Kansas Agricultural Experiment Station Research Reports

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

Article 83

2009

Heifer synchronization using 7-11 synch or 7-11 synch + CIDR

D.R. Eborn

C.R. Spiker

R.R. Sullivan

See next page for additional authors

Recommended Citation

Eborn, D.R.; Spiker, C.R.; Sullivan, R.R.; and Grieger, David M. (2009) "Heifer synchronization using 7-11 synch or 7-11 synch + CIDR," *Kansas Agricultural Experiment Station Research Reports*: Vol. 0: Iss. 1. https://doi.org/10.4148/2378-5977.1486

Heifer synchronization using 7-11 synch or 7-11 synch + CIDR

Abstract

Two aims of heifer estrus synchronization protocols are to induce prepubertal heifers to start cycling by the beginning of the breeding season and to shorten time spent in estrous detection. Use of progestins such as melengestrol acetate (MGA) and intravaginal progesterone-releasing devices (CIDR) can induce prepubertal heifers to begin cycling as well as synchronize estrus in cycling heifers. In past years, a timed artificial insemination protocol (7-11 COSynch) has been tested with varying results. Pregnancy rates using 7-11 COSynch have typically ranged from 40 to 60%. The objective of the current trial was to determine the effect of a similar heat-detection protocol (7-11 Synch) with or without a CIDR. We compared heat response, interval to estrus, and conception rates in beef heifers.

Keywords

Cattlemen's Day, 2009; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 1010; Kansas Agricultural Experiment Station contribution ; no. 09-168-S; Beef; Cattle; CIDR; MGA

Authors

D.R. Eborn, C.R. Spiker, R.R. Sullivan, and David M. Grieger

Heifer Synchronization Using 7-11 Synch or 7-11 Synch + CIDR

D. R. Eborn, C. R. Spiker, R. R. Sullivan, and D. M. Grieger

Introduction

Two aims of heifer estrus synchronization protocols are to induce prepubertal heifers to start cycling by the beginning of the breeding season and to shorten time spent in estrous detection. Use of progestins such as melengestrol acetate (MGA) and intravaginal progesterone-releasing devices (CIDR) can induce prepubertal heifers to begin cycling as well as synchronize estrus in cycling heifers. In past years, a timed artificial insemination protocol (7-11 COSynch) has been tested with varying results. Pregnancy rates using 7-11 COSynch have typically ranged from 40 to 60%. The objective of the current trial was to determine the effect of a similar heat-detection protocol (7-11 Synch) with or without a CIDR. We compared heat response, interval to estrus, and conception rates in beef heifers.

Experimental Procedures

Beef heifers from the Kansas State University Purebred Teaching Unit (n = 57) and the Rufus F. Cox Cow-Calf Unit (n = 70) were assigned to one of two treatments: 7-11 Synch or 7-11Synch + CIDR (Figure 1). All heifers were fed MGA for 7 days and given an injection of prostaglandin-$F_{2\alpha}$ (Prostamate; TEVA Animal Health Inc., St. Joseph, MO) on the last day of MGA feeding (day 7). Four days later (day 11), all heifers received an injection of gonadotropin-releasing hormone (OvaCyst; TEVA Animal Health), and 1 week later on day 18, all heifers received a second injection of injection Prostamate. Heifers assigned to 7-11 Synch + CIDR were given an Eazi-Breed CIDR (TEVA Animal Health) at the time of the OvaCyst injection on day 11, and CIDR removal occurred at the time of the second Prostamate injection on day 18. Heifers were watched twice daily beginning at the day of the second Prostamate injection for 5 days and artificially inseminated 12 hours after the onset of estrus following the AM/PM rule. Conception rates due to the artificial insemination were determined by ultrasonography 30 to 32 days after the last day of artificial insemination.

Results and Discussion

Overall heat response was 108/127 (85%) and was not different between treatments. Estimated heat response for the 7-11 Synch and 7-11 Synch + CIDR was 85 and 86%, respectively. Predicted interval to estrus was 49 hours for 7-11 Synch + CIDR and 46 hours for 7-11 Synch and was not different between treatments (Figure 2). Conception rates for 7-11 Synch (36/55; 65%) and 7-11 Synch + CIDR (32/53; 60%) were not different (P=0.64). Pregnancy rates in each herd were more than 60% for each treatment, except for the 7-11 Synch + CIDR treatment in the commercial heifers (15/28; 53%). The lower conception rates may be due to small numbers of heifers. These preliminary results suggest that addition of the CIDR in the 7-11 Synch protocol does not improve heat response, change interval to estrus, or improve conception rates in artificial insemination.

Implications

Final pregnancy rates for 7-11 Synch and 7-11 Synch + CIDR are similar to those achieved with 7-11 COSynch by using timed artificial insemination in past years in these same herds. Current data suggest that using a CIDR in the 7-11 Synch system may decrease the time needed for estrous detection because of the greater synchrony of estrus in this protocol.

