



Vet Call

► by Drs. Bob Larson and Kelly Rosenkrans

Use of CIDR® in estrus synchronization and AI breeding programs

This summer, beef producers in the United States gained a new tool to be used in estrus (heat) synchronization programs. This tool is called a CIDR® (controlled internal drug release). It is a T-shaped insert, about 5 inches (in.) long, that is inserted into the vagina of breeding-age females.

How does it work?

The CIDR (pronounced like “cedar” tree) releases progesterone, which is absorbed into the bloodstream. Progesterone is the hormone naturally secreted by the corpus luteum (a structure on the ovary) during the middle portion of the estrous cycle.

CIDRs were developed in New Zealand and have been used there and in other countries for several years with good results. The wings of the CIDR are pulled in so that the entire insert is shaped like a rod, which can be deposited into the vagina with an applicator. On the end opposite the wings, a tail is attached that hangs outside the animal and allows you to easily remove the insert seven days after insertion. The backbone of the CIDR is a nylon spine covered by a progesterone-impregnated silicone skin.

Upon insertion, blood progesterone concentration rises rapidly. Maximum concentrations are reached within an hour. Progesterone concentrations are maintained at a relatively constant level during the seven days the insert is in the vagina. Upon removal of the insert, progesterone concentration in the bloodstream drops quickly.

Very few CIDRs fall out during the seven-day treatment. The average loss is only 2%-3% in most herds, with a few reaching 10%. Research with dairy cows has shown that while most cows with a CIDR insert will have a clear to cloudy mucus discharge from the vagina due to mild irritation of the vaginal wall, very few (2%) had evidence of a vaginal infection.

Recommended schedule:

Day 0 — Insert the CIDR device into the vagina of heifers or cows to be bred. The device is left in place for seven days.

Day 6 — All cows and heifers to be bred are injected intramuscularly (in the neck) with a 5-cc dose of Lutalyse®.

Day 7 — The CIDR is removed. The animal’s head does not necessarily need to be caught.

Some people have altered this schedule by giving the Lutalyse injection on the same day that the CIDR is removed. Although this alteration is fairly effective, the maximum results will be achieved if the prescribed schedule is followed. The Lutalyse injection should be administered into the neck muscles with a 1-in., 16-gauge needle.

CIDRs are labeled for use in the synchronization of both beef cows and heifers (as well as dairy heifers). They are also labeled for their ability to cause suckled beef cows to show estrus sooner after calving, and will cause replacement heifers to express heat at a younger age and lighter weight.

Handling considerations

Research using CIDRs in beef heifers and cows was conducted over several years at numerous universities around the country. A report that summarized those trials indicates that use of CIDRs did not decrease fertility compared to untreated females. It also was successful in inducing almost 50% of noncycling females to show signs of a fertile heat following removal of the CIDR in the herds tested.

To avoid problems with CIDR use, individuals handling the device should wear rubber or latex gloves to prevent exposure to

the progesterone and to reduce the chance of carrying contamination from your hands into the vagina of the cow or heifer. Cleanliness is very important to avoid vaginal infections. The inserts available in the United States have a lower dose of progesterone than inserts in other countries. For this reason, and to enhance cleanliness and decrease the chance for disease transfer between animals, reusing CIDRs is not advisable.

In some groups of animals (typically heifers), curious individuals will chew on the tails of the CIDRs and pull them out of their herdmates. To reduce this problem, animals with the insert should not be housed in crowded conditions, and the tail of the CIDR should be cut so only a short section protrudes from the vulva.

If a CIDR is left in an animal longer than seven days, fertility to subsequent breeding will start to decline. If a CIDR is accidentally placed in a pregnant cow or heifer, no problems will occur due to the CIDR itself, but the injection of Lutalyse will cause abortion in many animals. There is no preharvest withdrawal for either Lutalyse or CIDRs.

Although CIDRs are a welcome tool for use by producers interested in estrus synchronization and artificial insemination (AI), the tool’s success in individual herds will vary based on human and animal differences. To successfully synchronize heat and have a high pregnancy rate in an AI program, a high percentage of the females must be cycling and in good body condition, be free of parasites and reproductive disease, be detected in heat, and be bred by a skilled technician using quality semen. If any “link” in the chain is weak, the success of a synchronized breeding program is in doubt.

Producers who have experience with synchronization and AI, and who work to ensure that all details are managed, have very successful breeding programs. Working with experienced producers and experts such as veterinarians and breeding service representatives will help less-experienced producers achieve the same kind of success.

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