

A REPRODUCTIVE MOMENT WITH MEL

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Did Synchronizing Cows Just Get Simpler?

Catching cows in heat has never been an easy job, but in today's large, high-producing dairies, it sometimes seems all but impossible. To combat these estrous-detection problems, researchers have developed even more sophisticated methods of synchronizing cows for fixed-time A.I. in the absence of observed estrus. However, with each new step and improvement often comes increased expense and complexity. The "hassle factor" of some protocols is often simply too great for the herd management to implement. This may result in producers "tweaking" the protocol into a system that the management can "handle" or failure to implement any protocol at all. Either option likely results in less-than-optimal reproductive performance.

Recognizing that many synchronization protocols often involve a "hassle factor" led Kansas State University and Select Sires to partner to find a more user-friendly approach.

The most popular synchronization protocol for lactating dairy cattle is known as Ovsynch. This protocol involves an injection of GnRH to synchronize follicular development, followed seven days later with an injection of prostaglandin (PGF) to synchronize luteal regression. All cows then receive a second injection of GnRH at 48 hours after PGF to induce ovulation and are bred by A.I. eight

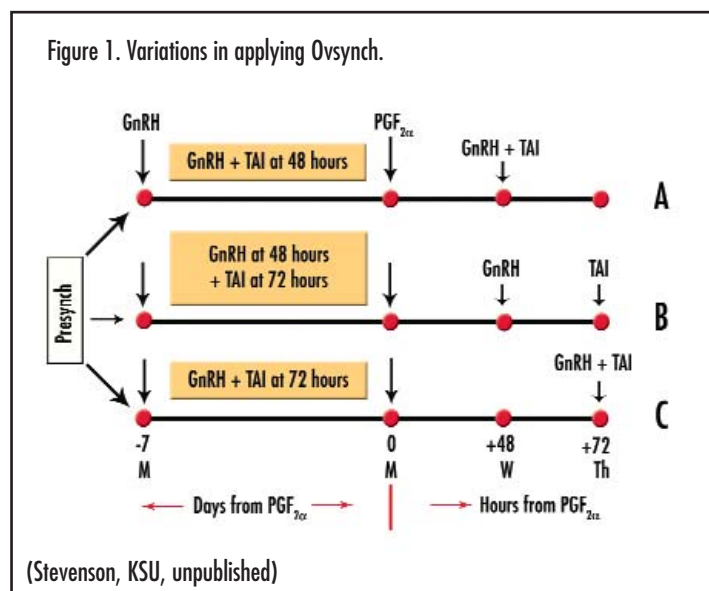
to 18 hours later. Maintaining the appropriate interval from the second GnRH to A.I. is the most difficult part of the Ovsynch protocol for management to implement. In most herds, there is a single time during each day that is most convenient to handle or "lock-up" cows for injections and A.I. The eight- to 18-hour interval from second GnRH to A.I. often means cows must be handled when it is very inconvenient to do so.

Recognizing this "hassle factor" as a major limitation to Ovsynch implementation, Select Sires Inc. funded a research project conducted by Dr. Jeff Stevenson of Kansas State University, Manhattan, Kan., to investigate the fertility potential of several "user friendly" options for implementing the Ovsynch protocol. Each protocol evaluated was designed to keep the timings

of all injections and/or A.I. in multiples of 24 hours so that a single daily lock-up could be used to administer the system. The three protocols tested are outlined in Figure 1. Treatment A is basically a protocol well known to beef cattle producers as CO-Synch, wherein all cows simultaneously receive both GnRH and timed A.I. at 48 hours after PGF. Treatment B is a modified Ovsynch protocol many producers have adapted by default, which includes GnRH at 48 hours after PGF and A.I. is 24 hours later (72 hours after PGF). Treatment C is similar to treatment A except all cows receive the CO-Synch GnRH and fixed-time A.I. at 72 hours after PGF. An important qualifier of this study is that all cows received Pre-synch (two injections of PGF at 14-day intervals with the second injection 12 days before initiation of Ovsynch) before initiating the three treatment variations of

Ovsynch. Across two herds with over 200 cows per treatment, the trends were the same and treatment C achieved the greatest pregnancy rates (Figure 2).

