



# Ridin' Herd

by Rick Rasby, beef specialist, University of Nebraska

## How did your nutrition program perform?

*Feed costs account for 60%-70% or more of annual cow costs. Any time feed inputs can be reduced without having a negative impact on cow and calf performance should result in a positive impact on the profit potential of the cow-calf enterprise. Body condition of the cows is linked to the nutrition program.*

*Data indicate the greatest loss of potential calves to wean is due to cows not getting pregnant during the breeding season. In spring-calving herds, cows that don't get pregnant during the breeding season are usually a result of cows being in poor body condition at calving as a result of nutrition management. Two production calculations that are affected by the nutrition program are (1) calf-crop percentage, sometimes referred to as percent calf crop weaned or percent weaned of cows exposed, and (2) calving distribution.*

### Calf-crop percentage

Calf-crop percentage may be the most important production calculation that a cow-calf producer can record. The reason for this statement is that it has both an input and an output component. Inputs include nutrition and management, management during the breeding season, management during the calving season, and management from calving to weaning. The output component is reproduction and reproduction affects total pounds of weight that is available to sell at weaning.

Percentage calves weaned of females exposed 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 a percentage [(No. calves weaned ÷ No. cows exposed) × 100].

Sometimes the challenge is that the numbers needed to do the calculation are collected more than a year apart, so good records are needed. For females that wean a calf in October 2015, the number of females exposed would be the number of females exposed to a bull during the breeding season in 2014.

As an example, 300 head of cows were exposed to the bull, and 255 cows weaned a calf. Calf-crop percent is 85% (255 calves weaned ÷ 300 cows exposed to the bull) × 100 = 85%). Records indicate 37 cows had no calving records, six calves were lost at calving, and two calves were lost between calving and weaning. We assumed the 37 head did not get

pregnant during the breeding season, because there was no record that they aborted.

Using this information, more information can be extracted from these records so that "weak links" in the production system can be identified. Pregnancy percentage is 87.7% [ $(300 - 37) \div 300 \times 100 = (263 \div 300) \times 100$ ], calving percentage is 97.7% [ $(263 - 6) \div 263 \times 100 = (257 \div 263) \times 100$ ], and weaning percent is 99.2% [ $(257 - 2) \div 257 \times 100 = (255 \div 263) \times 100$ ]. If you multiply pregnancy percent × calving percent × weaning percent, the

answer should be close to 85% ( $0.877 \times 0.977 \times 0.992 = 0.8499$ ).

Cow reproductive performance can be evaluated by age group using this process. Some of the challenge is how to account for pregnant females that enter and leave the herd during the production cycle.

There are Standardized Performance Analysis (SPA) guidelines that outline how to calculate production measures for the cow herd and how to account for pregnant females that enter and leave the herd. SPA guidelines can be found on the National Cattlemen's Beef Association (NCBA) website <http://bit.ly/1eYiPQ3>.

### Calving distribution

Calving distribution is the number of cows calving in 21-day periods during the calving season. It is affected by the nutrition



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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. You can easily calculate 21-day calving intervals 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:

- ▶ When the third mature cow (3 years old or older) has calved, or
- ▶ 285 days after the start of the breeding season.

Calving distribution can be affected easily by monitoring body condition/nutrition prior to calving in spring-calving beef herds. Cows that calve with an adequate body condition score (BCS = 5) breed earlier in the breeding season, calve earlier in the calving season, and calves are older and heavier at weaning compared to cows that breed later in the breeding season.

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Many times a minor change in nutrition management before calving has a substantial impact as to when cows will begin estrous cycles during the breeding season. As important, there are data where the researcher tracked male and female performance by whether they were born during the first,

second or third 21-day period of the calving season.

Male calves that were steered and data recorded from birth to harvest indicated that calves born during the first 21 days of the calving season were heavier at weaning, had more carcass weight at harvest, had higher marbling scores, and more had a USDA Marbling Score of Modest or greater compared to calves born during the second or third 21 days of the calving season.

Heifers born during the first 21 days of the

calving season were heavier at weaning, more were cycling at the beginning of their first breeding season, pregnancy rate was greater than those heifers born during the third 21-day period of the calving season, and more calved during the first 21-day period of their first calving season.

Another big data set indicates that female calves born during the first 21-day period of the calving season and kept as replacements remain in the herd as cows for more years compared to those heifers born in the second or third 21-day period of the calving season and retained as replacement females. For a commercial cow-calf enterprise, this means

potentially fewer replacements are needed, more calves are available to sell at weaning, and a higher proportion of the cow herd consists of mature cows that are the most productive part of the cow herd.

### Final thoughts

Nutrition is important in the cow-calf enterprise. Feed costs are the major component of annual cows costs, so feed costs must be monitored closely. To squeeze every penny of potential profit will take good management of the nutrition program. Calculate calf-crop percentage and calving distribution for your cow herd because

they are two really important calculations. Calving distribution is important to monitor as it affects some important economic components of a cow-calf enterprise. Calf-crop percentage and calving distribution are affected by body condition at calving and, therefore, the nutrition program.



EMAIL: [rzasby@unlnotes.unl.edu](mailto:rrasby@unlnotes.unl.edu)

**Editor's Note:** *Rick Rasby is a beef specialist with the University of Nebraska.*