

Determining replacement rates for your herd: How many to keep and cull?

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Fall brings with it (hopefully) cooler temperatures and decision making time for many beef producers. Fall brings with it a time to evaluate the cow herd, and each cow's productivity and a time to mark those cows to replace and those replacement heifers to include in the keeping pen. The decision of what to keep and what to cull has been made even more complicated with the current cattle market. Record high prices make producers think long and hard before selling a cow when even a poor calf that she might raise could bring in good profits. Still it is important to have a plan to evaluate the replacement rate for your herd, which may vary from year to year.

For spring herds, weaning is a good time to evaluate your cow herd for pregnancy status, mouth scores, and productivity. While pregnancy status is often the number one factor in determining if a cow needs to be replaced, it is also important to keep close tabs on those cows who may be the biggest, fattest cows in your herd, but wean the lightest scrawniest calf year in and year out. For fall calving herds, calving season is a good time to evaluate udders, body condition, and disposition. No one particularly enjoys dealing with disposition issues or having to nurse a calf because a cow's teats are too large during calving season, but those memories may fade quickly when weaning time rolls around.

One factor that greatly influences herd productivity is cow age. Typically as a cow advances in age past her prime, that cow's productivity will be eventually diminished. This can lead to decreased profits if a cow is retained too long. A recent poll from BEEF magazine asked “What is the average age of the beef cows in your herd?”. As I write this article, the poll is ongoing, but shows that the majority of producers have an average age of 6-8 years old, followed by those with herds age 3-5 years old, and the fewest with an average age of 9+ years in the herd.

Culling rates and replacement rates are greatly influenced by a producer's choice to expand or contract herd size, the decision to keep herd size the same. In recent years the nation's cowherd as well as Mississippi's has been declining, with the nation's cow herd at a 60 year low in terms of cattle numbers. Typically culling rate for most herds is approximately 10-15%, with a replacement rate of 10-20%. This replacement rate is a direct result of a producer's decision on whether or not to expand the herd. This becomes an even tougher decision with current prices making the waters even muddier. For example, the Summary of Mississippi Cattle Auctions for the week of September 5, shows 500 lb heifers selling at an average of \$1,062.50 per head, and cull cows selling for close to \$1,500 per head. The recent Southern Producers Replacement Heifer Sale saw record bred heifer prices at an average of \$2,774/head.

The replacement heifer is the foundation of a productive cow herd, and her selection and development can greatly impact the economics of an operation through genetics, future

performance, and longevity. It has been shown consistently that a cow has paid for herself by 6 years of age, so the longer she stays in the herd the more profitable she becomes for the producer. Therefore it is so important that replacement heifers are selected and developed with longevity in mind. It is important to first select heifers that offer this opportunity, and then to properly develop and manage them throughout their lifetime to ensure that they will be productive cows for many years. Too often the largest group of open cows culled from a herd are first calf heifers that did not rebreed for their second calf. Proper management and nutrition can go a long way toward ensuring reproductive success.

The decision to purchase vs. raise replacement heifers can have a big impact on replacement rates, particularly in current times with record high prices and a shortage of females available. Several factors that impact this decision include economics, available resources, experience, genetic improvement, and convenience. The financial concerns of developing replacement heifers are related to diverting cash flow and resources. If immediate revenue is required to maintain normal production capacity, consider selling weaned heifers and purchasing bred replacements later. Also consider purchasing replacements if higher returns can be generated by an alternative use for the proceeds from market cow and feeder calf sales. Farm or ranch resources also direct this decision. If forage or feed supplies are already maximized or overextended by the mature cow herd, purchasing replacement heifers would be an obvious choice.

Opportunity costs are often overlooked when making management decisions. The convenience of having someone else raise replacements is a valid consideration, especially when the cattle operation is not the primary source of income, or operator time or labor time is limiting. Custom heifer development centers have become a support-business of the cow-calf sector. Consigning heifers to a custom developer is the best way to retain herd genetics while not diverting money and resources from the cow herd to raise heifers. More information on heifer development can be found <http://msucares.com/pubs/publications/p2488.pdf>.

A pivotal decision in determining replacement and culling rates is the operation's goals for the future. Do you plan to keep herd numbers steady? Do you plan to grow your herd? Do you plan to downsize? All of these are questions that must be asked, and will impact your culling and replacement rates. Economics also play a big role in this decision. Record cattle markets have led many producers to rush to take advantage of the feeder market prices, by choosing to sell their entire calf crop at weaning or shortly afterward and not retaining any females for replacements. Regardless of the final number chosen for culling and replacement rates, the most important point is that this number is based on your goals. Having a plan in place is vital.

For more information about beef cattle production, contact an office of the Mississippi State University Extension Service, and visit msucares.com/livestock/beef.

References:

Mississippi Weekly Livestock Summary. <http://www.ams.usda.gov/>. Accessed September 10, 2014

Replacement Beef Heifer Development. 2008. MSU Extension Service Publication 2488. <http://msucares.com/pubs/publications/p2488.pdf>