



Six Factors for Better AI Results

Most artificial insemination (AI) programs rely heavily on a wide array of estrous synchronizing 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 estrous 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."

Age differences in females **Factor 1**

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," says Lamb. "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 accommodate much more easily 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," says Lamb.

Producers 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.

Days since calving **Factor 2**

As a general rule, the longer the period between calving and synchronization, the better the breeding results.

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

Recordkeeping **Factor 3**

Producers should maintain good recordkeeping systems as a way of achieving success in their synchronization systems.

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 estrous synchronization protocols when cows are greater than 45 days from calving; however, if a specific cow had difficulties calving or a large calf, it's advisable to wait an extra few weeks. Without accurate records, these decisions can be extremely subjective," says Lamb.

Facilities **Factor 4**

With estrous synchronization, producers can expect more females to be in heat at a single time than without synchronization. Thus, 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," says Lamb. "Anticipating an increase in facility use will certainly contribute to a successful synchronization program."

Labor **Factor 5**

Reliable labor is an issue that many people neglect to consider when planning their estrous 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," says Lamb. "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 estrus response or poor conception rates."

Herd health and nutrition **Factor 6**

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 not only that their cattle have adequate feed and water available, but also important minerals and protein. **HW**

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