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Effect of Estrous Synchronization with Natural Service or Fixed-Timed Artificial Insemination with Conventional or Gender-Skewed Semen in Beef Females

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Objective
The objective of this study was to evaluate estrous synchronization and/or artificial insemination (AI) with conventional (CON) or gender-skewed (SEXED) semen on calving distribution.

Study Description
Within 6 herds, beef females (n = 339) were either estrous synchronized (7-d CIDR: Syn) or not synchronized (Nonsyn) and mated to bulls. Within 10 herds, beef females (n = 736) were estrous synchronized (7-d CIDR) and mated to bulls (SynNS) or artificially inseminated (SynAI), and within 5 herds, beef females (n = 545) were estrous synchronized (7-d CO-Synch plus CIDR) and artificially inseminated with either CON or SEXED semen. Calving distributions (calves born from d 1 to 14, 1 to 21, 22 to 42, and 43 and greater) were determined by birthdates and calf gender was determined at birth.

Take home points
Synchronization resulted in more calves born from d 1 to 14 (*P* < 0.01; 62% vs 47%) of the calving season; however, there were no differences (*P* = 0.31) between Syn and Nonsyn in the percent of calves born by d 21. Between d 22 and 42, there were more (*P* = 0.04) calves born in the Nonsyn group and no difference between groups (*P* = 0.32) for d 43 and greater. When evaluating the impact of AI, a greater proportion of calves were born between d 1 and 14 for SynNS (*P* < 0.02; 46% vs 38%) compared to SynAI, but from d 1 to 21 and 22 to 42 there was no difference between treatments (*P* > 0.12). It should be noted that SynAI females remained separate from bulls for 7 to 10 days post AI to allow identification of AI versus natural service conceptions and this could have affected the proportion of calves born in the first 21 days. With the addition of SEXED semen, there were no differences (*P* > 0.14) between CON and SEXED for the proportion of calves born from d 1 to 14 or d 1 to 21. However, more of the desired gender were born in the SEXED group during d 1 to 14 of the calving season (*P* < 0.01; 84% vs 68%), and more total calves born from d 22 to 42 in the SEXED group compared to the CON group (*P* < 0.05; 49% vs 33%). There were no differences (*P* = 0.07) for d 43 and greater. In summary, estrus synchronization increased the proportion of cows that calved early in the calving season, and incorporation of SEXED semen increased the proportion of the desired gender born early in the calving season without influencing the calving distribution.