

The most common method used to measure a bull's reproductive ability is with a Breeding Soundness Evaluation, or BSE. This evaluation is performed by a veterinarian, and covers three different areas of a bull that may impact his fertility and reproductive ability. This week we will cover each of the areas of a BSE, explain how they affect a bull's fertility, and explain why bulls should have a BSE performed prior to breeding season each year.

The first step of a BSE is to perform a physical exam on the bull. This was covered in part one of our Bull Fertility series, and should include a thorough examination of the bull's eyes, teeth, feet, legs, and overall structural soundness. In addition to this, the reproductive tract should be carefully examined and confirmed to be free from any injury and/or defects. This includes areas of the reproductive tract such as the scrotum, testicles, penis, and prepuce. Even if the bull has good quality semen, an injury to any of these areas may result in infertility. Further, it is possible for the bull to have had an injury that appears to have healed, but that caused nerve damage. This can be just as detrimental to his fertility as a fresh injury is. It is also important that the bull's testicles do not get too hot or cold, as this can affect the quality of the sperm. The last part of the physical exam portion of the BSE was covered in last week's article- part two of Bull Fertility. The bull should not be over- or under-conditioned, as this too, can negatively impact his fertility and reproductive ability.

The second area evaluated in a BSE is the scrotal measurement of the bull. In order to pass a BSE a bull should meet the minimum measurement requirement based on his age. Please see Table 1 below for these requirements.

Minimum scrotal circumference requirements based on age					
Age in months	≤ 15	> 15 ≤ 18	> 18 ≤ 21	> 21 ≤ 24	≥ 24
Scrotal circumference (cm)	30	31	32	33	34

Table 1. (Daly et al. 2008)

Scrotal size is important, as it is directly correlated with the bull's daily production of high quality sperm. However, special care should be taken to ensure that a large or small scrotal measurement is not a result of a defect or injury with the bull, such as cryptorchidism, or swelling. Thus, testicles should be carefully palpated prior to measuring to confirm that they feel and look normal.

The final area of interest in a BSE is the bull's semen quality. After obtaining a sample of semen from the bull, it is evaluated in four areas: color, concentration, motility, and morphology. The ideal color should be milky white, though some samples may have a yellow tint. A collection with a pink or brown tint may be cause of concern, as it may indicate blood or fecal contamination. Concentration of the collection should be opaque, as the amount of opaqueness in a sample is reflective of the number of sperm that is present. Motility measures the amount of spermatozoa that have progressive/head first movement. In order to pass a BSE, a bull must have at least 30% motile sperm in his collection. Lastly, morphology

measures the percent of normal sperm produced. That is, it measures the percent of sperm without defect. A bull must have at least 70% morphology to pass a BSE. Though color and concentration are not taken into consideration when determining if a bull will pass or fail a BSE, they *can* indicate areas of concern for the producer.

It is recommended that a BSE be performed on your bull(s) 4-6 weeks prior to the start of breeding season. This will allow ample time to have the bull retested if he does not pass the first BSE, and also allows time to find a replacement if necessary. Although it is a great tool to use when determining if your bull is fertile, a BSE should not be the only method used to determine the reproductive ability of your bull. Next week we will present the final factor that affects the reproductive ability of your bull. If you have any questions about BSE, or would like to have the bull(s) in your herd evaluated for breeding soundness, please contact us. Please visit the link below to access the full article that we referenced this week: <https://www.sdstate.edu/vs/extension/beef/upload/ExEx2066-Bull-Fertility.pdf>

Prices for feeder steers medium and large 1 sold through the Oklahoma National Stockyards on Tuesday, February 24, 2015 are as follows: 464lb- \$288.24, 576lb- \$258.10, 669lb- \$226.82, and 774lb- \$199.75. The price for March 2015 750lb feeder steers on the Chicago Mercantile Exchange was \$195.90 on closing Tuesday, February 24, 2015.

Thanks,
Dr. Jesse Richardson, DVM

Henderson County Veterinary Hospital
903-675-5613
hcvethosp@me.com
hcvethospital.com