



Repro Tracks

► by **Cliff Lamb**, University of Florida

Considerations for the next breeding season

The breeding season for many producers is approaching fast. Many cattle producers have started their calving season or are preparing to start calving soon. This is likely the most rewarding period of time for most producers, since this is where you get a first glimpse of the genetic decisions you made more than nine months previously.

Prepare for breeding season

At the same time, calving also becomes one of the busiest periods of time for a producer, in which they spend a considerable amount of time keeping an eye on their heifers and/or cows that are preparing to calve, assisting difficult births, and treating calves that are struggling to get going.

During this time it also is critical for producers to start thinking about the new breeding season, such as identifying new genetics for the next breeding season, planning an artificial insemination (AI) program and scheduling an estrus-synchronization program. Producers should be proactive and ask themselves numerous questions to be sure they are prepared for the upcoming breeding season.

What should I consider when preparing for the breeding season?

- There are multiple things to keep in mind.
- Define your breeding season.
 - Select your AI sires and/or natural-service sires.



- Obtain clean-up bulls or obtain natural-service sires.
- If using AI, purchase semen.
- Ensure that all bulls undergo a breeding soundness exam (sometimes referred to as a BSE) before the start of the breeding season.
- Purchase and administer prebreeding vaccination and dewormer products.
- Identify the estrus-synchronization system and purchase estrus-synchronization products.
- Schedule an AI technician.
- Ensure that all females are on a suitable nutrition program entering the breeding season.

The most critical thing to keep in mind is to establish your breeding season dates. Know when you plan to start your AI or bull breeding season and when you plan to end the breeding season. Maintain this on a calendar and adhere to these dates to ensure that calves are born during a desirable calving period during the subsequent calving season. Once the breeding season has been defined, then plan the other important events around the initiation of the breeding season.

How soon in advance of the breeding season should bulls undergo a breeding soundness exam?

Ideally, the breeding soundness exam should be performed between 30 and 90 days before initiation of the breeding season. This way if the bull(s) fails the exam, you have the opportunity to identify a new bull or bulls prior to the breeding season and allow them to acclimate to your operation before being introduced to cows.

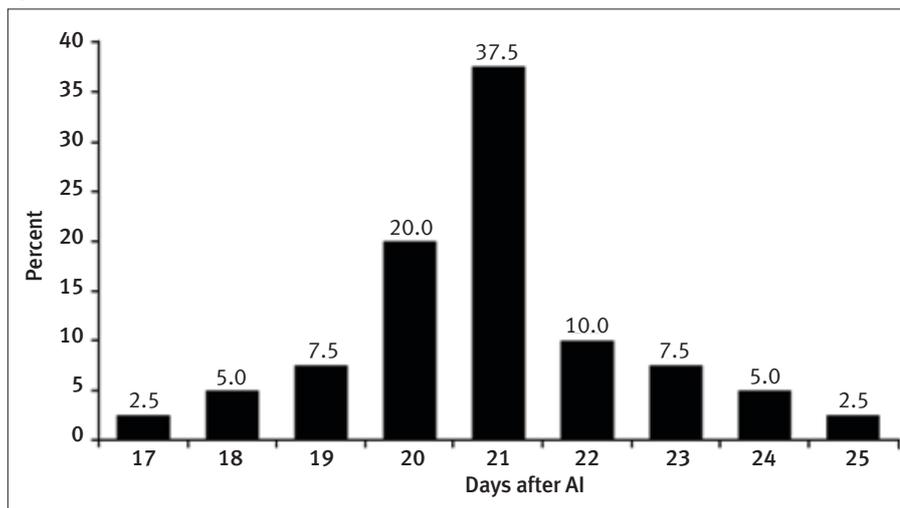
Keep in mind that a breeding soundness exam is not only a semen evaluation. It includes a physical exam that assesses both internal and external organs and limbs, along with a semen evaluation that assesses both the motility (the amount of movement of the sperm) and morphology (the shape of the sperm). From a semen evaluation standpoint, a bull will only pass the exam if desired motility and morphology exceed 70%.

A breeding soundness exam is likely the most important reproductive insurance policy that a producer can purchase, because if a bull fails to yield any pregnancies or has a reduction in pregnancies, the economic impact is greater than any other management decision that a producer makes. Ultimately, between 10% and 20% of bulls will fail a breeding soundness exam. When deciding not to expose all bulls to a breeding soundness exam, each producer should ask whether they can risk the economic impact of a bull failing to get cows pregnant in their herd.

How do I decide what the best estrus-synchronization protocol is for my herd?

