



Repro Tracks

► by **Bill Beal**, beef cattle reproductive physiologist, Virginia Tech

Calf suckling delays return to heat

The failure of cows and first-calf heifers to return to heat after calving is one of the greatest deterrents to maximum reproductive efficiency. Body condition, the interval after calving, calf suckling intensity and estrus synchronization treatments can all influence the timing of the return to heat. Managing these factors appropriately can improve postpartum reproductive efficiency, especially in first-calf heifers. The following represents a common question posed by breeders regarding return to heat.

Question

I purchased 50 bred heifers from another Angus breeder last April. The heifers calved from late August through October. I wanted to rebreed them by artificial insemination (AI), so I started checking for natural heats the first week of November. By the week after Thanksgiving, only two of the heifers had been detected in heat. At that point I injected them with gonadotropin-releasing hormone (GnRH; Cystorelin®) and inserted CIDR®s for seven days. Last week, when I removed the CIDRs, I gave them prostaglandin (Lutalyse®), and none have been detected in heat during the past six days. What is wrong with these heifers, and what should I do now?

Response: The first question to ask is, “Are the heifers in good body condition?” The owner claimed that they were in a body condition score (BCS) of 4 to 5 in November. If that is true, their failure to cycle was probably not solely a nutritional problem, even though the heifers would have done

better if they were a full BCS higher.

The primary problem here was the suckling effect of the calves’ nursing that inhibited the heifers from developing a large follicle on the ovary to bring them into heat.

Cows and first-calf heifers that fail to exhibit estrous cycles and show heat after calving (postpartum anestrus) do so primarily because the neural stimulus of the calf suckling the cow several times per day inhibits the function of the ovary. Eventually, as the calf grows and nurses fewer times per day, the suckling intensity decreases, the inhibition on the ovary is removed, and the cow or heifer comes into heat. This usually happens two to four weeks sooner in cows than it does in first-calf heifers.

Underfeeding before or after calving may exacerbate this problem and make postpartum anestrus longer, especially in first-calf heifers.

Using a progestin-based estrus synchronization treatment [CIDR or melengestrol acetate (MGA)] is one method

of trying to induce heat or “jump-start” noncycling first-calf heifers. Feeding MGA or inserting a CIDR for a short period (seven to 14 days) essentially mimics the hormone changes that would take place during the first estrous cycle after calving.

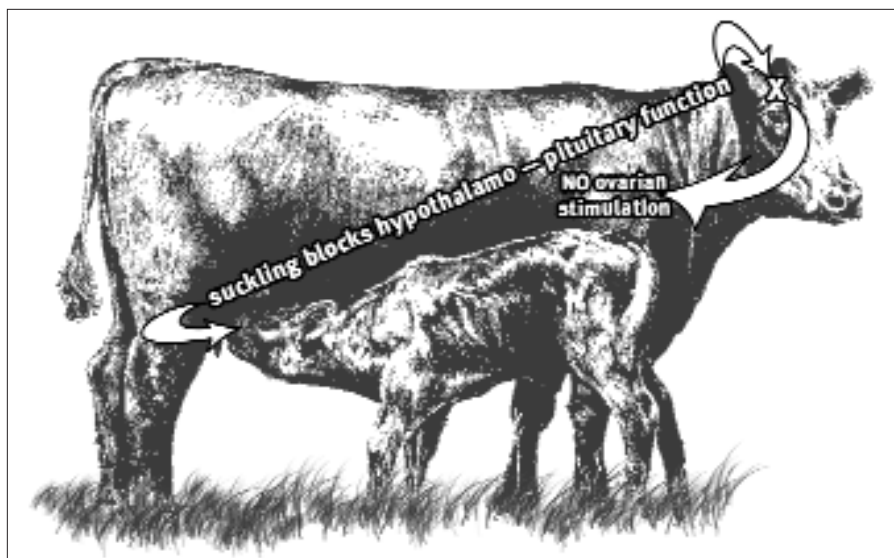
Research at Kansas State University, the University of Missouri and other universities has shown that the use of a CIDR or MGA may jump-start noncycling animals and induce heat. Obviously, it doesn’t always work — as in the case above. Even when first-calf heifers can be jump-started, the fertility following AI breeding should be expected to be as much as 30% lower than if the heifer were cycling naturally before she was bred AI.

There is an easy answer to the question of what to do if the use of a CIDR fails to induce cycling in first-calf heifers, but it may not be a practical solution. The cause of the heifers not cycling is the suckling of their calves. If the calves can be removed for at least 48 hours in conjunction with the end of another CIDR synchronization treatment, that provides the best chance of jump-starting the heifers.

Removing the calves for two days, beginning when the CIDR is removed, should eliminate the suckling stimulus. When combined with the removal of the CIDR, these two effects maximize the chances that the heifers will begin cycling. In heifers that are in good body condition (BCS greater than or equal to 5) and more than 45 days postcalving, the response should be greater than 50%.

The recommendation to the breeder in question was to immediately insert another CIDR and to inject the first-calf heifers with GnRH again. Seven days later, he was to remove the CIDR and inject prostaglandin. The calves were to be removed at the time the CIDR was removed (or 12 hours later). Calves were to remain off the cows for at least 48 hours (or until their dam showed heat) and to be paired back with the first-calf heifer after she had been bred AI.

The recommendation was for all calves to be housed in a secure location, with free access to water and good-quality hay and be offered a small amount of grain. (You will be surprised how much hay a 45-day-old calf will eat.)



CONTINUED ON PAGE 144

REPRO TRACKS

CONTINUED FROM PAGE 143

The producer was told that it was not necessary to hide the calves from the heifers. The purpose of calf removal was simply to restrict their ability to suckle their dams. Combining calf removal with CIDR treatment was expected to provide the best chance of getting the first-calf heifers to cycle.

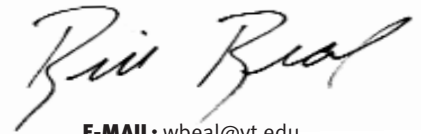
Follow-up: The breeder re-treated all his first-calf heifers with GnRH and inserted a CIDR as directed. He administered prostaglandin and removed the calves at the time he removed the CIDR. However, he got “cold feet” and only removed the calves on half of the heifers. Many of the heifers he removed calves from exhibited heat within 48

hours after CIDR and calf removal.

The remainder of those, and many of the heifers he did not remove calves from, exhibited heat later — five or six days after CIDR removal. He chose not to breed those exhibiting heat later because he thought they would be less fertile (they probably would not have been). At the time this column was written (three and a half weeks after calf removal), the cows he did not breed are beginning to return to heat, and he will breed them this time.

Bottom line: It worked, but the breeder only removed half the calves; he should have removed them all. He mistakenly assumed that the first-calf heifers that did not respond to calf removal until five or six days after the CIDR came out would have been less fertile. He had some success, but it is likely he will

have more confidence in the calf removal procedure and do things differently if he needs to use it again.



E-MAIL: wbeal@vt.edu

Editor's Note: Bill Beal is a beef cattle reproductive physiologist at Virginia Tech. He conducts research involving estrus synchronization, artificial insemination (AI), embryo transfer (ET) and ultrasound technology. This column is designed to provide answers to questions about reproductive management commonly posed by commercial and purebred breeders. If you have questions or comments related to the reproductive management of cows or bulls, e-mail them to Beal at wbeal@vt.edu or mail them to him at the Dept. of Animal & Poultry Sciences, Virginia Tech, Blacksburg, VA 24061-0306.