

# HEALTH & HUSBANDRY

## Managing average herd age

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Good coaches design a plan to fit their team and work to ensure it is executed as designed. A

method for measuring success must be created to determine if the strategy is really the correct one for the team.

In sports, this is relatively easy, as the win-loss record is the ultimate judge of success. Still, there are several other statistics that may be used to give an early indicator of whether the plan is working.

The same is true for the cow-calf ranch: The first step is to identify goals in a specific area, implement the plan and monitor for success.

One area to proactively manage is the average age of cows in the breeding herd. The average herd age results from several factors, including reproductive efficiency, culling rate, adult death loss and the replacement rate. Cows are typically most productive and wean the heaviest calves between 4 and 8 years of age. Keeping most of the cows (and the average herd age) in this sweet spot can lead to an efficient, productive herd, but it requires work on managing both replacement and culling rates.

### Culling rates

Cull cows, or cows removed from the herd and sold prior to the next breeding season, contribute significantly to the overall income and profitability of the ranch. The sale of the calf crop provides most of the gross income (80%-85%), with cull cow sales making up the balance.

The price and gross income received for culls is based on the type of culls sold, timing and method of sale. The purpose of this article is to discuss the number of

culls, but spending time managing the value of culls is also an important endeavor.

A national survey indicated the overall average percent of cows culled annually was 10.2%, with larger herds (more than 200 head) averaging 13.8% and medium herds (50-199 head) culling 9.1%. The primary reasons for culling included open cows (40.5%), age or bad teeth (35.7%), economics (e.g., herd reduction, 5.9%), and cows that were physically unsound (5%).

Herds also had an average death loss of 1.3% of adult breeding cattle from all causes [USDA Animal and Plant Health Inspection Service (APHIS) National Animal Health Monitoring System (NAHMS)

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*Beef 2017 Cow-calf Health and Management Practices*].

Adding the average cull rate and death loss would result in a necessary replacement rate of 11.5% to maintain a static herd size.

These numbers provide a benchmark to evaluate culling rates on your ranch. For simple math, assume we have a 100-head cow-calf herd. At the national average, we will cull 10 head per year: four for being open, four for being older, and two for other reasons. This means the pregnancy rate was 96% or if it was lower, the culling rate might have to increase or we can cull fewer of the older cows.

If pregnancy rate is lower, the manager has fewer choices on which cows to cull, and the average herd age becomes older over time.



PHOTO BY LINDSEY SAWIN

As culling rate goes up, replacement rate would have to increase to maintain a static herd size. With increasing replacement rates, the average herd age will decrease.

### First-calf heifers

Ideally, most culls would be near the end of their productive lifespan, but this is not always the case. First-calf heifers are one of the hardest groups to breed back for the next calf. At the time of calving, these heifers may be at 80%-85% of their mature body weight. Therefore, they are still growing and trying to raise a calf. These factors often result in some heifers failing to conceive their next calf.

These first-calf heifers may produce a dilemma at preg-check: Should you keep or cull?

One perspective is to consider keeping her for another year because so much has been invested to get the heifer to this point. The heifer may have some of the best genetics in the herd due to progressive selection. If the heifer breeds back next year, she has many productive years left.

These are all valid points. However, they should be weighed against the cost of the heifer taking a year off between pregnancies.

One analogy that fits the situation is considering loaning the first-calf heifer rent money

on the assumption that it will be paid back from future calf profits. Using numbers from a Kansas State University survey (*Differences between High-, Medium-, and Low-profit Cow-calf Producers: 2016-2020*; Pendell and Herbel), let us assume this scenario occurred in the highest-profit operations. During this period the net return of the highest-profit operations was \$215 over variable costs, but the annual cost to keep a cow was \$844 in these same operations.

This means if loaning the heifer money for one free year on the ranch, the profit from the next four calves will be necessary to repay this loan (without considering interest).

Another option would include moving the heifer from a spring to a fall herd or vice versa if the ranch has both breeding herds established. This approach potentially has merit. Similar math applies, but we only loaned the heifer for six months, meaning it could take two calves to repay the loan. In most situations loaning heifers (or cows) money is not a good idea.

### Replacement rates

Determining the optimal replacement rate or the number of heifers to save can be challenging. Even assuming the goal is to maintain a static herd size, several

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factors influence the number of heifers to keep.

How will success of the replacement program be judged: pregnant as a replacement? Or pregnant to calve in the first 21 days of the calving season? These goals will influence the number of heifers needed to keep each year. This is a great area to do some planning and track how many need to be saved to have the ideal replacement rate for your herd.

Market prices may also influence the number of heifers to keep in the herd. One strategy is to use a dollar cost averaging similar to when investing in stocks monthly. This method revolves around spending the same amount of capital each year (estimated as if buying the heifers at weaning).

Therefore, in years of high feeder-calf prices, fewer replacements would be kept. When prices are lower, more would be kept. The average cost of adding replacements to the herd will work

out to be about the same, but the advantage is more feeder heifers are sold when prices are high and fewer when prices are low.

## Conclusions

Knowing the average adult breeding cow age is only part of the battle. Set a goal for the ideal average for your operation, then manage culling and replacement rates to stay within this window. Changes in feeding resources and market conditions mean this plan should be nimble and able to flex in specific situations. Keeping records for your ranch can help achieve your goals. Cowboy or coach, that's what it's all about. ■

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Editor's note: "Health & Husbandry" is a regular *Angus Beef Bulletin* column devoted to the care and well-being of the herd. Author Brad White is on faculty at Kansas State University College of Veterinary Medicine and serves as director of the Beef Cattle Institute. To learn more on this and other beef herd health topics, tune in to the weekly Beef Cattle Institute *Cattle Chat* podcast available on iTunes, GooglePlay or directly from [www.KSUBCI.org](http://www.KSUBCI.org).