When selecting an estrus-synchronization protocol, there are a number of issues to consider, including whether you want to detect estrus and inseminate after the detected estrus, inseminate at a

Fig. 1: Heat distribution of nonpregnant cows initially exposed to estrus synchronization and AI



predetermined time using fixed-time AI, or detect estrus for 72 to 84 hours (depending upon the protocol) and inseminate any cows not detected in estrus at a fixed time.

In addition, it is important to differentiate between cows and heifers, because they tend to respond differently to the estrus-synchronization products. The Beef Reproduction Task Force has current recommended protocols for cows and heifers on its resource page (<http://beefrepro.unl.edu/resources.html>) and we are printing the 2015 recommendations with this column (see pages 214-215). The recommended protocols also appear in the semen directories of the major AI companies, and there are protocols that fit each of the preceding approaches to estrus synchronization.

Other items to consider include the proportion of females that are cycling, as well as the time, labor and cost of the protocol. When trying to decide on a protocol, it is a good idea to speak to an AI company representative who has experience with the various protocols. Keep in mind that estrus-synchronization protocols must be followed precisely, and each product must be administered at the correct dose on the correct day and, in some cases, at a specified time of day. Also, be sure to store, handle and administer synchronization products correctly.

Fig. 2: Resynchronization strategies for nonpregnant heifers and cows after an initial AI

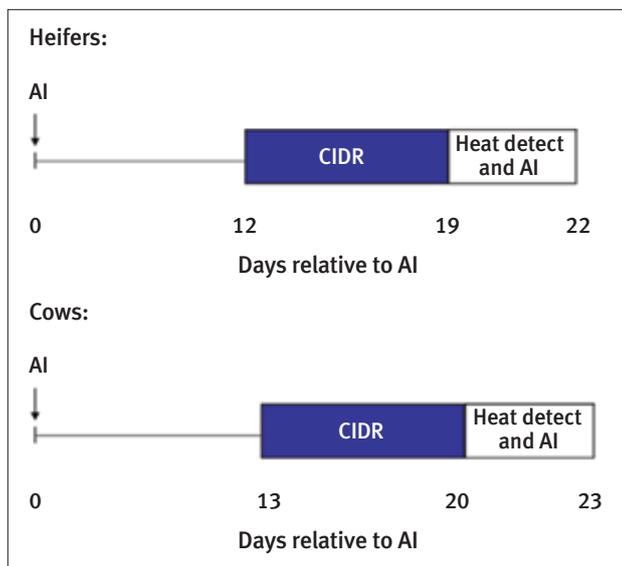
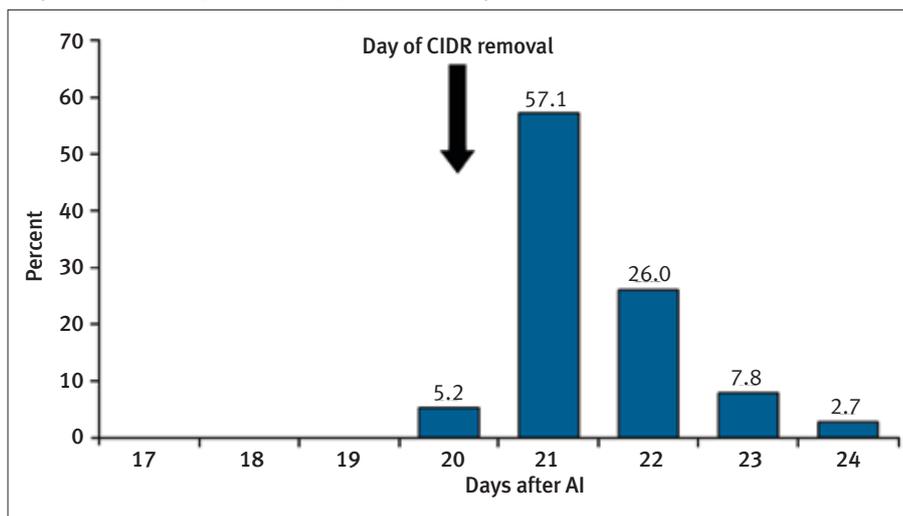


Fig. 3: Heat distribution of nonpregnant cows after being exposed to a resynchronization protocol using a CIDR on days 13 to 20 after an initial AI



The process of selecting a suitable estrus-synchronization protocol has become far more simple and refined; however, those producers who are considering an AI program for the first time should consider speaking to a university extension specialist or representative from a major AI company who can assist the producer in making the correct breeding decision.

Can I administer my prebreeding vaccination during the estrus-synchronization protocol?

