SIRE DISTRIBUTION OF CALVES IN A HERD WITH USE OF FIXED TIME ARTIFICIAL INSEMINATION FOLLOWED BY IMMEDIATE BULL EXPOSURE FOR NATURAL SERVICE

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Background and Purpose

Development of FTAI protocols has provided beef producers tools to harness genetic improvement benefits from use of AI sires, economic benefits from cows calving earlier in the subsequent calving season, while eliminating the need for estrus detection. Fixed time AI followed by immediate exposure of females to bulls for natural service can be a beneficial management strategy for cow-calf producers. It has the potential to limit labor and time related to bull turnout, as well as to increase proportion of females becoming pregnant early in the breeding season.

When natural service sires are exposed to females immediately after FTAI, potential variation in bull fertility, time to estrus onset, and length of estrus in females likely influence whether the female conceives to the AI sire or natural service sire. Expectations for outcomes in natural service sire versus AI sire parentage are relatively unknown.

Objective

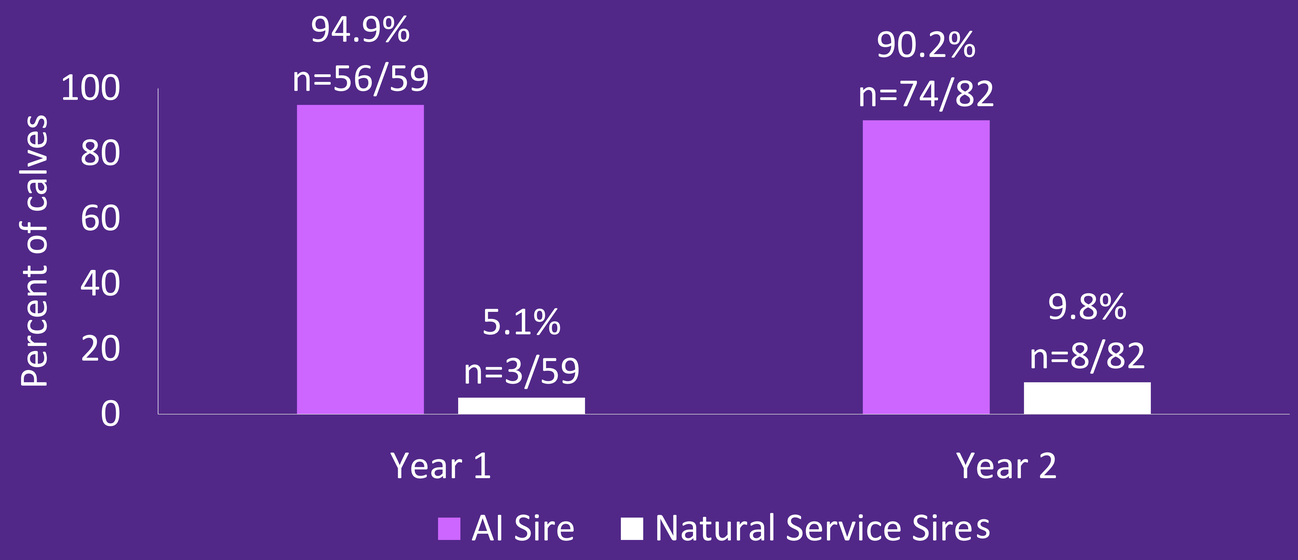
Our objective was to determine the relative percentages of calves sired by either natural service sires or FTAI sires within the same estrous period when natural service sires are exposed to females immediately after FTAI.

Methods

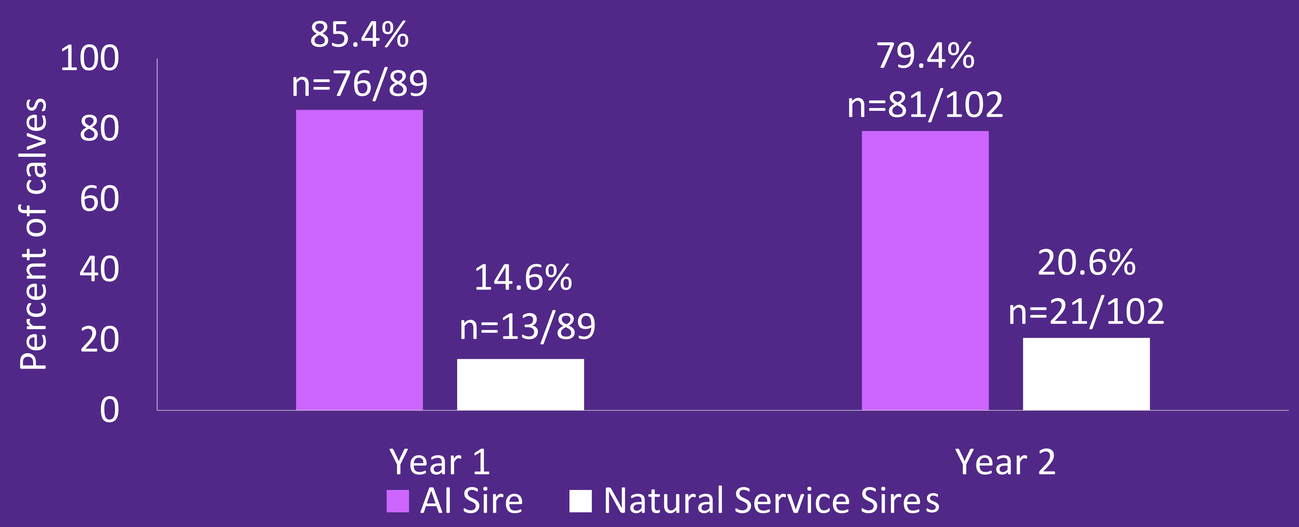
- Two consecutive years at a ranch in Kansas
- Commercial Angus heifers and cows
- Synchronized and inseminated using the 7-day CO-Synch + CIDR FTAI protocol
  - Single AI technician
  - Single Angus AI sire for heifers
  - Single Angus AI sire for cows
- All females were exposed to natural service bulls immediately following insemination
  - Natural service sires passed a breeding soundness exam
  - Females were exposed to bulls for 90 days
- At calving, all calves born in the first 21 days of the calving season received a tag with a different color for ease of identification at DNA collection
- DNA was collected from a random subset of calves for parentage analysis
  - Calves born from heifers in Year 1 = 59 and Year 2 = 82
  - Calves born from cows in Year 1 = 89, Year 2 = 102
  - SeekSire (Neogen) parentage testing was used to determine percentage that were sired by AI or natural service bulls

Results

Percentage of calves born to heifers that were sired by AI sires compared with those sired by natural service sires



Percentage of calves born to cows that were sired by AI sires compared with those sired by natural service sires



Conclusion

If commercial producers use FTAI followed by immediate bull exposure in beef females, it can be expected that natural service bulls may sire 5 - 20% of calves born early in the calving season while reducing time and labor associated with bull turnout.