



Repro Tracks

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

Can you save time and money?

Getting cows bred early in the breeding season at the least cost and with less labor is a common goal. There are limits on how to cut corners when setting up synchronization and prebreeding vaccination programs. Knowing the limits is important to ensure that cost-cutting measures don't decrease the reproductive performance of the herd.

Breeder question No. 1

I read an earlier column in which you indicated the insertion of a CIDR® or feeding melengestrol acetate (MGA) as part of an estrus synchronization treatment could actually jump-start some noncycling cows, thereby making them show their first heat after calving. I have several late-calving cows this year. How soon after calving can I use a CIDR to induce a heat?

Response: First, let me remind you that I indicated *some* (not all) noncycling cows treated with a CIDR-based synchronization treatment would show heat after the treatment. In our herd, we have consistently been able to induce estrus in 50% or more of the late-calving, noncycling cows.

As you would expect, cows that are further from calving (>45 days) tend to respond better to the treatment and are more likely to show heat and become pregnant after artificial insemination (AI) than cows that are fewer days postcalving.

There is no "rule" when deciding how early after calving to treat cows. Instead, I suggest just using some common sense. If you palpate the uterus of a cow at three to four weeks after calving, it is remarkable how much uterine involution has taken place and how much the size of the uterus has decreased.

Uterine involution is a continual process after calving. During involution, it is beneficial to have low concentrations of progesterone, like those seen in a noncycling, postpartum cow. The low progesterone concentrations facilitate uterine contractions and aid in returning the uterus to its normal size and function. Therefore, inserting a CIDR to raise progesterone concentrations during the first three weeks after calving would be counterproductive. Hence, waiting at least 21 days after calving before starting treatment with a CIDR seems logical.

Remember, those jump-started cows will not have pregnancy rates as high as those of cows that have already started cycling after calving when they are synchronized. However,

the CIDR- or MGA-based treatment is the best method for attempting to get those late-calving cows in heat and move them up in the calving season next year.

Breeder question No. 2

I want to save time by administering modified-live virus (MLV) vaccines at the same time I start treating my heifers to synchronize estrus. This will be about nine days before the first cow is bred. Can I do this without reducing fertility at the first breeding?

Response: Very few studies have been done to investigate the effects of MLV vaccines administered less than 30 days prior to breeding. A study I was involved in compared the pregnancy rates of heifers on three ranches vaccinated with MLV and dewormed 30 days prior to breeding with those of heifers receiving the same vaccination and deworming products nine days prior to breeding. There were no differences in pregnancy rates following synchronization and AI.

It should be noted, however, that this was not the first time those heifers had been vaccinated with the MLV vaccines. They had received MLV vaccines prior to weaning. Hence, you would expect the antibody response to the vaccines to be more substantial and to occur more rapidly than if they had not been vaccinated with modified-live products earlier.

Despite knowing the results of a few small trials like the one described, when I posed this question of when to vaccinate prior to breeding to technical veterinarians at a large pharmaceutical company, they were not anxious to recommend vaccinations less than 30 days prior to breeding. Furthermore, they were adamant that prebreeding vaccinations should be 30-60 days prior to breeding if the vaccination history of the heifers was unknown or if they had not received modified-live vaccines previously.

Breeder question No. 3

There are several different prostaglandin products on the market for estrus synchronization. Are there differences among the products that should cause me to purchase one instead of another?

Response: The prostaglandin products differ slightly in the structure of the active compound. Some products contain the naturally occurring prostaglandin F_{2α}; others are a synthetic prostaglandin. Both types are potent luteolytic agents for use in cattle. In addition to the original brand-name products, generic products have become available.

There are few studies that compare the efficacy of prostaglandin products for regressing the corpus luteum (CL) and bringing cows into heat. Those that exist do not indicate a significant difference in the effectiveness of the products for synchronizing estrus. The generic products that have entered the market are generally believed to be as effective as the original brand-name products.

Companies with brand-name prostaglandin products have felt pressure from the generic suppliers. At a recent meeting a representative of a major pharmaceutical company was asked why he expected beef producers to pay more for brand-name products. The representative answered the beef producer's question with a question of his own.

He asked the producer, "Who pays for the research to develop new animal health products?" When the beef producer indicated he didn't know, the pharmaceutical company representative said, "You do." He pointed out that by paying more for brand-name products, particularly popular new patented products, producers are supplying pharmaceutical companies with the money needed for research and development of new products.

His point was that companies selling generic products are usually wholesalers who do little or no research and development. I thought it was an interesting point.



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Editor's Note: Bill Beal is a beef cattle reproductive physiologist at Virginia Tech. He conducts research involving estrus synchronization, AI, embryo transfer and the use of 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 him at wbeal@vt.edu or mail them to the Dept. of Animal & Poultry Sciences, Virginia Tech, Blacksburg, VA 24061-0306.