While this would be ideal, it is not recommended to administer vaccines within 30 days of the start of the breeding season. This tends to be more critical when using modified-live vaccines, but a good practice is simply to use this “rule of thumb” on most vaccines. One estrus-synchronization protocol (the 14-day CIDR®-PG protocol for heifers) is a long-term protocol that does provide opportunities for producers to administer prebreeding vaccinations when the CIDR is administered. In this case, the CIDR is inserted 30 days prior to initiation of the breeding season.

Are there options for resynchronizing females that do not become pregnant to an initial AI?

When using estrus synchronization, females that fail to become pregnant to the initial AI will return to estrus 17 to 25 days later (see Fig. 1). A practice that is becoming more common is to detect estrus and then AI any of these females that display estrus during this period of time. However, heat detecting twice a day for eight to 10 days is labor-intensive and takes time. Therefore, reducing this period of heat detection by resynchronization to inseminate non-pregnant cows is an attractive alternative strategy.

We developed a strategy to utilize a CIDR that is inserted in heifers on Day 12 (heifers) or 13 (cows) and removed on Day 19 (heifers) or 20 (cows) after AI (see Fig. 2). All females should receive a CIDR since you will not know which heifers are pregnant or not to the first AI. In addition, be sure not to inject any additional products, such as prostaglandin F_{2α} (PGF) or gonadotropin-releasing hormone (GnRH).

On the day you remove the CIDR simply attach a heat-detection device and detect estrus for three days. This reduces the amount of time dedicated to detection of estrus and also increases the opportunity to detect more nonpregnant cows in estrus (see Fig. 3).

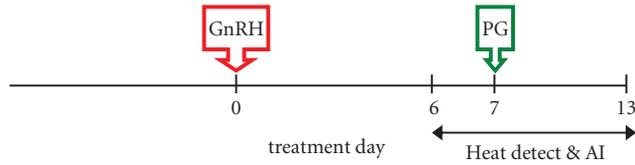
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Editor’s Note: Cliff Lamb is a beef cattle specialist for the University of Florida and coordinator of the Florida Bull Test.

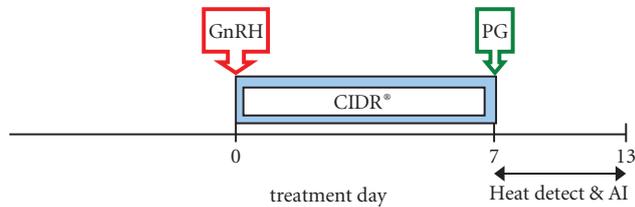
BEEF COW PROTOCOLS — 2015

HEAT DETECTION

Select Synch

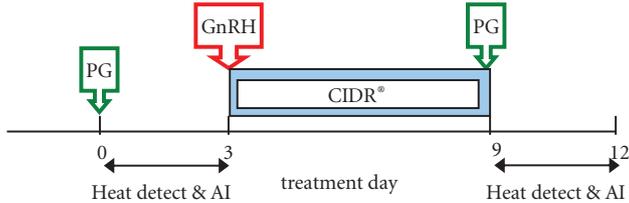


Select Synch + CIDR®



PG 6-day CIDR®

Heat detect and AI days 0 to 3. Administer CIDR to non-responders and heat detect and AI days 9 to 12. Protocol may be used in heifers.



HEAT DETECT & TIME AI (TAI)

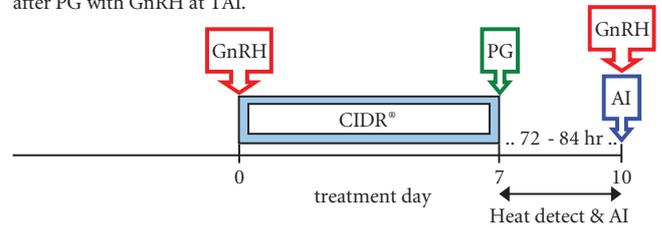
Select Synch & TAI

Heat detect and AI day 6 to 10 and TAI all non-responders 72 - 84 hr after PG with GnRH at TAI.



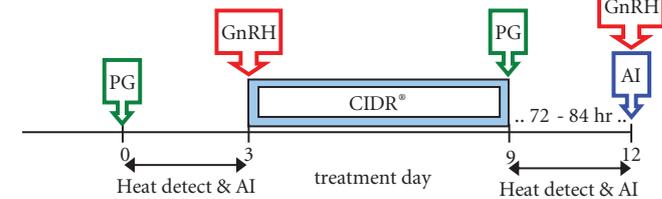
Select Synch + CIDR® & TAI

Heat detect and AI day 7 to 10 and TAI all non-responders 72 - 84 hr after PG with GnRH at TAI.



