The Little Things Matter

by **KINDRA GORDON**

Why can beef herd pregnancy rates vary so much? What causes the variation? The answer lies in management, said George Perry, assistant professor in beef reproductive management at South Dakota State University.

"Management can affect the outcome of artificial insemination or natural-service breeding," Perry commented. "Little mistakes can add up to a big impact on fertility."

Specifically, Perry said the reproduction equation includes the key areas of:

- animals detected in heat and inseminated;
- inseminator efficiency;
- fertility level of the herd; and
- semen fertility level.

Perry said if producers were perfect in each of those four areas (achieving 100% in each area) they could have 100% fertility. However, if they only achieve 70% success in each of those areas, herd fertility can be significantly reduced to a 24% pregnancy rate.

In reviewing the four key areas that he outlined, Perry reminded producers that success is in the details. For instance, he said, "Successful insemination requires animals be detected in standing estrus and inseminated at the correct time." This is true whether you are using natural service or a synchronization protocol.

Heat detection aids and synchronization protocols can be useful in the breeding process — even with natural service, Perry said. But, he cited several studies that have used these tools and still had large variations in fertility. Likewise, when using a bull, libido or sex drive can vary, which can compromise the herd's reproductive performance. Perry emphasized the importance of watching a bull when he is turned out with the cows to make sure he has ample libido.

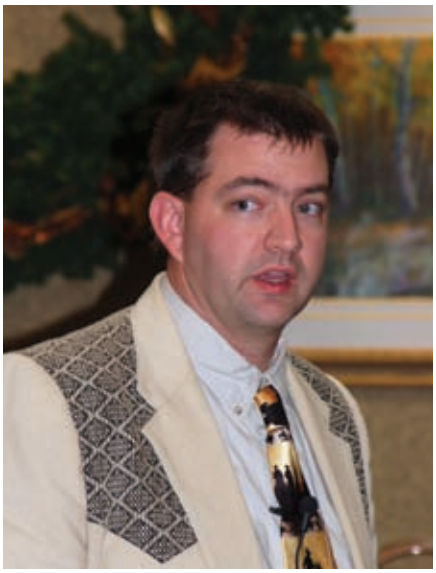
Even with the tools and synchronization protocols available, estrus detection is essential, Perry acknowledged. It takes a great deal of time and labor, particularly because there are often variations in how cattle display signs of heat, and even animals that may stand but do not ovulate.

Regarding the second key component, inseminator efficiency, Perry explained semen must be deposited in the correct location at the correct time. If this is done, studies show fertilization occurs 95% of the time, he said.

The correct place for semen to be deposited is in the uterine body, Perry explained. Studies have shown there is typically a 10% reduction in fertility when semen is deposited in the cervix.

Producers may think they do not need to be concerned with this point if employing bulls for natural service, but Perry said it still should be considered. Just because a bull has passed a breeding soundness exam does not mean he is physically able to breed cows. In fact, one study showed that 4% of bulls that pass a breeding soundness exam were not physically able to breed a cow.

Perry emphasized again that bulls should be monitored after being turned out with the cow herd for breeding. Producers should consider the appropriate male-to-female ratio. Recommendations range from 1:10 to 1:60, but Perry advised producers keep in mind these guidelines:



George Perry, assistant professor in beef reproductive management at South Dakota State University, discussed how management factors influence fertility in both AI and natural-service breeding programs using estrus synchronization.

- Yearling bulls have a lower serving capacity than older bulls.
- Synchronization places greater pressure on bulls and lowers serving capacity. He recommends about a 1:20 or 1:25 ratio in these instances.
- Multiple-sire pastures decrease serving capacity since multiple sires will mate an individual cow.

As a third point, Perry said cow-calf producers must consider the fertility level of their herd, which can be influenced by many factors, such as herd health, nutrition, body condition and stress.

Perry acknowledged that some embryonic death is unavoidable and is a means of eliminating unfit genotypes. But he cautioned that stress due to shipping, heat or even running cattle through chutes can delay embryo development and is avoidable.

Lastly, Perry said producers must be aware that there can also be differences in fertility levels of semen. This too can reduce fertility rates. To maximize chances for fertilization, he recommended watching the details, such as heat detection and correct placement of the semen within the female at ovulation.

"All of the management decisions that are made through the year add up to what occurs during the breeding season," Perry concluded. "Producers must think about everything they do that can affect their herd's reproductive performance."

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