Estrus Synchronization of Cattle in Kansas

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Summary

In 22 field trials involving 1,692 cattle, we evaluated Lutalyse as an estrus-synchronization agent for both natural mating and artificial insemination. Only 52.7% of the females in all 22 trials were cycling at the start of the breeding season. Both body condition and days postpartum at the start of the breeding season influenced the response to Lutalyse. First-service pregnancy rate in the 2 or 3 days of synchronization was 38.4% for all 453 females bred artificially in 12 trials in northwestern Kansas. The rate was 59%, however, if only females observed to be in heat were counted; but only 24.5% if only those in which no heat was observed were counted.

Introduction

Lutalyse, a synchronizing agent, offers great potential for making artificial insemination more practical for cattlemen. Our trials were conducted to determine the effectiveness of this product under Kansas field conditions.

Experimental Procedure

In twenty-two field trials, both natural mating and artificial insemination (AI) were used to breed Lutalyse-synchronized females. Data on cycling activity and the effect of body condition and days postpartum on response to Lutalyse include both AI and natural-mating trials; however, 12 AI trials conducted in northwestern Kansas are summarized separately.

Cooperators selected the synchronization system that best fit their management. Both one-injection and two-injection systems were used in combination with either timed insemination or breeding when heat was observed. Heat-detection records were kept, even if timed insemination (80 hours) was used. Where possible, the cattle were scored for body condition at the start of the breeding season (1 = thin to 9 = fat). We recorded days postpartum at the start of the breeding season, and we determined cycling activity based on ovarian palpation or observed heat.

Results and Discussion

Table 25.1. shows the results of 12 trials in northwestern Kansas. The first-service pregnancy rate of 38.4% (39.9% in heifers, 20% in first-calf heifers, and 43.0% in cows) in the 2- or 3-day synchronization period was relatively low; however, the rate in cattle that exhibited heat after treatment was a respectable 59%, whereas it was only 24.5% in the cattle that failed to exhibit heat but were still bred on timed insemination. Only 52.7%

[1]Appreciation is expressed to the Upjohn Co. for providing Lutalyse and partial funding support.

of the cattle in all 22 trials (Table 25.2) were cycling at the start of the breeding season.

Only 25.4% of the cows in below-average body condition (scores of 3 or 4) at the start of the breeding season cycled, compared with 70.0% of the cows in above-average condition (scores of 6, 7, or 8, Table 25.3). Correspondingly, days postpartum at the start of the breeding season influenced the cycling percentage (Table 25.3). Thus, for successful estrus synchronization, cows require an adequate postpartum period and must be in adequate flesh.

Table 25.1. Results of 12 Synchronization Trials in Northwestern Kansas

Total no.	No. inseminated	No. pregnant in synchronization period	First service conception rate of those inseminated (%)	First service pregnancy rate of all heifers (%)
Observed in heat prior to 80-hr post-injection				
249	249	147	59.0	59.0
Not observed in heat-A portion bred on timed insemination (80 hr)				
204	110	27	24.5	13.2
453	359	174	48.5	38.4

Table 25.2. Cycling Activity of Females Involved in 22 Synchronization Trials in Kansas

Age	No. injected	No. cycling at[a] start of breeding season	% cycling
Cows	986	474	48.1
Heifers	646	400	61.9
1st-calf heifers	60	19	31.7
Total	1692	893	52.7

[a]Based on ovarian palpation or observed heat

Table 25.3. Effect of Condition Score and Days Postpartum at the Start of the Breeding Season on Cycling Activity

Factor	No.	No. observed in heat	% observed in heat
Condition score			
3,4	205	52	25.4
5	224	117	52.2
6,7,8	90	63	70.0
Days postpartum			
Under 60	69	32	46.4
60-90	141	71	50.4
Over 90	54	42	77.8