PG 6-day CIDR® & TAI

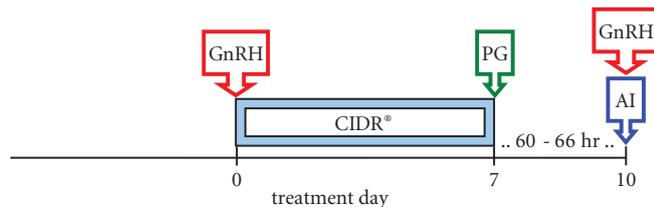
Heat detect & AI days 0 to 3. Administer CIDR to non-responders & heat detect and AI days 9 to 12. TAI non-responders 72 - 84 hr after CIDR removal with GnRH at AI. Protocol may be used in heifers.



FIXED-TIME AI (TAI)*

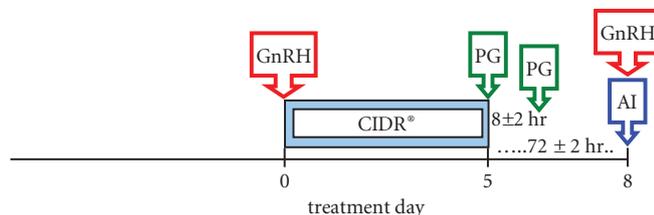
7-day CO -Synch + CIDR®

Perform TAI at 60 to 66 hr after PG with GnRH at TAI.



5-day CO -Synch + CIDR®

Perform TAI at 72 ± 2 hr after CIDR removal with GnRH at TAI. Two injections of PG 8 ± 2 hr apart are required for this protocol.

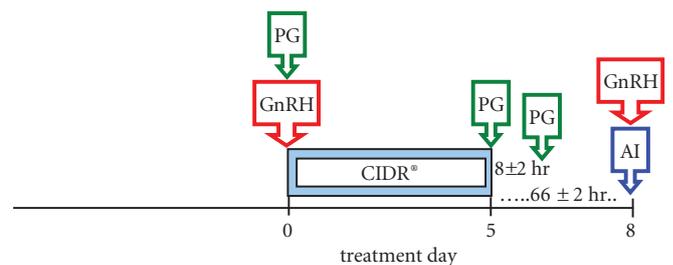


FIXED-TIME AI (TAI)*

for *Bos Indicus* cows only

PG 5-day CO -Synch + CIDR®

Perform TAI at 66 ± 2 hr after CIDR removal with GnRH at TAI. Two injections of PG 8 ± 2 hr apart are required for this protocol.



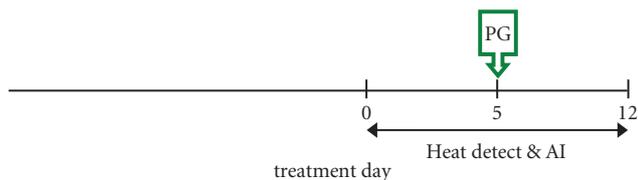
* The time listed for "Fixed-time AI" should be considered as the approximate average time of insemination. This should be based on the number of cows to inseminate, labor, and facilities.

GnRH Cystorelin®, Factrel®, Fertagyl®, OvaCyst®
PG estroPLAN®, Estrumate®, In-Synch®, Lutalyse®, ProstaMate®

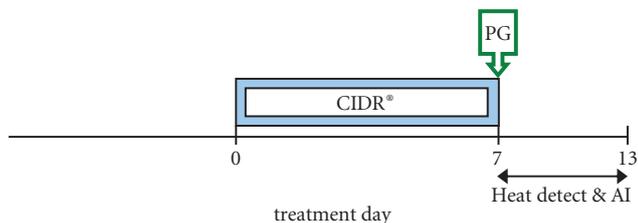
BEEF HEIFER PROTOCOLS — 2015

HEAT DETECTION

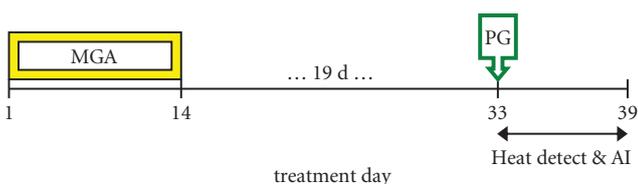
1 Shot PG



7-day CIDR® -PG



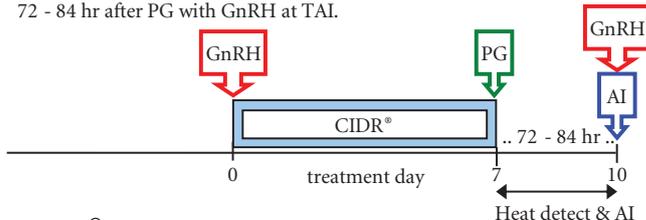
MGA® -PG



HEAT DETECT & TIME AI (TAI)

