



Ridin' Herd

► by **Rick Rasby**, Extension beef specialist, University of Nebraska

Increase revenue by managing body condition

We are all well aware that input costs for cattle enterprises have increased during the past few years. Profit equals revenue minus costs. Profit in the cow-calf enterprise can be increased by reducing annual cow costs, increasing revenue generated in the enterprise, or a combination of decreasing annual cow costs and increasing revenue generated. Sometimes you may need to invest money to generate more revenue. Are there management strategies that don't take a lot of dollar investment to generate more revenue?

Effect of percent calf crop on breakevens

The breakeven calculation for the cow-calf enterprise is a function of annual cow costs, weaning weight and percent calf crop weaned. If annual cow cost is \$600, weaning weight is 550 pounds (lb.) and percent calf crop is 85%, then breakeven is \$1.28 per lb. [$\$600 \div (550 \text{ lb.} \times 0.85)$].

For March-calving beef cows in Nebraska, body condition at calving greatly affects rebreeding performance of cows during the next breeding season. If body condition at calving, especially body condition of young females, is between 5 and 6, reproductive performance can be enhanced, which has a positive effect on percent calf crop weaned.

This can usually be accomplished by grazing management and "strategic" supplementation instead of "blanket" supplementation strategies. Percent calf crop weaned is the number of females that wean a calf divided by the number of females exposed to the bull to produce that calf crop.

As an example, if 100 females were exposed to the bull and 85 of those females weaned a calf, then percent calf crop weaned is 85%. If by monitoring body condition prior to calving more closely, percent calf crop weaned were increased from 85% to 90%, the resulting breakeven would change from \$1.28 per lb. to \$1.21 per lb. In this example two things have happened:

1. The percentage of cows exposed to the bull to produce a weaned calf increased; and
2. The pounds of calf weaned per cow exposed (calculated by multiplying weaning weight and percent calf crop weaned) increased from 467.5 lb. to 495 lb.

Calving distribution on breakeven

Consider if by doing a better job of monitoring body condition of a March-

calving cow herd, the percentage of cows calving in the first 21 days of the calving season increased from 40% to 65%, the percentage of cows calved by 42 days increased from 65% to 90%, the percentage of cows calved by Day 63 of the calving season changed from 85% to 100%, and no cows calved after Day 63 of the calving season compared to 15% of the cows calved after Day 63 in the old management system.

Under the new system, calves are older at weaning, and older calves weigh more. If you do the math, because there are more early-born calves, average weaning weight increased by 27 lb. Recalculating the breakeven, the breakeven decreases from \$1.21 per lb. to \$1.16 per lb. [$\$600 \div (577 \text{ lb.} \times 0.90)$].

The only item changed in this scenario is managing body condition at calving so that cows are cycling and are bred early in the breeding season; therefore, more cows calving early in the calving season and early-born calves are heavier at weaning compared to late-born calves.

Replacement rate on breakeven

Because body condition prior to calving was monitored more closely, the replacement rate was reduced from 18% to 10%. Fewer heifers are needed to be kept as replacements and can be sold to generate revenue, but also the need for higher-quality feeds is reduced. That, in turn, decreases feed costs.

Also, if there are fewer replacement heifers, there are fewer first-calf females in the herd weaning the lightest group of calves, and there are more females between 4 and 10 years of age weaning a calf. Four- to 10-year-old cows produce the heaviest group of calves at weaning. In theory, if there are more 4- to 10-year-old cows producing calves, weaning weights should increase.

The heifer replacement enterprises generate very little revenue. The revenue generated from this enterprise comes from heifers that don't become pregnant and pregnant heifers that are not needed. Because there is such a small percentage that doesn't become pregnant and because most of the ones that become pregnant are retained as replacements, not much revenue is generated to cover the development costs. The heifer replacement enterprise is basically "funded" by the cow-calf enterprise. It has been estimated that \$40 to \$60 of annual cow costs are costs associated with the heifer development enterprise. This is the cost per cow after subtracting out nonpregnant and pregnant heifers and non-calf revenue (cull cows).

Based on concepts developed in the previous two paragraphs, we can explore how reducing the number of replacement heifers affects breakeven price. If it is assumed that \$50 of cow costs are attributed to heifer development costs, and if the percentage of heifers needed is reduced by 45%, then annual cow costs should decrease by \$22.50 ($\50×0.45). Annual cow costs decrease to \$577.50 per cow.

There are 8% fewer young females weaning the lightest group of calves and 8% more "running" age cows weaning heavier calves, so average weaning weight should increase. Because it is only 8% of the cow herd, the increase in average weaning weight will be minimal.

Guidelines for beef cattle adjustments can be found in a manual written by the Beef Improvement Federation (BIF). The guidelines would suggest that heifers wean calves that are about 60 lb. lighter than calves of mature cows, because there are 8% more mature cows in the herd, it calculates to about another 5 lb. in average weaning weight. If annual cow costs are \$577.50, percent calf crop weaned is 90% and weaning weight is 582 lb., breakeven calculates at \$1.10 per lb.

Breakeven price in this scenario began at \$1.28 per lb. By monitoring body condition of March-calving cows, breakeven was reduced by \$0.18 per lb. Annual input costs were reduced and profit potential of the cow-calf enterprise increased. Is this realistic? You bet. There were no changes in genetics, time of calving or time of weaning.

Final thoughts

Managing body condition of the cow herd relates to managing the nutrition program. Reproductive performance of March-calving cows is affected by body condition at calving.

The ideas discussed above can affect the amount of revenue generated in the cow-calf enterprise. Breakeven was decreased without changing weaning time, calving time or the genetics program. It was changed by paying attention to timely management techniques.

In challenging times like the beef industry is currently experiencing, paying attention to detail and initiating management strategies in a timely manner is paramount. In today's economic environment, it's not only doing the management plan, but calculating how that management strategy affects either cow costs or revenue.

A handwritten signature in black ink that reads "Rick Rasby". The signature is fluid and cursive, with the first name "Rick" and last name "Rasby" clearly legible.

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Editor's Note: "Ridin' Herd" is a monthly column written by Rick Rasby, professor of animal science at the University of Nebraska. The column focuses on beef nutrition and its effects on performance and profitability.