

# Six Factors

Understanding and managing for these six factors can provide better AI results.

**M**ost artificial insemination (AI) programs rely heavily on the wide array of estrus synchronization programs now available in the marketplace.

But, success can vary widely, so it's critically important for producers to understand what factors can negatively affect their AI programs and how they can be managed for the better.

"The key to synchronizing estrus in cows and heifers," explains Cliff Lamb of the University of Minnesota, "is knowing that there are six basic factors that can hurt success and understanding that most of these factors can be overcome through improved management practices."

## Factor 1

### **Factor 1: Age differences in females.**

Two-year-old cows have more difficulty initiating estrus than older cows, even when they calve earlier than older cows.

"Younger cows have greater energy needs than older cows," Lamb says. "They need more energy for lactation, and they need more energy because they're still growing. Both of these things take priority over the female's ability to begin her postpartum estrous cycles."

On the other hand, an older cow's first priority is to maintain essential body functions, and once those requirements are met, remaining nutrients can much more easily accommodate both lactation and initiation of estrous cycles.

"Older cows have no growth requirements, so nutrients are more likely to be prioritized for milk production and initiation of estrous cycles. Because of this priority system, young, growing cows generally produce less milk and remain in anestrus for a longer period of time," Lamb says.

Producers ought to keep in mind that they should manage their young cows differently than they do their older cows. Young cows need more energy and higher-quality nutrients — especially in the weeks leading up to and directly after calving.

"If you can provide your younger cows with better care, you'll have much better

results when you synchronize and AI them later," Lamb says.

## Factor 2

**Factor 2: Days since calving.** As a general rule, the longer the period between calving and synchronization, the better the breeding results.

"Estrus synchronization should not occur prior to 45 days after the birth of the calf," Lamb says.

## Factor 3

**Factor 3: Recordkeeping.** Producers should maintain good recordkeeping systems as a way of achieving success in their synchronization system.

For synchronization to work, producers need to know when their cows calved, whether the cow had a difficult birth and what the birth weights of all the calves were.

"Producers should target starting their estrus synchronization protocols when cows are greater than 45 days from calving. However, if a specific cow had difficulties calving or (has) a large calf, it's advisable to wait an extra few weeks. Without accurate records, these decisions can be extremely subjective," Lamb notes.

## Factor 4

**Factor 4: Facilities.** With estrus synchronization, producers can expect more females to be in heat at a single time than without synchronization — so producers will need adequate facilities to handle the larger numbers of cattle.

In addition, synchronization programs require that females be handled in chutes for injections more frequently than usual; therefore, working facilities need to be able to accommodate the extra work.

"Not only do you need reliable holding

and sorting pens, you should also have a solid alley and chute system," Lamb says. "Anticipating an increase in facility use will certainly contribute to a successful synchronization program."

## Factor 5

**Factor 5: Labor.** Reliable labor is an issue that many people neglect to consider when planning their estrus synchronization programs. Detecting when cows are in heat is important for the success of a synchronization program — and that requires a commitment to having people on location to observe for cows in heat.

"Any labor associated with this process needs to know exactly how cows act when they are in heat," Lamb says. "In many cases, this is often when a program fails. A producer feels that they have more important things to do than spend time heat-checking. They will often leave for the 'more important' job or leave the heat checking to a less than competent individual. The end result is poor estrous response or poor conception rates."

## Factor 6

### **Factor 6: Herd health and nutrition.**

Producers who wish to improve their AI results should also have a veterinarian-approved vaccination program to protect the health of their breeding animals. In addition, producers should continuously monitor their animal-nutrition programs throughout the year, ensuring that their cattle have adequate feed and water available, as well as important minerals and protein.

**Editor's Note:** This informational article was made possible by the National Association of Animal Breeders (NAAB). You can find out more about NAAB at its Web site, located at [www.NAAB-CSS.org](http://www.NAAB-CSS.org), or by calling (573) 445-4406.