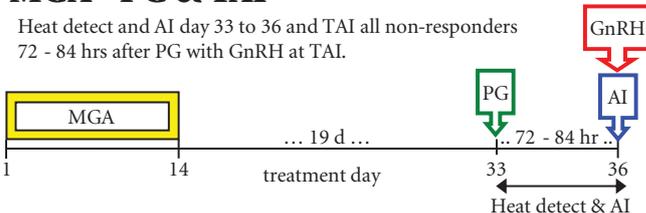
Select Synch + CIDR® & TAI

Heat detect and AI day 7 to 10 and TAI all non-responders 72 - 84 hr after PG with GnRH at TAI.



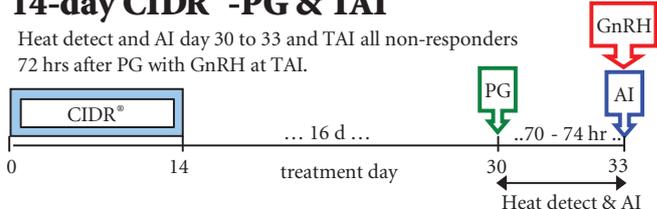
MGA® -PG & TAI

Heat detect and AI day 33 to 36 and TAI all non-responders 72 - 84 hrs after PG with GnRH at TAI.



14-day CIDR® -PG & TAI

Heat detect and AI day 30 to 33 and TAI all non-responders 72 hrs after PG with GnRH at TAI.

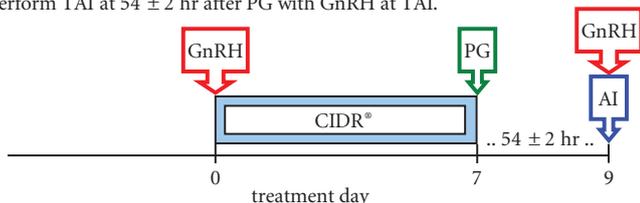


FIXED-TIME AI (TAI)*

Short-term Protocols

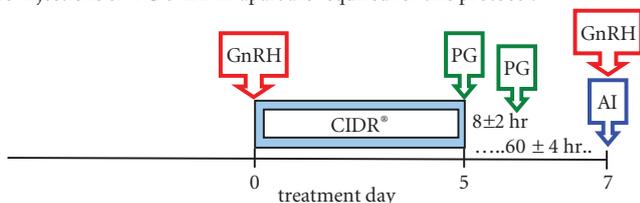
7-day CO -Synch + CIDR®

Perform TAI at 54 ± 2 hr after PG with GnRH at TAI.



5-day CO -Synch + CIDR®

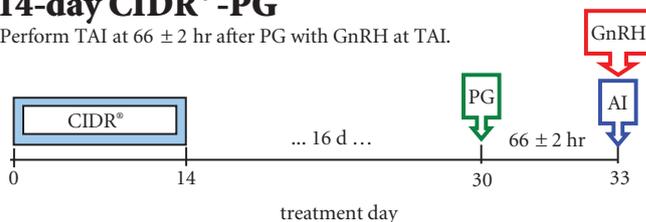
Perform TAI at 60 ± 4 hr after CIDR removal with GnRH at TAI. Two injections of PG 8 ± 2 hr apart are required for this protocol.



Long-term Protocols

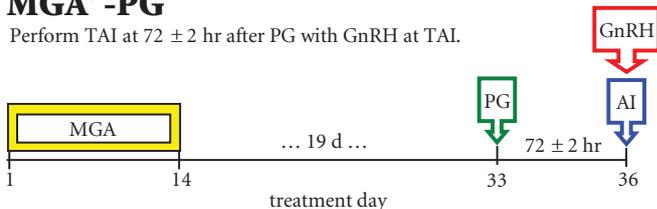
14-day CIDR® -PG

Perform TAI at 66 ± 2 hr after PG with GnRH at TAI.



MGA® -PG

Perform TAI at 72 ± 2 hr after PG with GnRH at TAI.



* The times listed for "Fixed-time AI" should be considered as the approximate average time of insemination. This should be based on the number of heifers to inseminate, labor, and facilities.

 Cystorelin®, Factrel®, Fertagyl®, OvaCyst®

 estroPLAN®, Estrumate®, In-Synch®, Lutalyse®, ProstaMate®