

Estrus-AI interval and fixed-time AI pregnancy rates in beef cows inseminated with fresh extended or frozen thawed semen

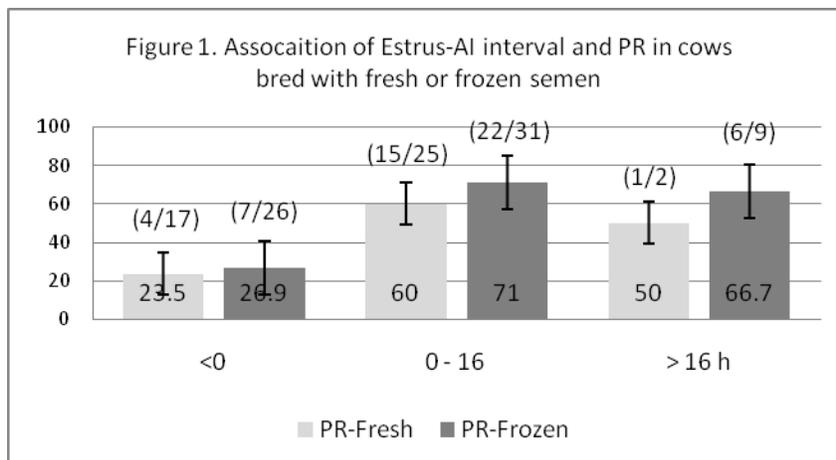
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We hypothesize that fresh extended semen will improve the AI pregnancy rate compared to frozen thawed semen due to its increased longevity in female reproductive tract. The objective of this trial was to determine the effect of semen type on fixed-time AI pregnancy rate in relation to estrus-AI interval in beef cows synchronized with progesterone based fixed-time artificial insemination (AI) protocols. Angus cross beef cows (N=180) were synchronized with CO-Synch-CIDR protocols for a fixed-time AI. Briefly, cows were synchronized with 100 µg of gonadotropin releasing hormone (GnRH) + controlled internal drug release insert (CIDR) on Day 0, 25 mg of PGF_{2α} and CIDR removal on Day 7 and 100 µg GnRH on Day 10 (67 h from CIDR removal) at AI (CO-Synch-CIDR). A subset of cows (N=110) received a Heatwatch pressure sensor at CIDR removal to determine the time of estrus. Cows were divided into two groups, inseminated at 47h (early) and 67h (late) from CIDR removal with either 3 million cells of fresh extended or 20 million cells of frozen thawed semen.

Results indicated that cows inseminated at 67h had numerically higher fixed time AI pregnancy compared to cows inseminated at 47h [44.4% (40/90) vs. 33.3% (30/90); P=0.13]. Cows inseminated with frozen thawed semen had similar fixed time AI pregnancy compared to fresh extended semen [40.8% (31/76) vs. 37.5% (39/104); P=0.66]. AI-estrus interval was divided into three groups < 0 h (AI occurred before estrus), 0 to 16 h and > 16 h (AI occurred 16 h after estrus). The AI pregnancy outcome for fresh semen for the 3 estrus-AI intervals was similar to frozen semen (Figure 1).



In conclusion, the fresh semen did not improve the pregnancy rate compared to frozen semen in relation to estrus-AI interval.

Keywords: Beef cows, semen type, fresh semen, synchronization, pregnancy rate