

## Sustained Cow Fertility

Beef cows that have a greater chance of breeding each year improve herd profitability several ways. In addition to reducing the cost of developing replacement heifers, better cow fertility results in more, heavier weanling calves to market. Additionally, older cows tend to have less calving difficulty. Cow herds that are genetically more fertile will have more older cows.

Even though cow fertility has a low heritability it has a large impact on profitability. Research has shown that small genetic improvement in cow herd fertility often has the greatest impact among all the traits under selection. When included in a selection index, cow fertility always has the most influence on index values.

The AHA's new Sustained Cow Fertility EPD (SCF) is a prediction of a cow's ability to continue to calve from three years of age through twelve years of age, given she calved as a two-year-old. The EPD is expressed as a deviation in the proportion of the ten-possible calving's to twelve years old expressed as a probability. For example, the daughters of a bull with a 30 EPD would have the genetic potential to have one more calf by age twelve than the daughters from a bull with a 20 EPD. In other words, the daughters from the 30 EPD bull would have a 10% greater probability of having one more calf than the bull with a 20 EPD. This is equivalent to saying that the daughters are 10% more likely to remain in the herd to age 12.

In producing the SCF EPD, calving observations from cows at age three and older are evaluated. Observations are recorded as 1 (successfully calved at a given age) or 0 (failed to calve), or can be recorded as unknown. Unknown observations occur in several situations. For example, observations from ET flush cows are not used in the year they are flushed and are considered unknown. When an observation is designated as unknown the cow (or her sire) are not penalized. Other types of observations that are designated as unknown include cows sold or died before being given the chance to calve (or be open). Of course, diligently recording and reporting culling reasons is essential. Understanding and using the AHA culling codes makes the SCF EPD one of the best tools for improved fertility.

For the SCF analysis cows are grouped into contemporary groups by herd within year and season of calving. This permits the analysis to separate the effects common to a set of cows from the genetic potential of each individual. In addition to the contemporary group effect and genetic effect of the cow on calving, a permanent environmental effect is accounted for. The environment a cow was raised in and is bred in can have a permanent impact on her ability to breed.