

When *to* Calve

A VETERINARIAN'S PERSPECTIVE

Story by

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Tradition, perception and peer pressure are powerful influences on our decision-making process. Breed and color of cattle, facilities, time of year to turn out bulls, branding time, weaning time, pregnancy-checking time, and selling time are heavily influenced by the way things always have been done. In some instances tradition and history have taught us well; in others a shift in thinking may be more profitable.

One area cow-calf producers may want to reconsider is their calving season. The decision of when to begin calving should include economic, management and herd-health considerations.

Economics

There are three major economic considerations when deciding the best time to calve: the change in value of weaned calves, the change in annual cow costs, and the change in cost of facilities.

Moving from an early-spring calving season to a late calving season will, on average, decrease the pounds of live calf for sale or pounds produced per exposed cow. The difference can be 100 pounds (lb.) or more and is entirely due to age. The weight per day of age (WDA) actually may be improved on later-born calves, reflecting a lowered maintenance cost associated with more favorable weather.

If calves are not marketed at weaning time, lowered weaning weight is not an important consideration. Additionally, weaning weight alone is a poor indicator of profitability. Backgrounding calves or finishing calves that are born later is not affected by calving date; but marketing dates will change, which may be affected by seasonal prices. Traditionally, feeder-calf and live-cattle markets are the lowest during the late spring and summer months.

Since feed costs account for 65%-70% of annual cow costs and harvested forages are most likely the most expensive component, an increase in the amount of harvested forages fed will increase costs. Calving during the season when harvested forages must be utilized to meet cows'



There are several things to consider when trying to decide if calving in spring, late spring or fall is best for your herd. (PHOTO BY SHAUNA ROSE HERMEL)

nutrient requirements results in higher feed costs.

A Nebraska study indicated summer-calving cows were fed more than 3,000 lb. less hay per cow per year than spring-calving cows, while protein supplement costs were similar between the two groups. For sustained profitability, it has been estimated that feed costs should be no more than 40% of the total cow-unit revenue. If total cow-unit revenue is \$500, total feed costs, including pasture, should be no more than \$200.

A greater investment in housing and

weather protection will be required if calving earlier in the year. Protecting newborn calves, postpartum cows and cows in late gestation from the weather will increase survivability and improve health of the calves. Annual facility cost per cow should be about \$10/year. Small huts or windbreaks that are only accessible to calves provide simple, low-cost protection for them. The downside of some of these structures is that calves may not use them, and if used they can be a source of contamination during disease outbreaks.

Management

Early calving allows for labor to be entirely focused on calving. Farmers and ranchers tend to be busy; having too many jobs to do at once is a way of life in agriculture. Being able to devote full attention to one large task can be rewarding. If labor is being hired, providing work at times of the year when other tasks are not as plentiful makes sense. Alternatively, attempting to monitor the calving process while crops are being planted can be an overwhelming task, particularly if the incidence of calving difficulty or health problems is great.

Having adequate early-growth pastures to accommodate the nutritional requirements of spring-calving cows is the other management consideration. A study in Finland indicated that dairy cows calving after April 29 had the shortest postpartum intervals. In addition, a negative energy balance (ketosis) was an important factor in increasing the time from parturition to conception.

In the same study, cows losing weight at a rate of 1%/week had a conception rate of only 16%, while cows on a diet adequate in energy had a conception rate of 90%. The reason for this effect is twofold: daylight hours are increasing dramatically (so temperatures are increasing) and nutrition.

The same rationale can be applied to late-spring-calving cows. The nutritional content of grass is increasing, which more correctly meets the cow's needs at this time, in contrast to early calving when essentially no grazing is taking place; the nutrition of the grass is extremely poor; and harvested forages and supplements must be fed to meet the cows' needs. This dramatically increases the feed costs to maintain and allow the cow to rebreed.

A study done on beef cows tended to corroborate the dairy study in that cows that calved the earliest in the season had the longest calving intervals. This again is likely due to improved nutrition, increasing environmental temperatures and daylight hours. A Nebraska study concluded that a 70-day breeding season for late-spring (April) calving was as productive as

earlier (March) calving. In addition, the later calving season should provide more comfort for both cow and producer and require less labor.

Health

Late-spring or fall calving offers the advantage of decreasing the contamination and buildup of pathogens that contribute to disease in the newborn calf. The decreased risk of bad weather in the late spring and fall allows producers to let cows roam to find comfortable surroundings for parturition. When cows are able to find their own calving grounds, it will likely be a long distance from other cows and calves. The chances of spreading pathogens from one pair to another is greatly diminished when space is not restricted.

Calves born in late spring or fall also are less likely to be stressed by weather. Wet, muddy and cold conditions increase calves' energy requirements and diminish the calf's ability to absorb colostrum immunoglobulins. The most important factors in reducing scours are to reduce exposure level, reduce contamination and increase immunity within the calf. Factors identified as being associated with an increased incidence of scours are heifers calving, wet conditions in the calving area, limited shelter and wintering cows and heifers on the same grounds where calving occurs.

As is readily apparent, these can directly or indirectly increase exposure, increase contamination and decrease immunity. In a North Dakota study, when heifers calved before the cows, the calves were 1.6 times more likely to develop scours. In addition, calves born before March 10 were 3.8 times more likely to develop scours than those after March 10. In the same study, the odds of a herd calf-scours problem was increased three-fold in herds not fed some alfalfa hay. The reason for this is not clear but may relate to adequate protein intake by cows in late gestation.

In a Swedish study, calves born between May and September had higher concentrations of gammaglobulins (the

proteins absorbed from the colostrum that provide the passive immunity for the calf in the early critical stage of life immunity) than calves born from October to April. It is unclear why this occurs, but it may relate to colder weather negatively influencing absorption.

It is important to remember that absorption of adequate amounts of gammaglobulins does not guarantee health, nor does lack of absorption automatically mean ill health. With inadequate absorption, however, the risk of mortality was doubled, while morbidity was six times more likely to occur in the newborn and three times more likely to occur prior to weaning.

Calves should be provided or have a minimum of 2 liters (L) of colostrum within the first 2 hours after birth and another 2 L within the first 12 hours to provide the best chance for adequate absorption of colostrum and disease protection. It is important to remember that it is not just quantity of colostrum that is important but the quality (amount of immunity) that is of real importance. Factors that affect colostrum quality are nutritional status and body condition score (BCS) of the cow.

Research indicates that cows in body condition score of 4 and less bore calves with lower immune levels than calves born to cows in adequate body condition. Work at K-State indicates that any abnormal event in and around birth will dramatically influence absorption of colostrum antibodies and immunity.

In a four-state study of 550 herds, the average scours incidence was 10.9%. The rate among cows was 9.5%, and the rate among heifers was 18.8%. Herds that purchased animals during the calving season had a higher rate of scours than those that did not purchase any animals.

Which calving season will be best for your bottom line will depend on your economic, management and herd-health scenario.

