



A 2-year-old requires more time to begin cycling, even when she calves earlier than her mature counterparts. [PHOTO BY SHAUNA ROSE HERMEL]

Get Her Bred

How to deal with noncycling cows.

Story by
TROY SMITH

Whether they are novices or veterans of artificial insemination (AI), producers who apply this reproductive technology share common objectives. They want females bred to chosen sires within a relatively short, predefined time period. Choosing the sires can be fun, but achieving the proper time period can be frustrating.

Perhaps the biggest challenge arises from those cows not having normal estrous cycles at the beginning of the breeding season. Many factors contribute to whether cows are cycling, including age, nutritional status, time elapsed since calving, calf suckling intensity and weather conditions.

Estrus synchronization is the technology that AI-savvy producers commonly apply to help put their herds on a schedule. Some synchronization programs will succeed in most operations when a large proportion of females are already cycling. For heifers that have not reached puberty or for cows that have not returned to estrus after calving, other programs offer better results.

"The management challenge is to determine which program will best meet the needs of the breeding herd in any given year," says Jeffrey Stevenson, professor of animal science at Kansas State University. "Fortunately, a few programs have been identified that provide acceptable pregnancy rates in those herds that have larger

proportions of noncycling females than desired."

Evaluate breeding conditions

Stevenson advises producers to consider why their herds have too many noncycling females. Among the possible contributing factors are time elapsed since calving, calf suckling intensity and weather conditions, but nutrition often is a key factor. Research tends to support the old axiom: "You have to feed 'em to breed 'em." Stevenson says body condition at the time of calving is a good predictor of when first estrus will occur. Cows having a body condition score (BCS) of less than 5 (on a 9-point scale) are at greater risk for prolonged intervals to first estrus.

Mature cows that are thin at calving may respond to supplementation of energy in excess of National Research Council (NRC) nutritional requirements. A postcalving nutritional boost may shorten the delayed return to estrus in mature cows, but younger females do not respond as well.

"Clearly, body condition scores are predictive of cycling activity," Stevenson affirms. "Careful attention of the body condition of 2-year-olds is important. They present a real challenge compared to older cows."

A 2-year-old requires more time, even when she calves earlier than her mature counterparts. Her first priority is maintenance of essential body functions. Once the maintenance requirement is met, remaining nutrients accommodate her own growth, then lactation and, finally, initiation of the estrous cycle. Because of this priority system, young, growing cows generally produce less milk and have a longer interval before cycling resumes.

Synchronized success

Protocols to synchronize estrus typically incorporate injections of gonadotropin-releasing hormone (GnRH) and prostaglandin (PGF), according to a specific schedule, to manipulate estrus and ovulation. However, Stevenson says, noncycling

suckled cows more consistently respond to treatments like those often used to synchronize estrus in yearling heifers. These protocols typically include some form of prebreeding progestin treatment administered with the up-front injection of GnRH. Progestin products available in the United States include melengestrol acetate (MGA), which is administered as a feed additive (fed for 7 to 14 days), and the controlled internal drug release (CIDR®) insert (applied for 7 days).

Stevenson says the combined results of seven studies showed induced ovulation was greatest when cows received a combination of a progestin plus GnRH injection as part of a synchronized breeding program. When treated with MGA or the CIDR insert, and receiving GnRH plus PGF seven days later, more cows were induced to ovulate than when receiving GnRH or PGF alone. Protocols including a progestin that are most likely to be effective in suckled, noncycling cows and produce acceptable pregnancy rates after timed AI are shown in Fig. 1.

Consider the cost

"The drawback to these treatments is the cost," Stevenson says. "They are the most expensive protocols, so it would be beneficial to have an idea which cows are cycling at the beginning of the breeding season. That way, you could avoid the added expense of treating those cows."

Generally, mature cows calving during the first six weeks of the calving period and 2-year-olds calving during the first three weeks are likely to be cycling by the onset of breeding season. For these cows, Stevenson says, application of a synchronization protocol incorporating either MGA or CIDR inserts probably isn't necessary.

The exception would be 2-year-olds with a BCS of 4 or less, whether they calved early or not, he adds. For these first-time calvers, thin cows and any late-calving females, a more expensive synchronization protocol, including a progestin, may be justified.

Fig. 1: Protocols likely to produce the best pregnancy rates in peripubertal heifers and suckled anestrus beef cows after timed artificial insemination (AI)

