



Calf Removal

A Way to Stimulate Reproduction in Cows

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Cows that are slow to breed or fail to breed are costly and reduce herd productivity and profitability. Many factors affect a cow's ability to breed after calving. Assuming that reproductive diseases are not prevalent in the herd, the most common cause of slow breeding and failure to breed is inadequate nutrition.

Research trials have found that cows that are properly nourished have the highest pregnancy rates and breed quicker after calving. Cow age is another factor that affects pregnancy rates in calving cows. First-calf heifers are slower than mature cows to resume estrous cycles, making it more difficult for a young female to breed. A final factor — nursing stress — delays the resumption of estrous activity and subsequent breeding.

Suckling activity by a calf alters the release and the level of hormones required by the cow to resume her estrous cycles after calving. Removing a calf from the dam, either short-term or permanently, reduces nursing stress and speeds the resumption of estrous activity. In poorly nourished females, the result is improved reproductive performance.

Conditions That Warrant Altering Nursing Activity

Although many producers put their best efforts into providing adequate nutrition for their herd, extreme weather conditions such as drought or extended cold

can reduce the effectiveness of a proper feeding program. Under such conditions, calving females will be nutritionally stressed, and their ability to resume estrous activity becomes limited. In worst cases of extended weather extremes, estrous activity may be so limited that few, if any, females will breed. Other factors can also result in nutritional stress, including:

- ★ Excessive grazing pressure (over-grazing)
- ★ Insufficient quantity of feed
- ★ Inadequate quality of feed.

When nutrition is inadequate for any reason, methods to alter nursing stress are warranted. This is especially true for first-calf heifers. Because of their young age, they are particularly sensitive to even a moderate level of nutritional stress.

Methods to Alter Nursing Activity

Calf removal from the dam has been used for many years as a way to alter nursing activity, lower stress on the dam and improve breeding performance. Short-term calf removal (not to exceed 48 hours) is effective in females experiencing only marginal nutritional stress. Such females usually respond well to short-term calf removal. However, females that are under severe nutritional stress may only respond to one of three more aggressive forms of calf removal — once-daily sucking, early weaning (complete weaning with alternative rearing of the calves

at an early age - 60 days or older) or selling calves at an early age (80 to 100 days old).

Short-Term Calf Removal

This method is commonly called 48-hour calf removal and is the least aggressive method of altering nursing activity. It is recommended only for females under moderate nutritional stress; it is not effective in females under severe nutritional stress. As the name implies, calves are not allowed to nurse their dams for 2 days. The calves should be placed in a pen or small trap with a fence that completely prevents the calves from getting out and nursing.

While the calves are away from their dams, provide fresh water, high quality hay or grazing plus 2-3 pounds of a creep or grower ration. To lessen the risk of younger calves becoming orphaned or ill, it is best not to use this method until they are at least 45 days of age. Do not use this method if inclement weather (cold and rainy) is expected during the period that calves are to be removed from their dams. Instead, wait for milder weather.

Thirty to 80 percent of females receiving 48-hour calf removal will resume their estrous cycles within approximately 20 days, depending on the degree of nutritional stress and the ages of the female and her calf. Pregnancy rates in the first 21 days of breeding after 48-hour calf removal will usually be twice the pregnancy rates of cows whose calves have not been removed.

Some people who use short-term calf removal separate calves from their dams for up to 72 hours. Research has shown, however, that the benefits occur within the first 48 hours and that another 24 hours of separation is of no added benefit. Be sure to allow calves time to properly "mother-up" inside a pen or trap at the end of the 48-hour period, especially if they are to be subsequently herded or transported.

Once-Daily Suckling

As its name implies, calves are allowed to nurse only once a day. Certainly, the once-daily suckling method requires the producer to sort the cows from their calves daily, but if done properly, this method need not last more than 40 to 50 days.

When the cows are turned in each day (either morning or evening), the calves will nurse their dams for 30 to 45 minutes, the time required for most calves to become full. The cows are then returned to their pasture. In most cases, all females will resume estrous activity within 40 days of the start of once-daily suckling as long as they are being given mod-

erate amounts of feed supplements to reduce nutritional stress.

Although once-daily suckling requires frequent animal handling, it allows the producer to retain the calves to a marketable age without sacrificing them at a young age, as with permanent calf removal. While away from their dams, calves require feed supplements of high quality hay or grazing, plus 2-3 pounds of a creep or grower ration per calf daily. Be sure to provide adequate mineral supplements.

As calves get older, or grazing becomes limited, up to 4 pounds of creep or grower ration may be needed. It is best not to use this method on calves less than 45 days of age due to increased risk of illness in younger calves. Medicated supplements may help reduce potential illness in the calves, but consult a veterinarian before using medicated feeds. If exposure to weather is a problem, provide shade and shelter for the calves. Try not to house the calves in a crowded and/or dusty pen; provide instead a small trap or pasture. Be sure to check for illness and provide any necessary medications.

Early Weaning

This is also an aggressive and effective method of stimulating reproductive performance. Calves are permanently placed in a feed trap or pasture away from the dams and not allowed to nurse. Calves should be reared on high quality grazing or hay and given appropriate supplemental feeds as would be done with once-daily suckling. It is best to wait until calves are at least 60 to 80 days old before implementing early weaning.

