

## Checking your bull is ready for joining

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A yearly examination of the bulls in the herd reduces the risk of poor performing bulls and bull breakdowns.

Some basic factors can be checked by the producer. More comprehensive testing can be done by a cattle veterinarian.

Figure 1. There is extra value in getting the vet to check the bulls for you.

### Why is it important to check the bull?

One of the most important goals in a beef herd is to achieve a short and concentrated calving span. The other is a high weaning percentage from all cow groups. Achieving both these goals will greatly increase the total kilograms of calf weaned at weaning time.

Both the cows and the bulls affect total weight of weaned calves, but the bull influences this measurement of herd fertility and profitability more than any other class of stock. The bull also contributes half of each calf's genetics, and individual bulls have the greatest effect on genetic improvements in the herd.



It makes good sense to ensure that the bulls selected to change herd genetics are also highly fertile. (Whilst it is rare to find bulls that are completely infertile, there is a wide range in their fertility.) Ideally these bulls must be able to breed large numbers of calves for as many years as the herd manager wishes to use them.

### When should the bulls be checked?

**Check just before joining:** Most producers check their bulls, or get a vet to check them, shortly before joining. Doing the test at this time is a good compromise between assuring the bull will perform to requirements and allowing enough time to get a replacement if needed.

**Check just after joining:** Bulls can also be tested immediately after the joining season. This gives the producer the most amount of time to seek a replacement if needed., but means a poor performer that was not tested before joining will have already produced disappointing results.

**Check at weaning:** Testing at weaning also gives producers sufficient time to replace the bull if needed, but is a less reliable indicator of his performance next joining season.

### What should the bulls be checked for?

Research and experience have shown there are many factors that influence how successful a bull will be in inseminating a mob of cows.

These include:

- scrotal circumference (strongly correlated with sperm cell output)
- sperm morphology and motility (the number of normal cells and how they move)
- the reproductive tract
- soundness and health of the bull
- mating ability and libido
- age and condition, and
- social interactions between bulls.

### Can I do this myself or do I need a vet?

Some of these things can be checked by producers, whilst others are usually done by cattle veterinarians. There is some extra value to be gained by having a cattle veterinarian check the bulls for you.

### What can I check myself?

As a producer, you can ensure the bulls are in good condition by feeding them well prior to the joining season.

Ensure bulls of similar age are used together and that bulls spend their time serving cows rather than fighting.

Check the soundness of the bull, making sure he moves well and is not lame.

Measure the scrotal circumference and assess the soundness of the testicles by palpating them. Understand what is normal, and what abnormal softness, lumps or swelling feel like.

Observe the bull during joining, making sure he is working well. If a bull does break down, you will be able to quickly sort out what to do so joining is not disrupted.

### Vet check: the Bull Breeding Soundness Examination

Cattle veterinarians use a standard Bull Breeding Soundness Examination when checking bulls. This has been developed through experience and research and is used both in Australia and overseas.

The examination thoroughly checks bulls for their soundness to breed and requires the bull to meet minimum standards to pass. The examination consists of a physical examination of the bull, an examination of his reproductive tract, a measurement of his scrotal circumference and an evaluation of his semen. In Australia, a serving ability test is also often done to gather information on the bull's ability to mate a cow, and his desire to do so.

Veterinarians often combine this testing with an assessment of the health of the bull, checking that the animal's health and vaccination program is up-to-date.

### Physical examination

The bull must be able to move freely around the paddock, and must be able to serve many cows without failure. The physical examination checks all parts of the bull's body, and pays particular attention to the feet and legs, and the bull's ability to walk well.

Generally the vet does a systematic examination, starting with the head, and looking at each part of the body.

**Eyes:** The bull must have good vision, for his own ability to move and perform normally, but also to make him less dangerous to handle. He should be checked for eye cancer and any 'pink-eye' that may affect performance.

**Teeth:** The teeth can be checked for wear and loss, especially in older bulls.

**Feet and legs:** Sound feet and legs are particularly important. The bull is checked for any abnormal angulation in the leg structure that may lead to breakdown, arthritis, joint injury or poor hoof growth and associated lameness.

