



# Nutrition, Condition and Calving

*Evaluate your nutrition program by looking at calving records.*

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**T**ake time now to evaluate your nutrition program for spring-calving cows. A way to do that is to evaluate the reproductive performance of the cow herd because reproduction is so closely linked to body condition of the cows, and body condition is linked to the nutrition program.

The greatest loss of potential calves to wean is due to cows not getting pregnant during the breeding season. Cows that don't get pregnant during the breeding season, for spring-calving herds, are usually a result of cows being in poor body condition at calving as a result of the nutrient management program. There can be some losses due to abortion, but these losses are few, especially if you have worked with your veterinarian on a herd health and biosecurity program.

Once baby calves are on the ground and have nursed their dams in a timely manner so that they get colostrum, calf losses between calving

and weaning should be minimal. Calf losses at calving can be high in the Plains states for spring-calving herds due to weather, extremely cold conditions and snowstorms accompanied by high wind and not enough protection. If the percentage of calves weaned per female exposed is in the 80s, in most situations, the problem is nutrition related, and it should raise a red flag.

Calves and pregnant cows are worth a lot of money. Feed efficiency in the cow/calf enterprise may be best described in reproductive efficiency (pregnancy percentage), or the number of cows that have a 365-day calving interval, or the percentage of cows calving the first 21 days of the calving season. Efficiency needs to include not only output, which would be weaning weight, but also inputs, which would be cow costs.

## Analyzing reproductive performance

Some specialists might raise the red flag if percent weaned of exposed is in the low 90s. There are producers that are profitable when percent of calves weaned of cows exposed is less than 90%. If weaned of exposed is below 90% and your cost of production allows you to have a profitable cow/calf enterprise, then the red flag is not warranted. The key is to have a good handle on cow costs.

There are Standardized Performance Analysis (SPA) guidelines that outline how to calculate production measures for the cow herd. These guidelines bring standardization to performance calculations so that when comparisons are made annually, they are made using the same calculations. The SPA performance guidelines also guide a producer through how to handle pregnant cows that are purchased or sold and other situations that may arise in regard to pregnant and non-pregnant females. SPA guidelines can be found on the National Cattlemen's Beef Association website, [beefusa.org](http://beefusa.org).

There is an abbreviated way to dissect your cow herd by stage of production. Percentage calves weaned of females is the number of calves weaned based on the females that were exposed to the bulls to produce the calves that are being weaned. Mathematically it is the number of calves weaned (numerator) divided by the number of females exposed to produce that calf crop (denominator) and this number times 100 to get it to a percentage  $[(\# \text{ calves weaned} / \# \text{ cows exposed}) \times 100]$ .

The challenge sometimes is that the numbers needed to do the calculation are collected over a year apart. For females that wean a calf in October of 2015, the number of females exposed would be the number of females exposed to a bull during the breeding season in 2014.

This process can also be used to dissect percent weaned of exposed into a different phase of the production cycle to get at pregnancy percent, calving percent and weaning percent. We define percent pregnant as the number of pregnant females divided by the number of females exposed to the bulls, calving percent as the number of females that calve divided by the number of pregnant females and weaning percentage as the number of calves weaned divided by the number of live calves born and nursed their dams. Percent pregnant would give an indicator of the number of non-pregnant females. Calving percent would give an indicator of abortions and calves lost at calving due to dystocia. And, weaning percent would give an indicator of calf losses from calving to weaning.

As an example, in a 300-head cow herd, 255 cows weaned a calf. Records indicate 37 cows had no calving records, six calves were lost at calving and two calves were lost between calving and weaning. The 37 head were assumed to be non-pregnant because there was no record that they aborted.

Pregnancy percentage is 87.7%:  
 $[(300 - 37) / 300] \times 100 = (263 / 300) \times 100]$

Calving percentage is 97.7%:  
 $[(263 - 6) / 263] \times 100 = (257 / 263) \times 100]$  and

Weaning percentage is 99.2%:  
 $[(257 - 2) / 257] \times 100 = (255 / 263) \times 100]$ .

If you multiply pregnancy percent  $\times$  calving percent  $\times$  weaning percent, it should be close to 85%  $(.877 \times .977 \times .992 = .8499)$ .

You can further dissect cow reproductive performance by age group using the process described above. If a lot of young spring-calving females are not pregnant with their second calf, it is likely due to the lack of energy in their diets after calving.

## Calving distribution

Calving distribution, the number of cows calving in 21-day periods during the calving season, is affected by the nutrition program and, therefore, body condition at calving, especially for spring-calving cows. Cows that cycle early in the breeding season conceive early in the breeding season and calve early in the calving season. Twenty-one-day calving intervals can be easily calculated if you know when to start the first 21-day interval. SPA guidelines indicate there are two ways to determine when to start the first 21-day calving interval: start when the third mature cow (3 years old or older) has calved or start the first 21-day calving period 285 days after the start of the breeding season.

Rick Funston, beef reproductive physiologist, West Central Research & Extension Center, University of Nebraska, summarized data from steer calves that were born either the first, second or third 21-days of the calving season. Carcass weight and percentage of carcasses grading Choice was greater for steers born during the first or second 21-day calving periods. In addition, the percentage of the carcasses grading Average Choice or greater nearly doubles for calves born the first 21 days of the calving season compared to the second or third 21-day periods.

When heifer performance was compared by when the heifers were born during the calving season, more heifers born the first 21 days of the calving period were cycling before the start of the breeding season, pregnancy rate was higher and more of those heifers calved the first 21 days of the calving season.

Management strategies to calve 65% of the cows during the first 21-day period of the calving season compared to 40% of the herd calving the first 21 days of the calving season will add about 251 lb. to the average weaning weight. **HW**