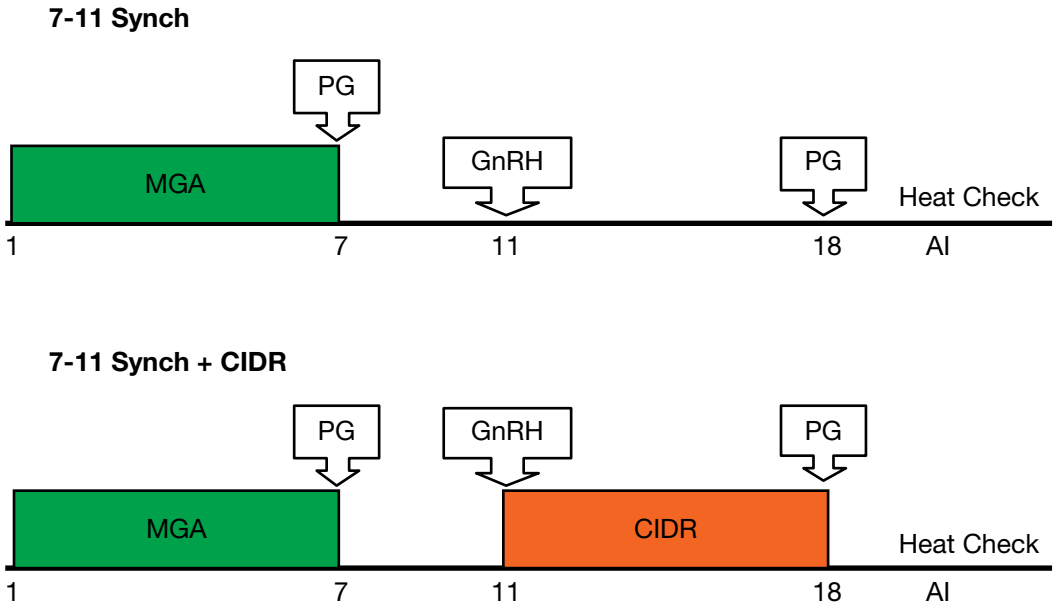

Figure 1. Heifers in both groups were treated the same with the exception of the insertion of CIDR in the 7-11 Synch + CIDR heifers.

MGA = melengestrol acetate; GnRH = gonadotropin-releasing hormone (OvaCyst); PG = prostaglandin-$F_{2\alpha}$ (Prostamate); CIDR = intravaginal progesterone-releasing devices. All heifers were watched twice daily for estrous activity for 5 days beginning at the Prostamate injection on day 18 and inseminated 12 hours after observed estrus.

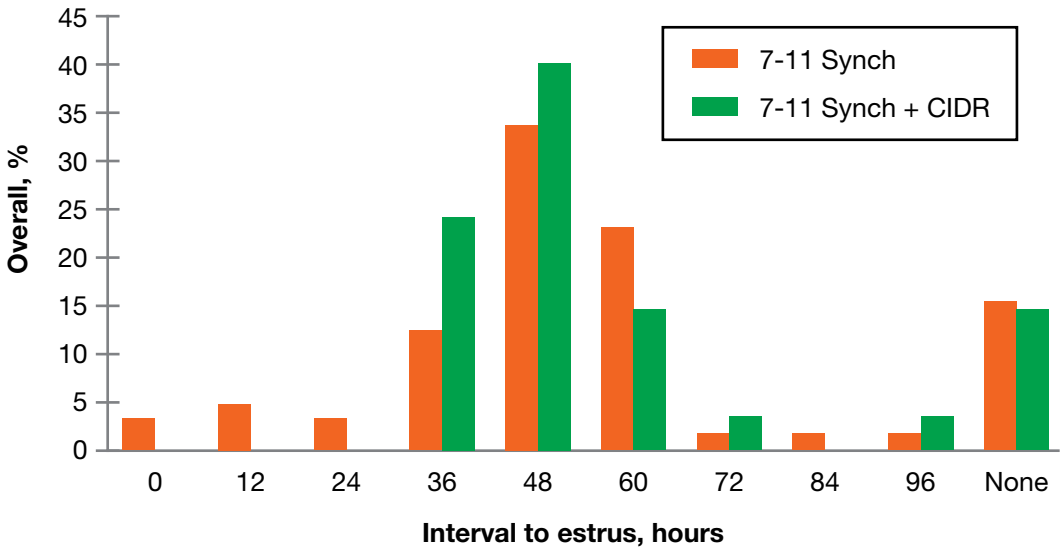

Figure 2. Heifers in the 7-11 Synch protocol tended to be more variable in their interval to estrus following the Prostamate injection.