



Ridin' Herd

► by Rick Rasby, beef specialist, University of Nebraska

Manage cow body condition to increase revenue

Profit is calculated by subtracting revenue from costs. It is a really simple equation, but a lot of management goes into both sides. 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. In some management scenarios, some money may need to be invested to generate more revenue.

How percent calf crop affects 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 costs are \$900, weaning weight is 550 pounds (lb.), and percent calf crop weaned is 85%, then breakeven is \$1.92 per lb. [$\$900 \div (550 \text{ lb.} \times 0.85)$].

For spring-calving beef cows, 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 during the next breeding season increases, which, in turn, has a positive effect on percent calf crop weaned.

The most difficult time for a beef female to get rebred is during the second breeding season. Getting spring cows to the ideal body condition before calving can usually be accomplished by grazing management and "strategic" supplementation.

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 more closely monitoring body condition prior to calving, percent calf crop weaned were increased from 85% to 90% and cow costs increased from \$900 annually to \$920, and weaning weight remained at 550 lb., the resulting breakeven changes from \$1.92 per lb. to \$1.85 per lb.

In this example three things have happened:

1. Percentage of cows exposed to the bull to produce a weaned calf increased;
2. Pounds of calf weaned per cow exposed (calculated by multiplying weaning weight and percent calf crop weaned)

- increased from 466 lb. to 495 lb.; and
3. Annual cow costs increased by \$20 per head.

Breakeven and calving distribution

Consider if by doing a better job of monitoring body condition of a spring-calving cow herd ...

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

Under the new system, calves are older at weaning, and older calves weigh more at the same weaning date compared to the later-born calves. The math says because there are more early-born calves, average weaning weight increased by 27 lb. Recalculating the breakeven, the breakeven decreases from \$1.92 per lb. to \$1.77 per lb. [$\$920 \div (577 \text{ lb.} \times 0.90)$].

Replacement rate on breakeven

If, because body condition prior to calving is monitored more closely, replacement rate were reduced from 16% to 12%, fewer heifers would need to be kept as replacements and more could be sold to generate revenue. The need for higher-quality feeds would be reduced. That, in turn, would decrease feed costs.

Reproductive performance of spring-calving cows is affected by body condition at calving.

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. The heaviest group of calves at weaning comes from 4- to 10-year-old cows. In theory, if there were more 4- to 10-year-old cows producing calves, weaning weights should increase.

Normally, the heifer-replacement enterprise generates very little revenue. The revenue generated

from this enterprise comes from heifers that don't become pregnant and pregnant heifers that are not retained. Because there is such a small percentage of heifers that don't become pregnant and because most of the ones that become pregnant are retained as replacements, not a lot of 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 \$80 of annual cow costs are costs associated with the heifer-development enterprise. These are the costs per cow after subtracting out nonpregnant and any cull pregnant heifers and non-calf revenue (cull cows).

Based on concepts developed in the previous two paragraphs, it can be explored how reducing the number of replacement heifers impacts breakeven price. Let's assume \$60 of cow costs are attributed to heifer-development costs. If the percentage of heifers needed is reduced by 45%, then annual cow costs should decrease by \$27 ($\60×0.45). Annual cow cost would decrease from \$920 to \$893 per cow. There would be 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 would be minimal.

Guidelines for beef cattle adjustments can be found in a manual written by the Beef Improvement Federation (BIF). The guidelines suggest that heifers wean calves that are about 60 lb. lighter than mature cows. Because there are 8% more mature cows in



the herd, it would calculate to about another 5 lb. in average weaning weight. If annual cow costs are \$893, percent calf crop weaned is 90% and weaning weight is 582 lb., breakeven calculates at \$1.70 per lb.

Breakeven price in this scenario began at \$1.92 per lb. By monitoring body condition of spring-calving cows, breakeven was reduced by 22¢ per lb. Annual costs were slightly increased, but profit potential of the cow-calf enterprise increased. Is this realistic? In the calculations above, annual cow costs increase

because of strategic supplementation, but 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 spring-calving cows is affected by body condition at calving. The ideas discussed above can impact the amount of revenue generated in the cow-calf enterprise. Breakeven was decreased by not changing weaning time, calving time or genetics; it was changed by paying attention to timely management techniques.

Even in the good times we are experiencing in the cow-calf sector, paying attention to detail and initiating management strategies in a timely manner is paramount. Even in today's economic environment, it's not only implementing the management plan, but calculating how that management strategy affects either cow costs or revenue.



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