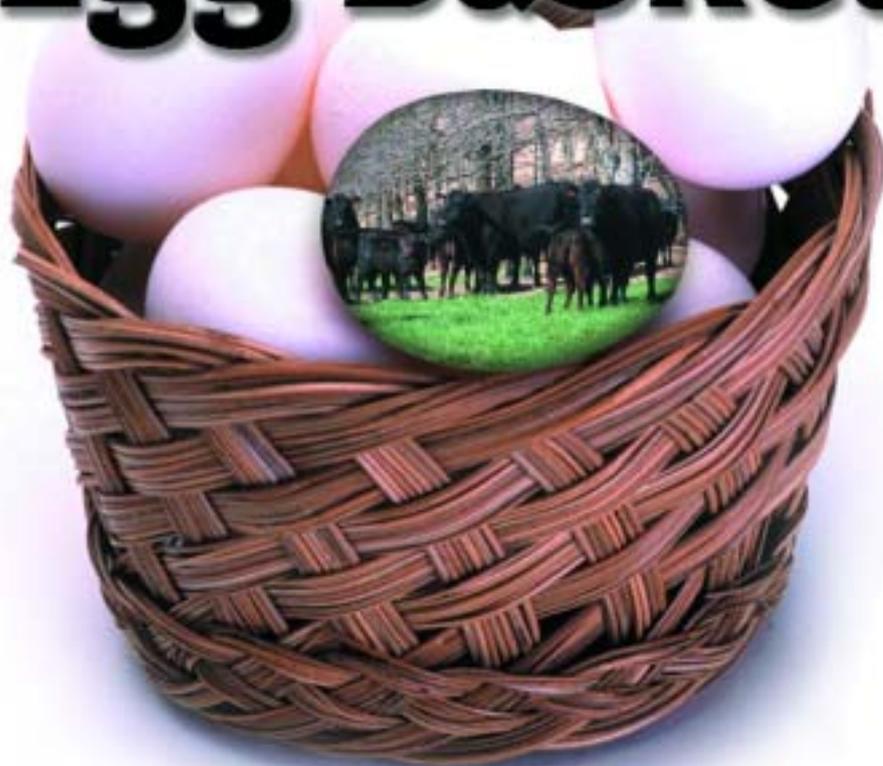


Mind the Egg Basket



The rate of uterine involution is an indicator of your herd's overall performance and profitability.

by **Ron Torell & Donald Klingborg**



Unbelievable!

That single word best describes the structure and function of what is one of the most complex organs in the body.

The uterus is simply fascinating and unbelievable. The uterus accepts a substance foreign to it (the calf); blocks the normal body defense designed to destroy foreign “invaders”; and nourishes, protects and sustains the developing calf while the uterus grows from a diameter of about 1 inch (in.) to 24 in. or more.

When the time is right, the uterus accepts a signal from the calf and transforms itself into a delivery system, forcibly expelling the calf, and then begins an amazing process to prepare itself for a repeat of the whole cycle.

It is that recovery process between calving and pregnancy that is so critical to a profitable beef enterprise — and is so frequently misunderstood.

In recovery

Following calving, the uterus must expel the fetal membranes and fluid that surrounded the calf, reabsorb the small, concentrated button-like areas where the calf and mother exchanged nutrients and oxygen, repair the uterine lining, and shrink to a size ready to accept the next embryo. The normal uterus will lose more than 80% of its precalving size within the first two to three weeks postpartum.

The process controlling this recovery is complex and filled with a variety of control

systems sending signals between the glands in the uterine walls, the ovaries, several areas in the brain, and the adrenal glands (located by the kidneys). Other hormones, such as oxytocin (which is associated with milk letdown), also play a role in recovery. Plenty can go wrong, but I'm always amazed at how much goes right, frequently in spite of what we human caretakers do.

The rate of uterine involution — a term that encompasses uterine shrinkage, fluid loss and tissue repair — is an indicator of the overall status of the recovery and is largely determined by the nutrition, lactation rate, age, health and flesh condition of the cow. This involution period is often referred to as the anestrus period.

Reproduction on hold

During the anestrus period, the cow's reproductive abilities are put on hold while uterine involution occurs and her body can build up enough energy reserves to allow her to become reproductively active again. The postpartum interval is the amount of time that the cow remains in anestrus until her first estrus cycle. Biologically, the postpartum anestrus period is the period of highest nutrient demand.

Reducing the length of the anestrus period is the first basic principal of reproductive management. The best way to shorten the postpartum interval is to improve management practices. Let's review some of the best management practices.

