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Beef Cow Longevity

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The focus of cow longevity discussions is often on dairy cattle. However, to a beef cow-calf operator, cow longevity is a major factor affecting costs and thereby profitability. Two definitions for longevity are “the length or duration of life” and “length of service, tenure, etc.; seniority”. Considering that cows must not just survive many years but also must be productive in later years to be exempt from culling, the latter definition is most relevant view of cow longevity to cattle operations.

Productive longevity is the age at which a cow dies or is culled from the herd due to her presumed inability to continue as a productive brood cow and dam. Unlike cows that die, cows that are culled have a salvage value. This salvage value increases with improved cow condition and health. Therefore, it is important to recognize signs that productive longevity is nearing an end and to market cows in a timely manner before salvage losses occur. The old saying, “just one more calf” illustrates that some producers push their luck when trying to get as many productive years out of a beef female as possible. Beef Quality Assurance guidelines promote timely marketing of market cows due to their role as an important food source and also from an animal welfare standpoint.

Greater longevity has its benefits. It allows producers to be retain fewer replacement heifers and lowers overall replacement costs. When fewer replacement heifers are needed, the operation can be more selective when deciding which heifers to keep. Herds containing a larger proportion of mature cows usually have a higher percentage of calf crop weaned, wean heavier calves, and have lower total energy requirements. Cow maintenance costs are also spread out over more calves. Increased longevity can both reduce production costs and increase annual pounds of marketable calf per cow. For purebred cattle breeders, increased longevity allows greater selection intensity for other important traits. Disadvantages of greater longevity are that it increases generation interval and thus potentially reduces genetic gain per year by less aggressively replacing “old” genetics with improved “new” genetics.

It is not uncommon for breeding cattle to live well into their teens. Some producers even brag about having cows in their herds that are “old enough to vote”. However, despite some cows reaching this advanced age and remaining in production, many more cows typically leave the herd at much younger ages. One large Florida ranch dataset showed consistent rebreeding performance in its cows through about 8 years of age. Reproductive performance consistently began to decline at 10 years of age and dropped even more steeply at 12 years of age. Some research suggests that maximum longevity for optimum economic returns is within the range of 8 to 11 years for commercial cow-calf operations.

Longevity is a convenience trait that is highly variable. Yet it only takes small changes in longevity to greatly impact herd profitability. Many traits influence cow longevity including age at puberty, direct and maternal calving ease, milk production, mature size, ability to store body fat (fleshing ability), ability to endure weather extremes, udder soundness, skeletal soundness, disposition, freedom from genetic defects, and many more characteristics. Physical soundness limits the productive life of a cow as she ages. For example, tooth wear and loss occurs over time and affects a cow's ability to harvest forage, consume feed, and maintain body condition. Fertility, maternal ability, health, and survival of a cow and her calves are the primary determinants of longevity.

Cows are culled from herds for many reasons. Age or bad teeth (57.8% of operations) was the most commonly declared reason for marketing cows followed by pregnancy status (25.6% of operations) as reported in the National Animal Health Monitoring System's Beef '97 study. The percentages of operations culling cows for other reasons were 14.1% for economic reasons such as drought, herd reduction, or market conditions; 11.7% for poor producing calves; 8.2% for other reproductive problems; 6.4% for physical soundness; 6.4% for temperament; 5.8% for udder problems; 4.1% for bad eyes; 1.0% for respiratory problems; and 0.3% for digestive problems. Larger operations, in terms of herd size, were less likely to market cows for economic reasons than smaller operations. Calving difficulty, advanced age at first calving, and producing less than one calf per year increase the likelihood of culling.

Valuable data in evaluating cow longevity include records of how long each cow stays in a herd and the reason why each cow leaves a herd. Whole herd reporting (including herd inventory reporting) and reporting reproductive data is important to breed associations tracking longevity for use in genetic predictions. Genetic predictors for longevity include EPDs for stayability. Stayability indicates differences in the percentage of daughters remaining in the herd at 6 years of age. Six years is used because a study showed that cows typically did not repay their development cost until their fifth calf (born to 6-year old cows if calving annually starting at 2 years of age). Genetic lines that produce a greater percentage of females producing to 6 years of age are more likely to also be productive at much older ages and produce more lifetime revenue. Relatively effective selection for stayability is possible due to moderate heritability of this trait.

Breed differences exist in longevity, so replacement rates differ by breed. In one study, cows were culled for different reasons, and breed influenced culling reason. Another study showed that crossbreeding to Brahman increases longevity of cows for beef producers in the South more so than crossbreeding to Angus, Hereford, or dairy breeds. Within breeds, a key factor in longevity is matching cow mature size and milking level to the production environment. When production resources cannot keep up with the demands of a particular cow size or milking level, rate of culling is likely to increase.

Longevity of crossbred cows is generally greater than that of purebred cows. Crossbred cows typically live longer and are more productive than their purebred counterparts. Maternal heterosis (hybrid vigor) increases longevity by more than one year. Because of the low heritability of cow longevity and lack of indicators of longevity expressed early in

life, implementing crossbreeding systems to take advantage of maternal heterosis becomes even more important to improving longevity of the breeding herd.

To improve cow longevity, keep good reproductive and herd removal records, take advantage of the maternal heterosis of crossbred cows, and use stayability EPDs when available. Decide on the best balance of retaining females in the herd to advanced ages and culling earlier to increase rate of genetic improvement and protect cow salvage value. For more information about beef cattle production, contact an office of the Mississippi State University Extension Service.