

Artificial Insemination of Postpartum Beef Cows Utilizing Single Insemination Vs. Double Insemination -Preliminary Observations -

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Research Summary

The overall conception rate for this project was 60.8 percent. Cows inseminated once had a conception rate of 53.8 percent, the cows inseminated twice had a conception rate of 67.5 percent. Caution, the result's presented here are preliminary.

Introduction

The management of cattle reproduction is critical to the successful operation of a beef program. Cost management and product output are very dependent on high reproductive rates within the cow herd. One goal with any cattle operation is to attain maximum conception rates at a set point in time at the lowest possible cost. The Dickinson Research Extension Center maintains more than 300 breeding age cows on an annual basis. These cows are routinely artificially inseminated in May and then exposed to cleanup bulls for 45 days. In an effort to improve the quality of beef products produced by the Center, artificial insemination (AI) is utilized to gain access to a broader pool of carcass proven sires. However, the time commitment required for heat detection and the inability to scheduled labor are often disadvantages in utilizing AI. A simple "assemble line" process for artificially inseminating the cow herd was discussed by the Center's management team, and several scenarios were proposed. Synchronized timed insemination eliminates the need for heat detection, but reduced AI conception rates are often the result. Could time insemination reduce labor costs and would double insemination improve conception rates? The management team needed to decide if the time savings on heat detection and benefit of scheduling could offset the added cost of semen and synchronization. The purpose of this trial was to simply determine the impacted of single or double insemination on AI conception rates and the overall pregnancy rate.

Materials and Methods

The artificial insemination program was initiated with the administration of synchronization implants on May 6, 1996 and completion of insemination on May 17 and 18, 1996. Single or double insemination treatments were randomly assigned within two subgroups of the 212 cows inseminated. These two groups contained 79 cows in total and ranged in age from 2 to 10 years with a mean of 3.6 years. The postpartum (pp) interval was 45 days or greater on May 17 with a mean postpartum interval of 68.1 days. SYNCRO-MATE-BTM was used to synchronize the cows and first insemination occurred between 48 and 50 hours after implant removal. The second insemination occurred between 19 and 21 hours after the first insemination.

Results and Discussion

The overall conception rate for this project was 60.8 percent (48 of 79). Cows inseminated once had a conception rate of 53.8 percent (21 of 39), the cows inseminated twice had a conception rate of 67.5 percent (27 of 40). Caution is advised on this initial difference of 13.7 percent. Two preliminary trends were revealed in this data. The first was in cows less than 5 years of age, double inseminated cows tended to have an increased AI conception rate over single inseminated cows. The second was in cows less than 60 days postpartum, double inseminated cows tended to have an increased AI conception rate over single inseminated cows. The overall conception rate for the 212 cows inseminated was 54.2 percent (115 of 212). To substantiate these preliminary findings additional data needs to be collected and analyzed.

Table 1. Effects of single versus double insemination on cow reproduction^a		
	Single inseminated	Double inseminated
<u>Cow information</u>		
Cow age (yrs)	3.7	3.5
Days postpartum	68.6	67.6
Time inseminated (hr)	0	0,19.9
<u>Overall cow reproduction</u>		
Percentage AI service	53.8	67.5
Percentage natural service	33.4	17.5

Percentage open	12.8	15.0
<u>Cow reproduction (2 to 4 yrs)</u>		
Percentage AI service	45.8	69.2
Percentage natural service	37.5	15.3
Percentage open	16.7	15.4
<u>Cow reproduction (5 to 10 yrs)</u>		
Percentage AI service	66.7	64.3
Percentage natural service	26.6	21.4
Percentage open	6.7	14.3
<u>Cow reproduction (45-59 days pp)</u>		
Percentage AI service	30.8	61.5
Percentage natural service	69.2	30.8
Percentage open	0	7.7
<u>Cow reproduction (60+ days pp)</u>		
Percentage AI service	65.4	70.4
Percentage natural service	15.3	11.1
Percentage open	19.2	18.5
^a These are preliminary results and discretion is advised when using this data.		

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