TIMING GNRH ADMINISTRATION WITH SPLIT-TIME ARTIFICIAL INSEMINATION FOLLOWING ADMINISTRATION OF CIDR-BASED PROTOCOLS TO SYNCHRONIZE ESTRUS AND OVULATION IN BEEF HEIFERS AND COWS

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ABSTRACT

Split-time artificial insemination (STAI) delays insemination by 20 to 24 h for cows and heifers that fail to express estrus prior to a predetermined fixed time. Timing of GnRH administration was evaluated in beef heifers and cows based on estrous status during STAI. Estrus was synchronized for heifers in experiment 1 with the 14-d CIDR-PG protocol, and for cows in experiment 2 using the 7-d CO-Synch + CIDR protocol. Females in each treatment that exhibited estrus by 66 h were inseminated at 66 h, whereas AI was delayed 24 h (90 h after PGF\(_2\alpha\)) for females failing to exhibit estrus by 66 h. Females in treatment 1 received GnRH 66 h after PGF\(_2\alpha\) irrespective of estrus expression; however, in treatment 2, GnRH was administered coincident with delayed AI only to females not detected in estrus at 66 h. GnRH administered to estrus females at 66 h did not affect AI pregnancy rate; however delaying GnRH to 90 h for non-estrous females at 66 h improved estrous response for cows (\(P = 0.04\)) but not for heifers, with no effect on AI pregnancy rate. A third experiment evaluated pregnancy rates of heifers that failed to exhibit estrus by 90 h after PGF\(_2\alpha\) following treatment with the 14-d CIDR-PG protocol. Treatments were compared on the basis of whether or not GnRH was administered concurrent with AI, 90 h after PG. There was no effect of treatment on AI pregnancy rate. Collectively, these results indicate: 1) GnRH is not required among females that exhibit estrus prior to AI; 2) delayed administration of GnRH increases total estrous response in cows when STAI is practiced; and 3) GnRH is not required when STAI is practiced in conjunction with the 14-d CIDR-PG protocol in heifers.