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Efficacy of a new, once-used, or twice-used CIDR in a 5 day CO-Synch + CIDR estrous synchronization protocol in suckled beef cows

The objective of this experiment was to compare timed-AI (TAI) pregnancy rates (PR) in suckled beef cows treated with either a new, once-used, or twice-used CIDR within the 5-d CO-Synch + CIDR protocol. Angus-cross beef cows (n = 307) from 2 locations were stratified by estrous cycling status as determined by identification of a corpus luteum (CL) via transrectal ultrasonography on d -11 and -1 (d 0 = CIDR insertion, d 8 = TAI), age (2 yr old; n = 68 vs. ≥ 3 yr [mature]; n = 239), and BCS and randomly allotted to 1 of 3 treatments. Cows were enrolled in the 5-d CO-Synch + CIDR protocol that included either: 1) a new CIDR (NEW); 2) a CIDR previously used once in a 5-d estrous synchronization protocol (1X); or 3) a CIDR previously used in two, 5-d estrous synchronization protocols (2X). Blood samples were collected at d -11, d -1 and d 15 for analysis of progesterone (P4) to confirm ultrasound findings for cycling status and to assess the proportion of previously anestrous cows that ovulated and developed a functional CL following TAI. Determination of pregnancy was performed by transrectal ultrasonography 31 d after TAI. Categorical and continuous data were analyzed with the GLIMMIX and MIXED procedures of SAS, respectively. The proportion of cows cyclic by d -1 (75.8%) did not differ between treatments. TAI PR did not differ ($P = 0.40$) amongst NEW (55.7%), 1X (57.8%), and 2X (49.5%) treatments. However, there was a treatment × age interaction ($P < 0.001$). In 2 yr olds, the 2X (78.3%) treatment had greater ($P = 0.003$) TAI PR than the NEW (34.7%) treatment, with 1X treatment being intermediate (59.1%). In mature cows, the NEW (61.7%) and 1X (57.5%) treatments had greater ($P \leq 0.02$) TAI PR than the 2X (41.0%) treatment. In addition, TAI PR was greater ($P = 0.008$) in cyclic (56%) than non-cyclic (50%) cows. On d 15, the proportion of previously anestrous cows that had greater than 1 ng/mL of P4 (94.7%) and mean P4 concentrations (4.37 ± 0.20 ng/mL) did not differ amongst treatments. In summary, cow age impacts the number of times a CIDR can be effectively used in the 5-d CO-Synch + CIDR protocol.

Beef cow, CIDR, timed AI