- ▶ If a cow is in poor condition and lactating, chances are it could take months for her to rebreed. If she is a 2- or 3-year-old cow, a large-framed cow or a heavy-milking cow, she may not breed back at all. Suckling greatly exaggerates the effects of poor nutrition and can slow the return of estrus.
- ▶ Nutritional and body reserve deficiencies are the first place to look when problems with postpartum anestrus are encountered. Adequately addressing the nutritional needs of the cow and using body condition as a management tool will help the cow overcome anestrus.
- ▶ Reproductive diseases and bull fertility also play a role in open cows. Therefore, management of these issues should be incorporated into the total program.
- ▶ If the goal is to have a cow calve at the same time next year, the anestrus and postpartum period should not exceed 83 days. In order for this to happen, management of the anestrus period

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needs to be a 12-month effort. We need to manage body condition of the beef cow by storing, or banking, fat reserves during periods of low nutrient demand, such as the second trimester of pregnancy. This bank serves as an energy source from which to draw during periods of higher energy demand, such as the last trimester and the anestrus period. It is not economical to flesh a cow during these two periods.

- Consider using body condition scores (BCSs) to monitor the condition of your cattle, particularly in the fall after weaning and a few months before calving. Most commonly, scores from 1 to 9 are assigned to cows, 1 being the thinnest score and 9 being the fattest. A BCS of 5 is considered optimum breeding condition for mature cows, while a BCS of 6 is suggested for first-calf heifers.

If you do not have body reserves at a minimal level, your cows cannot reproduce; they will be able to do a lot of other things, but they will not be able to reproduce.

Maintaining body condition

Evaluating body condition is not enough; you have to act on your assessment. During dry years and as BCS is reduced below a 5, management changes — such as supplementation, weaning or moving cattle to better feed — must be made. It is easier and cheaper to preserve body condition than it is to bring a thin cow back into condition.

Many ranches in western states graze cattle on public lands. It is often difficult, if not impossible, to implement management practices such as strategic weaning or supplementation while on public lands. Oftentimes, it is even against government regulations. That does not change the fact that by not implementing these practices, a thin cow will be the result, and thin cows will cost

you in extended postpartum interval the following year.

One of the best ways to preserve body condition is to evaluate time of weaning and utilize strategic weaning. Certain estrus-synchronizing protocols, temporary weaning, winter feeding or grazing classes of cattle separately, utilizing teaser bulls during the anestrus period, calving heifers prior to mature cows or feeding energy pre- and postpartum are all management practices that help reduce the anestrus period.

Other management strategies

- We should never underestimate the power of genetics. Selecting bulls of moderate frame and milk and high reproductive efficiency is a long-term aid to decreasing the anestrus period.
- Another method of reducing the length of the anestrus period is to minimize calving difficulty. Cows that experience difficulty during calving often have more difficulty overcoming effects of anestrus and take longer to rebreed. Anything that slows involution will delay or prevent a successful subsequent pregnancy.
- The cervix, the valve that seals the uterine interior from the outside environment, opens wide at calving to allow the calf to pass, thereby admitting whatever bugs are in the neighborhood — and the neighborhood has plenty. This open valve (the cervix) often leads to a contaminated uterus at the time of calving. The cow may subsequently develop a uterine infection. Management systems that minimize calving difficulty and use sanitary practices when assisting births save more calves and attain higher rebreeding rates the next breeding season.

If you would like to discuss this article or simply would like to talk cows, do not hesitate to call (775) 738-1721 or send e-mail to torellr@unce.unr.edu.



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Facts and fallacies about the uterus

Fallacy: *The uterus is like an old sock, simply receiving and holding the calf until it is ready to be born.*

Fact: The uterus is a dynamic, complex organ with interactions between the walls and deep tissues, the ovaries, the brain, and other organs within the body.

Fallacy: *I can treat the signs of uterine dysfunction, such as abnormal discharge, poor involution, anestrus, etc., effectively and economically.*

Fact: A dysfunctional uterus will never approach the same level of performance as one that is normal, regardless of treatment. There are treatments that can improve fertility, but prevention of the problem is the best method — and prevention of most uterine problems is possible and profitable.

Fallacy: *Treating by uterine boluses, infusions, hormones or systemic therapy will improve subsequent fertility.*

Fact: No treatment returns an abnormal uterus to the same fertility level as a normal uterus. Best management practices prevent rather than treat problems.

Fallacy: *I can treat the signs of the problem, such as retained fetal membranes or a foul-smelling discharge, and solve the problem.*

Fact: That approach is like taking aspirin to fix a headache that results from wearing a hat that is too small. The hat size needs to be changed, not better aspirin developed.

Fallacy: *Vaginal discharge is a sign of uterine infection.*

Fact: Lochia is a normal and expected vaginal discharge during the early postpartum period. Discharge that is very watery, in large quantities and foul-smelling represents a problem.