly allotted to treatments.

Heifers in trial 1 were pastured on winter wheat; those in trials 2 and 3 grazed-out wheat, then grazed native range. half season (early-intensive) or season-long, respectively. The statistical analysis of heifer performance accounted for differences because of treatment and subjective breed type, with initial weight, frame size, and body condition score used as covariables.

Results

The results of the three field trials are presented in Table 25.1. Heifer performance in trials 1 and 3 was not significantly ($P>.10$) influenced by spaying treatment. However, FS+A heifers gained slower ($P<.05$) than FS heifers in trial 2. Over the three trials, none of the spaying methods examined had a beneficial effect on pasture gains when compared to intact heifers. These results are consistent with other recent research reports.

The effect of initial weight (approximate range 400 lbs), frame size (subjectively evaluated as small, medium, or large) and body condition score (1=extremely thin, 9=extremely fleshy) on heifer performance was evaluated by covariate analysis. In trials 1 and 3, for each 100 lb increase in initial heifer weight, pasture gain decreased by an average of .13 lb per day. In trials 2 and 3, heifer gain was increased by an average of .11 lb per day for each unit increase in frame size. Condition score was important only in trial 2, with heifer performance decreasing .10 lb per day for each unit increase in condition score.

Table 25.1. Effect of Several Spaying Methods on Grazing Heifer Gains

Item	Intact Controls	Kimberling-Rupp Spay	Kimberling-Rupp+ Ovary Drop	Flank Spay	Flank Spay + Autograph
Trial 1-137 Days:					
No. Heifers	45	46	41	--	46
Initial Wt., lb[1]	483	498	497	--	498
Daily Gain, lb[2]	1.34	1.39	1.35	--	1.36
Trial 2-129 Days:					
No. Heifers	46	--	--	98	85
Initial Wt., lb[1]	430	--	--	420	413
Daily Gain, lb[2]	1.63[ab]	--	--	1.69[a]	1.57[b]
Trial 3-233 Days:					
No. Heifers	48	--	--	99	104
Initial Wt., lb[1]	435	--	--	447	436
Daily Gain, lb[2]	1.31	--	--	1.24	1.27

[ab]Means within the same row not sharing a common superscript differ ($P<.05$).
[1]Actual means.
[2]Least-squares means.