Compared to standard Ovsynch recommendations, the C protocol can make life on the dairy simpler in several ways. First, as by design, everything happens at the same time of day every day (lock ups, injections,



HANDLING SEMEN IN COLD WEATHER AND YEAR ROUND

With the weather turning cold, this is an excellent time to take a moment to review one of the most basic aspects of the A.I. program – semen handling. Semen quality is one of the few aspects of fertility in which the herd owner has almost complete control, but it is also one of the most over-looked.



Semen-thawing procedures are more important than ever in cold weather.

Fortunately, the procedures that ensure high-quality semen is maintained from the thaw bath to the cow are pretty simple.

First, make sure frozen straws stay frozen by keeping them as low as possible below the tank's frost line. Use long forceps or tweezers to remove straws, keep an up-to-date inventory card so you know where to look in the tank and have enough light to see what you are doing so straws and canes can quickly be found, removed and the canisters returned to their normal

storage location. The thaw bath should be within arm's reach of the nitrogen tank, with water temperature about 95 degrees F (a range of 92 degrees F to 98 degrees F is acceptable). Thermometers and thermostats must be routinely calibrated with a mercury or alcohol thermometer to ensure accuracy.

Also, when thawing multiple straws make sure they do not come in direct contact with each other during the thawing process.

Pay attention to time. It's funny how 45 seconds required for semen thawing may seem like hours while the recommended 10 to 15 minutes maximum interval from thaw bath to insemination seems to pass by in a blink of the eye. Once thawed, make sure anything that comes in contact with the straw is prewarmed to about 95 degrees and place the loaded gun inside clothing to protect

it. Make sure you are not thawing more straws than you can deposit in the cow within 10 to 15 minutes.

The most over-looked aspect of the semen handling process is hygiene. The uterus is a great environment for growing bugs and any unwanted organisms introduced by poor hygiene will likely flourish. To test your semen-handling hygiene, just ask yourself the following questions: Would you use your breeding kit for a lunch box? Would you use the thaw bath for a coffee cup or the breeding sheaths as sipper straws? If the thought makes you nauseous, you may have a problem.

The fertility of dairy cattle is influenced by a host of factors, most of which we have very limited, if any, control. Something so straightforward as our semen-handling procedures should never become the limiting factor in reproductive efficiency. To brush up on these procedures in your herd, contact your local Select Sires Reproductive Solutions™ specialist. ♦

A.I.), whereas the CO-Synch approach of cows in treatment C receiving GnRH and A.I. at the same time eliminates one animal-handling event.

Many cows display estrus during the 72-hour interval after PGF. By design of the experiment, these cows were only inseminated at the pre-assigned fixed time and none were bred based on observed estrus. However in practice, cows responding within the first 48 hours after PGF will likely achieve slightly greater conception rates if bred based on observed estrus. Also, hormone costs may be reduced with this approach by omitting the second GnRH injection for any cows detected in estrus during the 72-hour interval after PGF with likely little to no

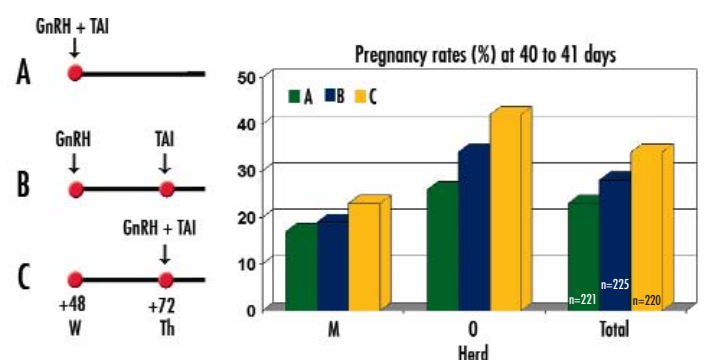
impact on conception rate. This approach would be very complimentary to implement in herds with a good heat detection or tail-chalk program. It's important to remember that in Dr. Stevenson's study, all cows were "Pre-synched," which will tend to

reduce the number of cows that display estrus "early" (less than 48 hours after PGF). Herds that want to breed cows exclusively on appointment-based timed A.I. should not

attempt to use the 72-hour CO-Synch approach without also implementing Presynch.

For more information on synchronization programs to simplify life on your dairy, contact your local Select Sire Reproductive Solutions™ specialist. ♦

Figure 2. Variations in applying Ovsynch.



(Stevenson, KSU, unpublished)