

Bull Breeding Soundness Evaluation

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Are your bulls fit for service?

With the spring breeding season closing in, it is a good time to review bull breeding evaluation. Failure to properly evaluate bulls prior to and during the breeding season can result in huge economic losses, yet it is estimated that only about 10 % of beef bulls in the nation undergo a bull breeding soundness evaluations. A bull's fertility can be considered fertile, sub-fertile, or sterile. Sub-fertile bulls may eventually get cows pregnant, but they will take much longer than fertile bulls to settle a group of cows. The result is that sub-fertile bulls produce fewer calves and a poorly matched group of calves that are born later, and are therefore younger and lighter at weaning. In either situation, sub-fertile bulls produce fewer pounds of beef per exposed cow, affecting the economic profitability of a cow-calf operation.

A bull breeding soundness evaluation (BSE) is a uniform method of assessing a bull's likelihood of establishing pregnancy in an appropriate number of open, healthy, cycling cows or heifers in a defined breeding season. A bull BSE includes the following four components:

1. Physical exam

Evaluates the physical characteristics of a bull necessary for mobility in the pasture, structural soundness, overall internal and external reproductive tract development.

2. Scrotal circumference

Evaluates testicular size and health, as well as estimating the bull's sperm producing capacity. Bulls must meet minimum scrotal circumference measurements based on age in order to pass a BSE. The measurements are: ≤ 15 months 30 cm, $>15-18$ months 31 cm, $>18-21$ months 32 cm, $>21-24$ months 33cm, > 24 months 34cm.

3. Sperm motility

Ensures that the bull is producing sufficient numbers of live sperm. Bulls must have at least 30% progressively motile spermatozoa to pass a BSE.

4. Sperm morphology

Ensures that the bull is producing sperm that are properly shaped and capable of fertilization. Bulls must produce at least 70% normal sperm out of a count of 100 to pass a BSE.

The recommended minimum requirements for scrotal circumference, sperm motility, and sperm morphology are outlined by the Society for Theriogenology (<http://www.therio.org/>). Additional factors influencing the number of cows a bull can breed in a season include pasture size and terrain, physical soundness, age of the bull, libido, number of bulls in the group, etc.

Based on the results of the BSE a bull is then assigned to one of three classifications:

1. Satisfactory potential breeder (fertile)

This classification indicates that the bull:

- passed a physical exam
- met the minimum requirements for scrotal circumference
- has at least 30% sperm motility
- produces at least 70% normal sperm

2. Unsatisfactory potential breeder (sub-fertile or sterile)

- The bull did not pass at least one of the four components of the BSE. This does not mean this bull cannot impregnate cows. It just means that this bull will not efficiently breed cows, and it is not recommended to use these bulls.

3. Deferred

- The bull did not pass at least one of the four components of the BSE due to a condition that may resolve with time or treatment. A “deferred” bull should be rechecked at a later date recommended by the examining veterinarian.

A BSE does not evaluate a bull’s libido, nor does it ensure that a bull will remain a satisfactory potential breeder the entire breeding season. An injury to a bull’s hooves, legs, or reproductive tract may render a bull incapable of breeding your cows. Therefore, it is still extremely important to observe your bulls regularly to ensure they are doing their job. A BSE also does not guarantee that bulls are free of infectious diseases, so consult with your veterinarian on what diagnostic tests may or may not be appropriate for your bull(s). The extra pounds of beef per exposed cow will more than pay for the BSE, so contact your veterinarian for a bull BSE prior to the next breeding season.

If you have any questions, please feel free to contact me at: lstrick5@utk.edu, or 865 974 3538.