

Breeding Soundness Evaluation

A Breeding Soundness Evaluation (BSE) predicts the potential fertility of a bull. It is based on an examination that includes tests for physical soundness, testicular size, semen quality, and in some cases, libido/mating ability.

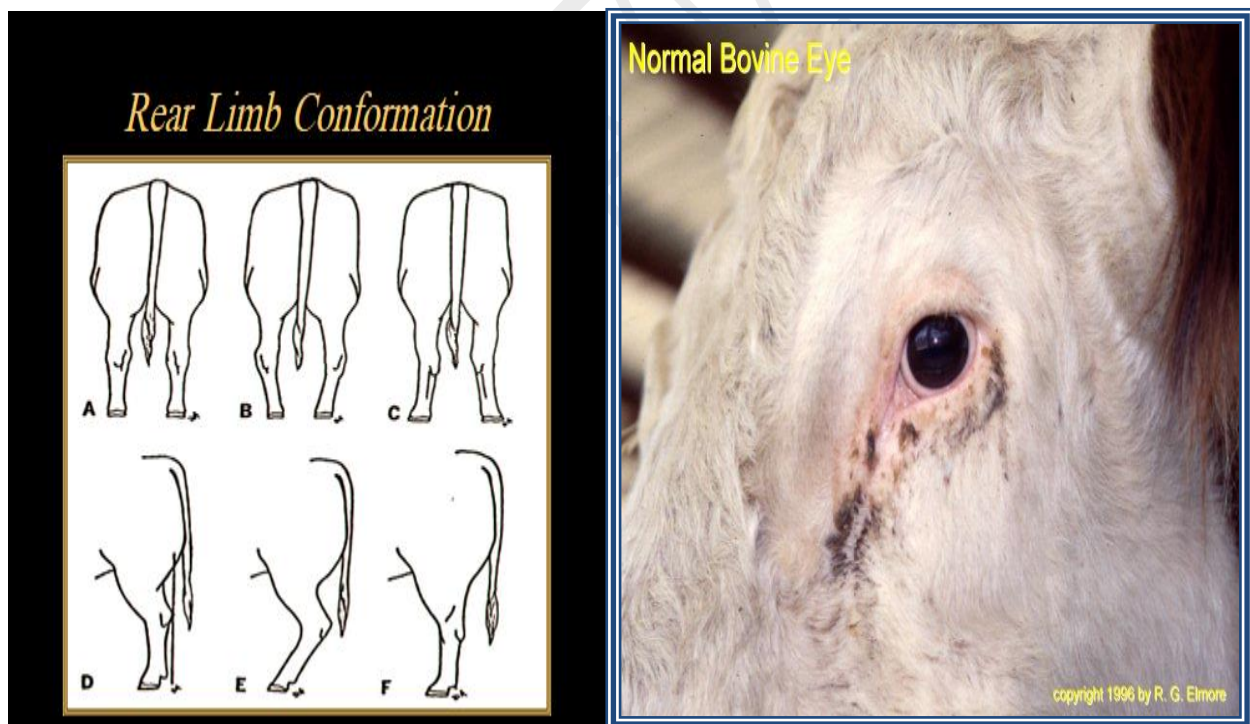
A routine BSE generally includes the following:

- 1- Physical examination.
- 2- External and Internal Genital examination.
- 3- Semen examination.

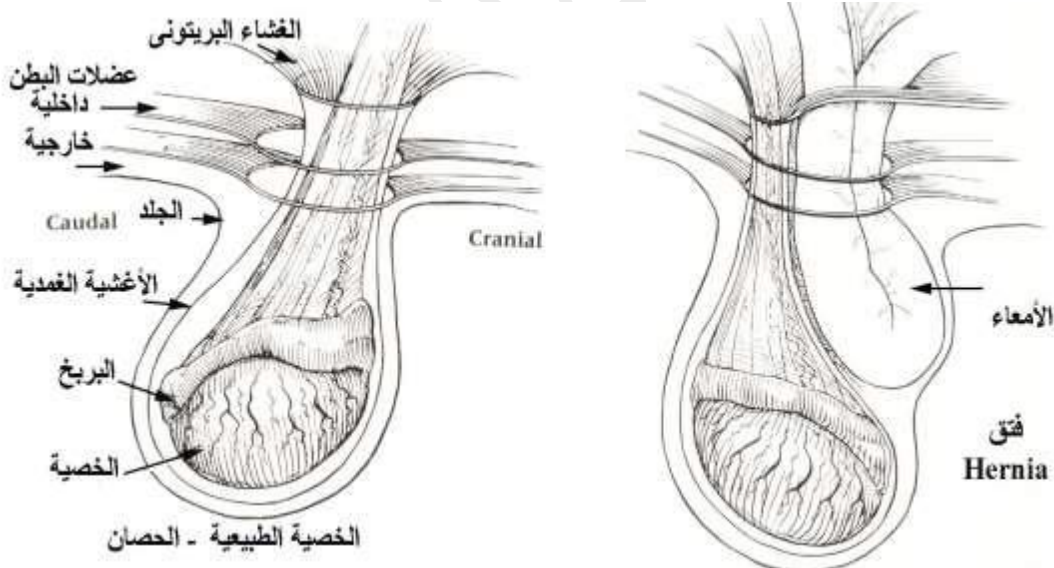
1- Physical examination.

