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## BeefTalk: Long-term Cow-culling Rate, Replacement Rate and Cow Age



**Knowing how your herd compares with industry numbers is important.**

By Kris Ringwall, Beef Specialist

NDSU Extension Service

Cow culling and heifer replacement are front and center in the fall as producers evaluate older cattle, structurally challenged cattle and cows that fail to reproduce.

Moving cows to the market pen is fairly straightforward. Herd growth generally has been subtle, as gradual increases in herd size through time are evident. Most producers know cows are not easy to replace and ponder considerably before writing a sale ticket.

So what are adequate culling levels? Two numbers impact the base cow herd inventory: culling rate and replacement rate. These numbers change as managers expand and reduce cattle numbers, and knowing how your herd compares with industry numbers is important.

The North Dakota Beef Cattle Improvement Association (NDBCIA) keeps track of many traits for producers through the CHAPS program. Recently, Jennifer Ramsay co-authored an article in the North Dakota Beef Report titled "Cow Herd Appraisal Performance Software (CHAPS): 15 Years of Beef Production Benchmarks." Ramsay is a member of the CHAPS team, and the NDBCIA has collaborated with the Dickinson Research Extension Center for many years.

Ramsay presented historical CHAPS benchmarks from 2003 to 2017. The CHAPS team at the NDSU Dickinson Research Extension Center calculates yearly averages of herd data from producers. The CHAPS team then calculates five-year rolling average benchmarks, which Ramsay found to be relatively stable through time.

Images

	Typical year	This year	Next year
Culling rate	14%	20%	10%
Replacement rate	18%	10%	20%
Net effect: Zero			

Culling and replacement rates impact the cow herd inventory

columns

**Spotlight on Economics: Spotlight on Economics: Waters of the United States** (2017-10-10) Now may be the time for the legislative branch to clarify the scope of the Clean Water Act. [FULL STORY](#)

**BeefTalk: BeefTalk: Long-term Cow-culling Rate, Replacement Rate and Cow Age** (2017-10-19) Knowing how your herd compares with industry numbers is important. [FULL STORY](#)

**Prairie Fare: Prairie Fare: Prairie Fare Celebrates 20 Years** (2017-10-19) The column has covered topics from apples to zucchini and everything in between. [FULL STORY](#)

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Today, let's focus on replacement rate (the number of bred replacement heifers or purchased cows that are kept) and culling rate (the number of cows that are removed from the herd). In recent years, the culling rate has not exceeded the replacement rate, which shows producer optimism in good and tough times.

The five-year replacement benchmarks averaged 16.9, 15.8 and 15.1 percent from 2003 to 2005; 14.8, 14.7, 15, 14.9 and 15.2 percent from 2006 to 2010; and 15.3, 15.6, 15.3, 15.6 and 15.2 percent from 2011 to 2015. More recently, the replacement rate has been 14.9 and 14.7 percent for the 2016 and 2017 benchmarks.

The five-year culling benchmarks averaged 14.4, 14.7 and 13.8 percent from 2003 to 2005; 14, 14.7, 14.6, 14.2 and 13.9 percent from 2006 to 2010; and 13.7, 13.9, 13.5, 13.6 and 13.2 percent from 2011 to 2015. More recently, the replacement rate has been 13.2 and 13.2 percent for the 2016 and 2017 benchmarks.

Herds are resilient, changing as outside forces dictate. This summer has been very dry, so how do producers respond to drought once all the steers have been sold or moved? The answer is in the ratio of replacement heifers and cull-market cows. Do we need to keep the replacement heifers? Do we need to sell cull cows? In dry years, such as this year, producers minimize replacement rates.

Producers already have minimized the replacement rate and have been replacing cows at minimal rates for the last several years. What does this do to cow age? Ramsay's report shows the five-year cow age benchmarks averaged 5.4, 5.5 and 5.6 years from 2003 to 2005; 5.6, 5.7, 5.7, 5.7 and 5.7 years from 2006 to 2010; and 5.7, 5.6, 5.6, 5.6 and 5.6 years from 2011 to 2015. More recently, cow age has averaged 5.6 and 5.6 years for the 2016 and 2017 benchmarks.

The cows may be getting slightly older, but the cow herd seems to be fairly stable. A stable herd size, with some growth, would reflect replacement rates of just a little more than 15 percent and culling rates just a little less than 14 percent. In previous reviews of the benchmark data, a 17 percent culling rate has been the high versus the current 13.2 percent.

Dry weather is harder on old cows as well as young cows. If dryness continues, producers who have been keeping minimal replacement heifers will have to sell some old cows and increase the replacement rate to maintain their cow herd. Logically, given this year's lack of feed, culling rates should increase and those older cows will be sold.

If one increases the culling rate, keeping replacement heifers becomes critical because the industry struggles with simultaneous reduction in young and old cows. For example, a

response to this year's drought could increase the culling rate to 20 percent and cut the replacement rate to 10 percent. Doing so will drop herd size by approximately 10 percent and reduce feed needs.

The goal next year would be to decrease the culling rate to 10 percent and increase the replacement rate to 20 percent for a return to a desired 100-head cow herd. All in all, that's not bad for having saved 10 percent in cow costs and maintained the long-term cow herd size.

Knowing production benchmarks is good for cow-calf producers. Although changes are slow, the opportunity to make change and guide the operation in a direction that helps anchor the beef herd on the profit side of the equation is good. The point: Know where the production unit is.

May you find all your ear tags.

For more information, contact your local NDSU Extension Service agent (<https://www.ag.ndsu.edu/extension/directory>) or Ringwall at the Dickinson Research Extension Center, 1041 State Ave., Dickinson, ND 58601; 701-456-1103; or [kris.ringwall@ndsu.edu](mailto:kris.ringwall@ndsu.edu).

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NDSU Agriculture Communication - Oct. 19, 2017

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Attachments



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