

Breeding by Appointment Explained

More than 200 beef producers heard results of six years of research on fixed-time artificial insemination (AI) by animal scientists from the University of Missouri (MU). "The technology is ready for producers to use artificial insemination to 'breed by appointment,'" said David Patterson, MU Extension beef reproduction specialist. "Producers showed by the types of questions they asked that they are very interested."

Producers from four states attended the meeting at Joplin Regional Stockyards, Carthage, Mo.

AI allows producers to choose sires with proven records of producing calves with the traits they prefer. Patterson noted that many attending the meeting were cooperators in the Missouri Show-Me Select Replacement Heifer Program. Many heifer producers already use AI because AI calves bring an average \$80 premium in replacement heifer auctions.

The Carthage presentations focused on fixed-time AI, which allows producers to inseminate all cows in a herd on one day. The method eliminates the labor-intensive chore of checking a cow herd two or three times a day for a month to determine when individual cows are ready to be bred.

A 2004 MU study with 650 beef cows on four research farms showed that 65% of the cows conceived when bred on one

day. The rest of the cows were rebred when they came into estrus on their next cycle. The results showed that 98% of the cows were pregnant at the end of the 60-day breeding season, and 88% calved in the first 25 days of the calving season.

Real advantages

There are advantages of having such a tightly grouped calving season. "The herd has a more uniform calf crop that is more nearly the same size at weaning time," Patterson said. "This appeals to buyers at market time."

A tighter calving season also requires less time spent checking cows at calving time.

"The availability of new technology comes at a time when the changing beef market structure can recognize and reward quality," Patterson said.

Synchronization strategies

One way to synchronize the estrus cycles of cows is to feed half a milligram (mg) of melengestrol acetate (MGA), a progestin that mimics a naturally occurring hormone in cow ovaries. The reproduction cycles are "put on hold" for two weeks. When the feed additive is removed, the cows start cycling together.

In their research, MU scientists tried dozens of protocols to find a timing that produces the highest synchronization and

the greatest number of pregnancies.

Daniel Schafer, MU graduate student from Martinsburg, Mo., led research that compared two methods, known as MGA Select and CoSynch+CIDR. The MGA-Select system starts with feeding MGA for 14 days at 0.5 mg per head per day. Twelve days after the end of MGA feeding, cows receive an injection of gonadotropin-releasing hormone (GnRH). Seven days later, they are injected with prostaglandin (PGF), followed by heat detection and breeding, or timed AI. The CoSynch protocol starts with the insertion of CIDR inserts, followed seven days later with CIDR removal and an injection of PGF, followed two days later by a GnRH injection at the time of AI.

Both programs are highly successful with cows, Patterson said. However, timed protocols are not as reliable with yearling replacement heifers. The MU specialists recommend that replacement heifers be bred after heat detection.

Other MU graduate students presenting findings were Dan Busch of Washington, Mo., and Jackie Atkins of Mandan, N.D.

Atkins gave tips for successful cow synchronization and insemination. Timed AI programs require meticulous attention to detail, she said, noting that the best herd managers will be candidates for

adopting the new technology. "If you aren't already achieving [an] 85% to 90% pregnancy rate in a 60-day breeding season, you may need to work on other problems first," she said.

Busch described his research to successfully breed heifers with new fixed-time AI protocols, although the systems are not yet recommended.

A session on cow reproduction cycles was presented by Mike Smith of the animal reproduction group in the MU College of Agriculture, Food and Natural Resources. Veterinarian Richard Randle of the MU College of Veterinary Medicine described health and vaccination programs in breeding protocols.

Patterson said more training is scheduled in other areas. Interested producers should contact their local MU Extension livestock specialist for more information. Patterson was also scheduled to present the "Latest in AI Technology" Feb. 2 during the Pfizer-sponsored Cattlemen's College® at the 2005 Cattle Industry Annual Convention & Trade Show. Highlights will be available at www.4cattlemen.com.



Editor's Note: This article was written by Duane Dailey, senior writer with MU Extension & Ag Information, which supplied this article.