

Animal Sciences



Cost-Effective Timed-AI Options for Beef Cows

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AI Programs Cut Time, Labor

Some estrous synchronization programs for beef cows allow producers to inseminate all females at a predetermined time without having to detect females in heat. Many producers prefer these “timed-AI programs,” because they eliminate the time and labor needed to detect cows in heat. Unfortunately, many of these programs require cattle to be handled multiple times and, due to the numerous products administered, can be expensive. As we looked for ways to cut expenses, we recently compared the overall costs of two timed-AI programs in lactating beef cows.

Looking for More Economical AI Programs

The 5 day CO-Synch + CIDR program is an effective timed-AI program in beef cows. However, the CIDR, a controlled intravaginal progesterone releasing insert, is expensive. To reduce the cost of the program, we tested to find out if the 5 day CO-Synch program without a CIDR would still result in pregnancy rates from AI that were similar to those from the 5 day CO-Synch + CIDR program (Figure 1).

Cows used in these experiments were kept at four locations (Purdue Animal Science Research and Education Center, Feldun Purdue Ag Center, Voyles Farm, and Southern Indiana Purdue Ag Center). They were randomly assigned to either the 5 day CO-Synch or the 5 day CO-Synch + CIDR timed-AI program.

Figure 1: Experimental Design

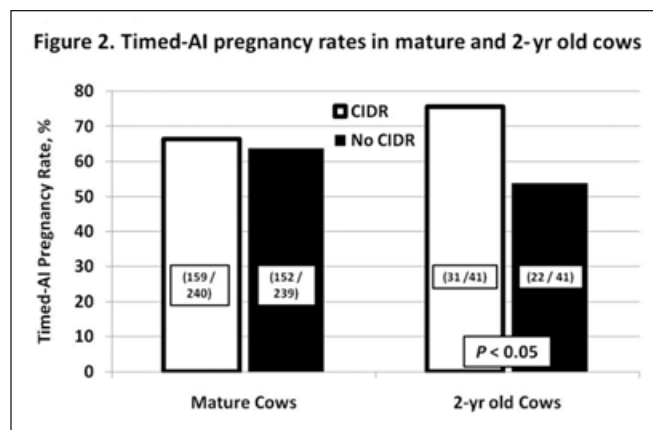


Day 0: All cows received 100 µg of GnRH (Cystorelin®, Merial, Duluth, GA) and half of the cows received a controlled intravaginal drug releasing device (CIDR®, Pfizer Animal Health, New York, NY; 5 day CO-Synch + CIDR; n = 281) while the remaining cows did not receive a CIDR (5 day CO-Synch; n = 281).

Day 5: All cows were administered PGF2α (Lutalyse®, Pfizer Animal Health, New York, NY) and CIDRs were removed in the 5 d CO-Synch + CIDR treatment. Cows at Animal Science Research and Education Center, Feldun Purdue Ag Center, and Voyles Farm received a second 25 mg injection of PGF2α approximately 10 h after the initial injection, while cows at Southern Indiana Purdue Ag Center received a second 25 mg injection of PGF2α approximately 2 h after the initial injection.

Day 8: 72 h after the initial administration of PGF2α, all cows were time inseminated (timed-AI) and received GnRH (100 µg). Cows were not observed for heat and thus were inseminated at a predetermined time.

We found that in cows three years old or older, timed-AI pregnancy rates were no different with or without CIDR for the 5 day CO-Synch program (Figure 2). In two-year old cows, however, timed-AI pregnancy rates were greater in the 5 day CO-Synch + CIDR program than the 5-day CO-Synch program without a CIDR.



When cows were given PGF2 α injections only two hours apart, they had approximately 25 percent lower timed-AI pregnancy rates than cows given PGF2 α injections approximately 10 hours apart.

Pregnancy rates at the end of the breeding season did not differ between treatments.

The Best Options

According to these data, the best timed-AI choice for mature (three years or older) beef cows that are in good body condition may be the 5 day CO-Synch program without a CIDR. However, in two-year-old beef cows, producers should use a CIDR.

And how should producers time injections of PGF2 α ? Due to the reduced timed-AI pregnancy rates in cows given the two doses of PGF2 α two hours apart in our tests, we recommend that producers give the two doses of PGF2 α 10 to 12 hours apart until further research is conducted.