Head to Head

How do MGA- and CIDR-based synchronization systems compare?

University of Missouri (MU) researchers recently compared the use of melengestrol acetate (MGA) and CIDR® inserts and their effects on heifer estrous response, timing of artificial insemination (AI) and pregnancy rates.

A total of 353 heifers at three locations were randomly assigned to one of two treatments by age and weight. Of those, 175 head of MGA Select-treated heifers were fed MGA for 14 days. Researchers administered gonadotropin-releasing hormone (GnRH) 12 days after MGA withdrawal and administered prostaglandin (PG) seven days after GnRH.

The remaining 177 head were inserted with CIDRs for 14 days. GnRH was injected nine days after CIDR removal, and PG was administered seven days after GnRH. Heifers were monitored for signs of heat beginning the day PG was administered.

Researchers AIed heifers 12 hours after the onset of estrus. They determined pregnancy rates by ultrasound 40 days post AI.

Estrous response did not differ between treatments. The researchers determined that peak AI occurred on Day 3 for heifers in both treatments, but distribution of AI was more highly synchronized among CIDR- than MGA-treated heifers.

Pregnancy rate to AI was greater in CIDR-treated heifers (63%) than MGA-treated heifers (47%). However, final pregnancy rates did not differ between treatments.

"In summary, replacing MGA with CIDR inserts improved synchrony of estrus and pregnancy rate resulting from AI in replacement beef heifers," says Dave Patterson, MU animal scientist.

Cows

MU researchers also evaluated 650 head of crossbred and lactating beef cows at four locations. These cows were assigned to groups based on age, days since calving and body condition scores (BCSs).

Cows assigned to the MGA Select treatment (n = 327) were fed MGA for 14 days. GnRH was injected on Day 26, and PG was injected on Day 33.

Co-Synch + CIDR-treated cows (n = 323) were injected with GnRH and equipped with an Eazi-Breed™ CIDR insert for seven days. PG was injected, and CIDRs were removed seven days later.

The cows were AIed 72 hours after PG injection for cows assigned to the MGA Select treatment, and at 66 hours after PG administration for cows assigned to the Co-Synch + CIDR treatment.

All cows were injected with GnRH at the time of insemination, and AI was performed by one of three experienced technicians.

Three AI sires were used at Location 1, and one sire was used at locations 2, 3 and 4. Cows were exposed to fertile bulls for natural service 14 days after AI for a 60-day natural-service period at locations 1, 3 and 4 and for a 45-day natural-service period at Location 2.

Researchers found no differences between treatments at the respective locations for age, days postpartum, BCS or estrous cyclicity status at the initiation of treatment; however, there were differences among locations.

There was no effect of treatment, technician or sire on pregnancy rates resulting from fixed-time AI.

Most importantly, pretreatment estrous cyclicity before the initiation of the MGA Select or Co-Synch + CIDR protocols did not affect pregnancy rates resulting from fixed-time AI. Final pregnancy rates did not differ between treatments.

"These results indicate that estrus synchronization with the MGA Select and Co-Synch + CIDR protocols produce comparable pregnancy rates to fixed-time AI when inseminations were performed at 72 and 66 hours after PG, respectively," Patterson says. "The results of our research present beef producers a choice and means for expediting genetic improvement and reproductive management."

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,* www.NAAB-CSS.org, *or by calling (573) 445-4406.*

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