Younger calves may experience a high degree of illness under these conditions. Be sure to monitor calves closely for illness during the first 30 - 45 days after weaning. Treat sick calves and provide shade and shelter to avoid unacceptable rates of illness. If acceptable weather conditions exist during the first 2 to 3 weeks of the early weaning period, illness rates generally do not exceed 20 percent. They can, however, be higher if there is a high proportion of calves younger than 60 days old. It can be expected that all females will resume estrous activity within 30 days of initiating early weaning.

Selling Calves at 80 to 100 Days of Age

In the early days of ranching, many producers discovered that a cow would show a high incidence of breeding activity within a 2 to 3 week period following the accidental loss of her calf. They also noticed that thin cows would not resume estrous activity until their calves were sent to market.

These “forms” of calf removal encouraged scientists to determine what was causing the females to breed so quickly after a calf had been lost or sold. Researchers found that calf removal stimulates a release of hormones into the cow’s blood, causing estrous to resume. It was also noted that thin cows had lower hormone levels than cows that were not thin. It quickly followed that permanent calf removal (selling at an early age) could improve reproductive performance.

Permanent calf removal is used today, particularly in first-calf heifers, to dramatically reduce stress brought on by nursing and poor nutrition. The calves are typically sold at around 80 to 100 days of age. In most cases, this results in a high proportion of the females breeding in a 30 to 40 day period after sale of the calves. This form of calf removal is very effective but results in selling calves at a young age and at light weights, thus reducing income. Equally effective alternatives, such as once-daily suckling or early weaning, allow calves to be retained to a marketable age and weight.

No Udder Problems in the Mothers

With any calf removal procedure, the dam’s udders will become full. Research on thousands of beef cows have found no permanent problems from overfill of the udder, and milk production in later years is not affected. Females will become nervous when they are away from their calves but will return to normal behavior within a week of any treatment that alters nursing stress.

No Reduction in Calf Performance

Calves that are weaned early and those suckling once a day show a slight drop in growth rates in the first 20 to 30 days of removal from their dams. They resume normal growth shortly thereafter, as long as adequate nutrition is provided. Their weights at 7 months of age are similar to calves allowed to nurse normally. Calves that are removed from their dams in the 48-hour removal program show only temporary weight reduction (about 10 pounds), but this weight is recovered within 10 to 14 days.

Deciding Which Type of Calf Removal to Use

Remember that in adequately nourished cows, it is not necessary to remove the calf and reduce nursing stress. Calf removal is most often used to improve reproduction in females that are under severe nutritional stress. In these conditions, pregnancy rates

will be extremely low without some form of calf removal. The best management approach — providing adequate nutrition — avoids the need for removing a calf.

However, calf removal is sometimes used in mature cows that have begun to lose their normal pattern of breeding to shorten the breeding season and force early resumption of estrous activity. Some producers use it routinely in first-calf heifers because these young females are slower to breed after calving than mature cows, particularly when there is even a slight degree of nutritional stress. If calf removal is needed, several factors determine which method should be used:

- ★ The age of the mother — First-calf heifers are usually the cows where calf removal is needed most. These females are especially sensitive to even moderate nutritional stress. When feed resources are limited, some form of calf removal is a must if acceptable pregnancy rates are to be realized in these cows.
- ★ The body condition scores (BCSs) of the mothers — Females with a BCS of at least four (moderate nutritional stress) will respond well to 48-hour calf removal. Females that have a BCS of less than four (severe nutritional stress) will require the most aggressive forms of calf removal to achieve acceptable pregnancy rates.
- ★ Calf age — Do not remove any calf under 45 days of age. Calves require adequate exposure to the antibodies present in the milk of early lactation. The stress of temporary or permanent weaning can overwhelm a young calf’s immune system and make it more susceptible to disease. Calves older than 45 days may experience some illness but to a much lesser degree than younger calves.
- ★ Available labor — Early weaning is labor intensive in the first 30 to 50 days of initiating treatment. As calves get older, labor requirements may decrease, particularly if the calves can be fed with self-feeders or turned out on pasture. Once-daily suckling requires daily labor (about 1 hour daily) for at least 45 to 50 days, after which the calves can be returned to pasture with their dams. Compared to other methods, labor needs are minimal for 48-hour calf removal.
- ★ The type of facilities needed — For any type of calf removal, shade is needed in hot weather, and shelter is required if cold and rainy weather is expected in the first days

after calves are removed. Provide feed troughs so that rations can be kept clean and off the ground. Fresh water is a necessity, and make sure that all troughs (water and feed) are low enough to be reached by smaller calves. Fences should be secure enough to prevent calves from rejoining their dams. Nursing must be prevented to get the desired response in the dams.

- ★ Feed expenses — Costs differ between treatments and are highest for early weaning compared to once-daily suckling. Total feed expenses will vary widely due to the amount

of available hay or grazing, the amount of supplements that are needed when hay and grazing are limited and the total number of days the calves are separated from the dams. Expenses are lowest for 48-hour calf removal.

- ★ The proximity of houses to the pens or pastures where calves will be held —Consideration should be given to neighbors and family members. There will be considerable bawling by the calves and their dams, which subsides after 4 or 5 days. This can be very distracting to residents living nearby.

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