



Repro Tracks

► by **Cliff Lamb**, University of Florida

Postpartum anestrus

I have had the opportunity to speak at numerous functions during the past 20 years. During many of those presentations I have discussed the influence of postpartum (after calving) anestrus (lack of estrous cycles) on fertility of beef cattle herds. One thing that I have noticed is that many producers do not realize how important it is for cows to overcome postpartum anestrus to become pregnant. Hopefully my answers to these frequently asked questions will provide some clarity.

What is postpartum anestrus?

Most beef cows experience a period of postpartum anovulation (lack of recurring ovulatory cycles), or anestrus (lack of expression of estrus), between 30 and 120 days after they calve. During this period of time, the uterus of the cow must recover from maintaining a calf through gestation and calving. This is followed by an intricate communication of hormones among the ovaries, hypothalamus and pituitary together to reinitiate estrous cycles. Essentially, when all hormonal signals are in place, a cow will reinitiate her estrous cycles and maintain regular estrous cycles until she becomes pregnant.

However, a cow cannot become pregnant until these estrous cycles have been reinitiated. Therefore, as cattle producers, it is imperative we provide an environment that best allows cows to reinitiate their estrous cycles to be sure they can become pregnant again as soon after calving as possible. For example, if a cow is to calve once a year and her gestation length is 283 days, she must reinitiate her postpartum estrous cycles to become pregnant within 82 days after her last calving.

What are the main factors affecting postpartum anestrus?

Suckling and nutrition are two primary factors that affect the duration and onset of postpartum estrous cycles. For beef producers, one of these — suckling — we cannot do much about, since we rely on our cows to nurse their calves until weaning. The other — nutrition — we can significantly influence.

It still remains surprising that many producers believe that milk yield or milk production influences the duration of postpartum anestrus. Milk

Table 1: Postpartum interval of heifers calving at varying body condition scores

| BCS | Postpartum interval, days |
|-----|---------------------------|
| 3 | 88.5 |
| 4 | 69.7 |
| 5 | 59.4 |
| 6 | 51.7 |
| 7 | 30.6 |

Source: BCS; Houghton et al., 1990.

production may alter nutritional requirements of cows, but the production of milk does not influence the duration of postpartum anestrus. As an example, dairy cows produce significantly more milk than beef cows, yet they usually initiate their postpartum estrous cycles within 35 days after calving. This is simply because the suckling calf was removed at birth.

Are there strategies to help overcome postpartum anestrus?

From a nutritional standpoint, a good rule of thumb to keep in mind is to remember that the condition at which a cow calves generally influences the duration of postpartum anestrus. Although postpartum feeding may reduce the duration of

postpartum anestrus, feeding before birth to ensure that cows calve at an adequate body condition is more critical. Table 1 demonstrates the postpartum interval of cows calving at various body condition scores (BCS). As you may note, thin cows (BCS 3) have postpartum intervals that exceed 82 days, and these cows will not give birth to calves every year.

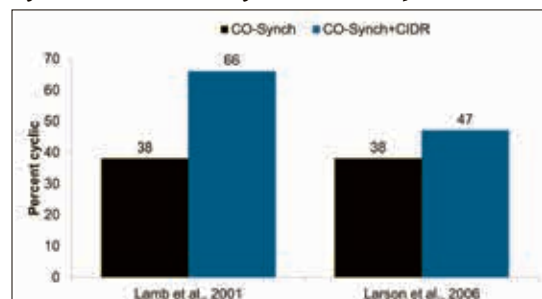
In future articles we will address many topics associated with estrous synchronization, but one of the often-overlooked primary advantages of estrous synchronization is the ability of some of the products to initiate estrous cycles in cows that are experiencing postpartum anestrus. This is especially true in cows that receive progesterone in the estrous-synchronization protocol.

In the United States, the only progesterone-containing product approved for use in cows for estrous synchronization is the Eazi-Breed™ CIDR®. Utilizing a CIDR will enhance the percentage of cows that will overcome postpartum anestrus and become pregnant earlier in the breeding season than cows that were not exposed to the progesterone. Fig. 1 demonstrates the positive effects of inclusion of a CIDR on initiating estrous cycles on postpartum cows from two studies.

How do I determine the percentage of cows that are cycling before the start of the breeding season?

Frequently when asked, producers indicate that “most” of their cows are cycling because they see cows being mounted in the pasture; however, this does not indicate what percentage of cows may be cycling. In most cases, somewhere between 30% and 70% of the cows will be cycling at the start of the breeding season. A simple way to estimate the percentage of cows cycling in the herd is to do a little estrous or heat observation for two or three days. For every 100 cows, if every cow is cycling, there should be five cows in heat every day. If four cows are in heat, then the cycling rate is 80%. If three cows are in heat, then the cycling rate is 60%, and so on. Use this simple math just prior to the start of a breeding season and you may be surprised at how low the cycling rate is in your herd.

Fig. 1: Percentage of cows induced to initiate estrous cycles after receiving the CO-Synch or CO-Synch+CIDR estrous synchronization protocols



Source: Lamb et al., 2001; Larson et al., 2006.

EMAIL: gclamb@ufl.edu

Author's Note: Literature cited: Houghton, P. L., et al. *J. Anim. Sci.* 68:1438-1440. Lamb, G.C., et al. *J. Anim. Sci.* 79:2253-2259. Larson, J. E., et al. *J. Anim. Sci.* 84:332-342.