

# A REPRODUCTIVE MOMENT WITH MEL

by Mel DeJarnette, reproductive specialist

## So You Synchronized Estrus — Now What?



Systematic breeding programs such as Ovsynch and target breeding have allowed many dairy producers to reduce days to first service and improve pregnancy rates to these early inseminations. This usually translates into improved overall reproductive performance in other traits such as average days open and calving interval. However, some herds have found that despite these improvements, other barometers of reproductive performance do not appear to have changed much. This is likely a result of assuming that these breeding programs eliminate the need for estrus detection.

Strategic and systematic use of these programs ensures that 100 percent of the herd receives the first A.I. service within a reasonable amount of time after calving, and usually results in a 30 percent to 35 percent pregnancy rate at first A.I. But, they still leave us with 65 percent to 70 percent of the herd open. So what happens to these cows? In herds where the manager believes systematic breeding reduces the need or importance for heat detection, the repeats are less likely to be detected than they were before adoption of the breeding program.

Therefore, the benefits of timely first service and pregnancy often are offset by later detection, insemination and conception in repeat cows. Many producers are beginning to recognize the dollars being left on the table are there for the taking by those who adopt systematic "rebreeding programs."

Once a group of cows is synchronized, it tends to stay somewhat synchronized for the next one or two estrous cycles. By taking advantage of a heat expectancy list and estrous-detection aids such as chalk or KAMARs®, a good herd manager should be able to catch a high percentage of these cows when they repeat 18

to 24 days later. For herds on a prostaglandin-based breeding program, scheduling groups of cows at three-week intervals

will result in a "synchronized" group of cows displaying estrus simultaneously with the repeats from the previous injection. This will further facilitate estrous detection in these repeat animals. If the first service was to Ovsynch, it would be a good idea to also watch for repeats 10 to 14 days after the previous A.I. service. This is because any anestrous cows that were

induced to cycle in response to the GnRH injections of Ovsynch often will display a shorter interval to estrus if they fail to conceive.

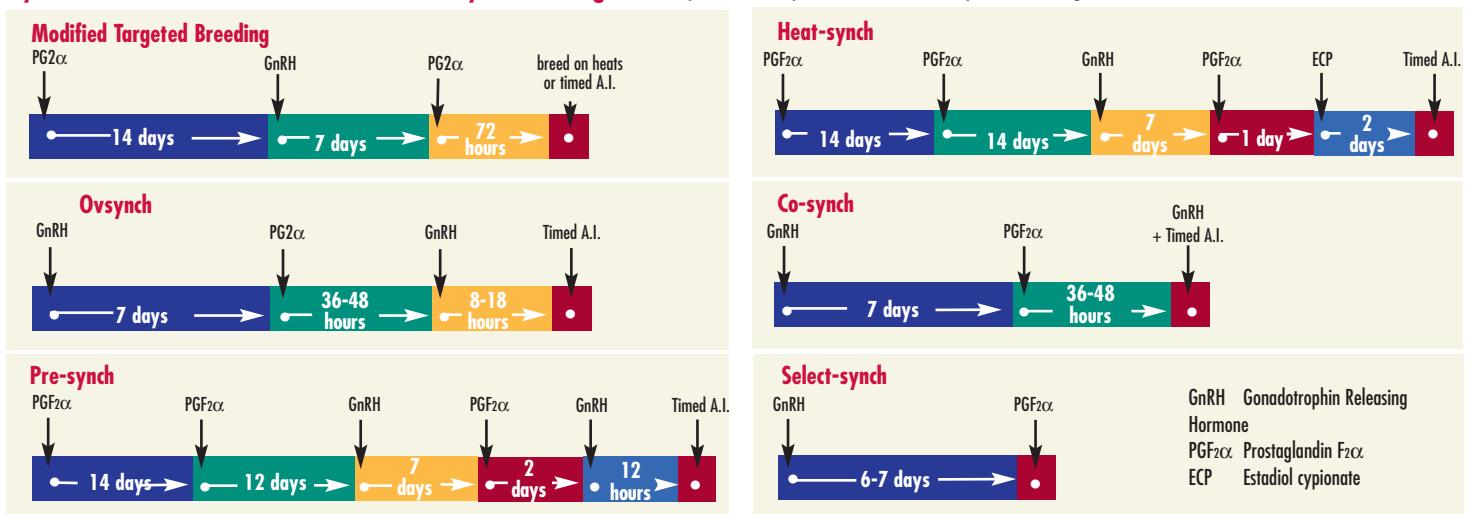
Ongoing research soon may provide techniques we can recommend to "resynchronize" repeats and further improve estrous-detection rates. In the meantime, with good heat detection you should have a goal of catching 50 percent or more of the open cows when they return to estrus. If 40 percent to 50 percent conceive to these repeat inseminations, an additional 13 percent to 16 percent will be added to the pregnancy rate. This brings the tally for the first 25 days after the voluntary waiting period to approximately 40 percent to 50 percent of the herd.

But, that still leaves at least half of the herd open. Early detection of these open cows and timely reinsemination is essential to keep them from becoming costly liabilities.