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

- Skin, Eyes, Ear, Teeth, limb



- A bull that cannot complete a breeding is of no use. A physical examination can determine the reproductive health of an animal. The examination has an internal and external component .
- **Internal** - A transrectal examination is used to evaluate the health of secondary sex organs - urethra, prostate, seminal vesicles, ampullae and vas deferens. The most common abnormality is inflammation of the seminal vesicles, a condition that can result in infertility. Infections or abnormalities of the other organs are periodically encountered.
- **External** - Evaluation of scrotal shape is an important part of the external reproductive examination. Sperm production only occurs at a temperature slightly lower than the rest of the body. Some scrotal shapes can effect sperm production. For instance, bulls with a wedge-shaped scrotum and testicles too close to the body have trouble with temperature regulation and therefore could be subfertile. Alternatively, bulls with a pendulous scrotum could also be subfertile as large, loose testicles have a greater tendency to swing about and be damaged.
- Palpation of the testicles and epididymis and examination of the sheath and penis are done to detect abnormalities that could affect breeding performance. A general health examination is the last component of the physical. Bulls need to have good conformation and eyesight. They must also be able to walk long distances as well as complete the act of breeding. Physical disabilities such as lameness, arthritis, sole abscesses and footrot can interfere with mating ability but can also affect sperm production if the bull spends a lot of time lying down. Cull any bull with a serious physical abnormality from the herd regardless of its semen quality.



- 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 required measurements are less than or equal to 15 months 30 cm, greater than 15-18 months 31 cm, greater than 18-21 months 32 cm, greater than 21-24 months 33cm, greater than 24 months 34 cm.



- Semen Motility

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

*Semen Evaluation
Motility*

Minimum Recommended Motility is: 30% or FAIR (F) ^a		
Mass Activity (Gross)	Rating	Individual
Rapid Swirling	Very Good (VG)	>70%
Slower Swirling	Good (G)	50-69%
Generalized Oscillation	Fair (F)	30-49%
Sporadic Oscillation	Poor (P)	<30%

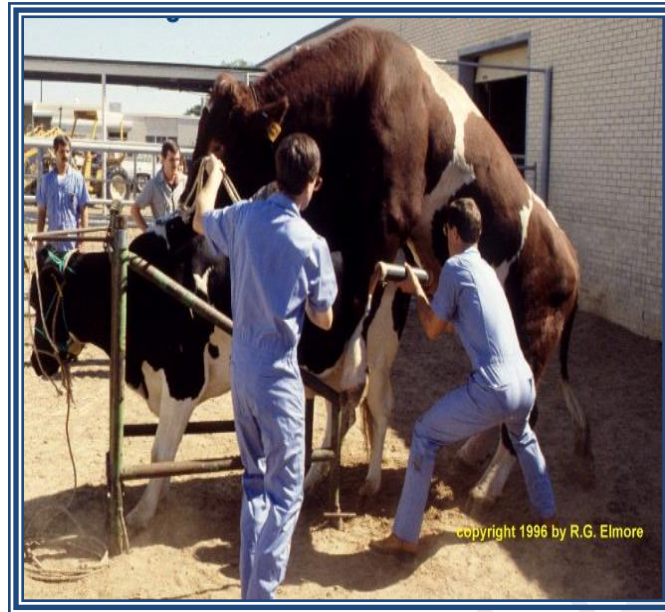
^a Adapted from the Breeding Soundness Evaluation Form, Society for Theriogenology, Hastings, NE

- Semen Morphology

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

- Libido/Mating Ability

This component of the soundness evaluation is the most difficult to measure. Libido is the sexual desire, or in other words, the eagerness of a bull to breed a cow. Mating ability is the ability to complete service. Both characteristics can be evaluated in a controlled testing situation. However, testing is rarely done unless a problem with the bull has been identified. The most common way to evaluate mating ability is to observe a bull on pasture with a group of females. While this is not ideal, it is one way to spot inadequate performers. Up to 10 per cent of bulls are culled due to inadequate libido.



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 percent sperm motility.
- Produces at least 70 percent 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 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.