With conventional reproductive management programs, detection and reinsemination of open cows traditionally has been accomplished by rectal palpation of pregnancy at 30 to 40 days after A.I., and injecting open cows with prostaglandin. This technique is a least-cost approach that works if

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### Synchronization Schedules for Commonly Used Programs reprinted with permission from Dairy Herd Management



## Although Difficult, Producers Can Improve Fertility in Summer's Heat

While decreased production is a concern during the heat of the summer, decreased reproductive performance is another outcome that can cause long-term economic losses for dairy producers. In addition to adopting management techniques that help reduce heat stress, producers can improve reproductive efficiency by implementing strategic estrus-synchronization programs, using artificial insemination and breeding cows with highly fertile semen.

"At this time of year, providing cows with convenient access to shade and ample supplies of cold water, and avoiding overcrowding are important keys to managing heat stress," says Mel DeJarnette, reproductive specialist. "Despite the best heat-management techniques, however, keeping fertility high during the summer is still a challenge. Although it can be tempting to use a herd bull, top producers continue to use A.I. year-round, recognizing that heat stress affects the fertility of bulls too."

Researchers at Virginia Tech, Blacksburg, Va., conducted research to better understand the effects of heat stress on semen production. One study found that after the initial heat stress, it took as much as 1½ months for production to return to normal.

"The bottom line is that you can't depend on a herd bull to get cows bred during the summer," says DeJarnette. "That's why more producers turn to highly fertile frozen semen that has met stringent quality-control standards, including semen from sires that have been designated as SUPERIOR SETTLERS™." (See a complete list on page nine.)

### What you can do to control heat stress

Heat-stressed cows are reluctant to mount since physical activity increases body temperature. So while cows typically cycle normally, it is harder to catch them in heat. And, in the south-eastern United States, cows tend to have shorter and less-intense heats than cows in cooler environments.

Heat-stressed cows, however, do respond extremely well to prostaglandin injections. That's why estrus-synchronization programs can be implemented effectively along with programs that manage heat stress.

In addition, time-tested mechanical aids, such as fans and misters, continue to be cost-effective options in the battle against heat. Since cows often reduce their feed intake by as much as 25 percent during heat stress, increasing the protein and energy content of feed while reducing fiber intake can help.

When it comes to managing reproduction, using estrus synchronization and A.I. are important tools.

Producers should work with a veterinarian or reproductive specialist to develop a program to help get cows bred this summer, then adopt a synchronization program next spring to reduce the number of cows that will have to be bred during the summer of 2003.

the heat-detection program is intense enough to catch cows as they respond to the prostaglandin. Unfortunately, despite their best efforts, many producers find that a high percentage of these cows continue to slip through the cracks of the heat-detection program using the prostaglandin-only approach to rebreeding.

An alternative to the prostaglandin-only approach is to immediately start the Ovsynch program on open cows after a veterinary check. This ensures 100 percent of the open cows will be reinseminated 10 days later. If you like the idea of using Ovsynch on open cows, but don't like the idea of waiting 10 days to reinseminate (at a \$3 per day cost for days open), you may want to try the following approach. Restart the Ovsynch program with a GnRH injection at 25 to 27 days after A.I. service in all cows that did not return to estrus. Check all cows for pregnancy six or seven days later (day 31 to 34 after A.I.). Pregnant cows receive no further treatment, while open cows continue with the Ovsynch program

(prostaglandin seven days after the GnRH followed by another GnRH 48 hours after the prostaglandin, and fixed-time A.I. eight to 18 hours after the second GnRH).

Although the day-25-to-27 GnRH injection is "wasted" in pregnant cows, these costs easily can be offset by the seven-day reduction in the interval to repeat insemination of open cows. In herds that use ultrasound to diagnose pregnancy as early as 23 to 25 days after A.I., further efficiencies can be gained through more accurate pregnancy diagnosis and deferred GnRH cost by only starting the open cows on Ovsynch again.

Regardless of the resynchronization option you choose, it is extremely important to keep accurate records to ensure that pregnant cows are not inadvertently injected with prostaglandin and/or reinseminated, as either will result in an abortion.

Although synchronization programs can reduce our dependency on heat detection for breeding and rebreeding, they do not eliminate the need for heat detection. Take advantage of the syn-

chrony created by a previous synchronization by intensely focusing on detection of repeats 18 to 24 days later. Each animal detected will be reinseminated at least 10 to 14 days earlier than would be possible with any pregnancy-check-based resynchronization program and no additional hormone expense will be required. In addition, despite our best efforts to teach them, many cows do not read the book. Natural heats and repeats occur daily even in the most intensely synchronized herds. Take advantage of these "freebies" by providing at least moderate levels of estrous detection on a daily basis.

The profitability of any cattle-breeding enterprise hinges on timely insemination and conception. Although systematic breeding programs greatly enhanced the efficiency with which we can deliver the first A.I. service after calving, tremendous returns on investment await those who develop and implement systematic protocols to detect and reinseminate those cows that fail to conceive at the first service.