Excessive angulation or not enough angulation in the leg joints both produce extra wear and tear on these joints and can cause early breakdown. Poor hoof structure which is a result of poor leg structure, a genetic foot abnormality or poor environmental effects will cause lameness.

Many bulls have feet and legs that may not be ideal, and an assessment needs to be made as to the risk of future breakdown in the bull. Leg and foot abnormalities are often genetic, and an assessment needs to be made of the impact of the bull on his sons and daughters in the herd.

The way the bull stands and walks helps assess his soundness and is critical in any soundness evaluation of a bull.

### Examination of the reproductive tract

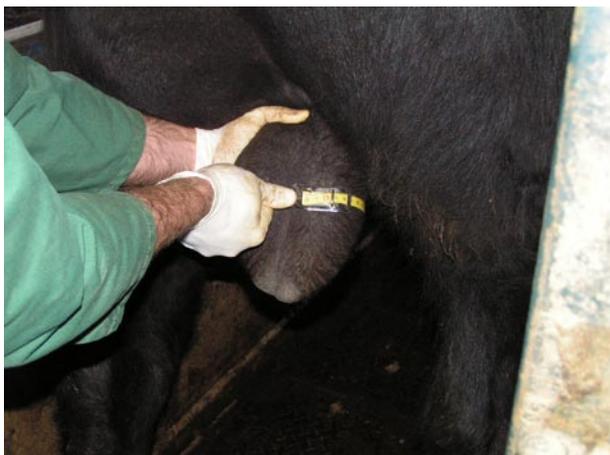
The reproductive tract should be carefully examined. This includes the scrotum, testicles and epididymides, and the prepuce, sheath and penis. A rectal examination may also be done to check for internal abnormalities.

The testicles and epididymides are checked for tone and consistency, abnormalities and swelling. These features indicate the health of the testicles and semen, and the ability of the semen to move through this part of the tract.

Scrotal size is related to the mass of sperm-producing tissue and the health of the sperm. It is also related to sexual maturity, and its measurement is a key indicator of the bull's fertility. (BREEDPLAN's publication of an Estimated Breeding Value for scrotal size indicates its importance to the industry.)

The penis and sheath are checked for sores, cuts, abscesses, scar tissue, warts and adhesions. The penis can be checked by palpating it through the skin or by extending it through the sheath, and further checked if the bull is observed serving a cow.

Figure 2: The testicles can be checked for size, tone and consistency, and abnormalities and swelling.



Injuries to the sheath and penis often occur during the joining season and may go unnoticed unless this examination is done.

### Semen evaluation

Palpating the testicles gives a good guide to the health of the semen-producing tissue, but the Breeding Soundness Examination includes a semen test to get a thorough check of the semen quality.

The vet collects semen either through electro-ejaculation or by rectal stimulation. Occasionally trained bulls are collected with an artificial vagina.

The semen is then examined under the microscope.

Semen quality is determined by the volume of the ejaculate, the movement (motility) of the semen, and normality of the sperm cells. Nutrition, extreme temperature and disease can reduce semen quality, and the quality can change over time. Recovery from heat or a high temperature due to a fever can take up to eight weeks.

**Semen volume** is important but it varies with age, size and breed and with the collection method used.

The sample should contain **90% vigorous motile sperm** cells. Motility is affected by cold temperatures, so the examination method is critical.

**Abnormal cells** should be less than 25% of the sample. There is considerable evidence that increased abnormalities of sperm cells are associated with poor conception rates.

### Serving ability and libido

The ability of the bull to serve cows, or his desire and willingness to do so, are important to his fertility. Libido is not related to any of the other tests done in the Bull Breeding Soundness Examination.

Some bulls may have the desire to mate, but not the ability. Others may be quite capable but have less desire to do so than other bulls.

Veterinarians are able to test the bull's libido and serving ability.

A serving test determines whether a bull is capable of serving females normally. Bulls are observed attempting to mount females. This gives the vet the opportunity to examine the dexterity of the bull.

Bulls should be observed attempting several serves, as some conditions such as spiral deviation of the penis and early joint disease may only become apparent after the bull has made several serves.

To be considered sound for breeding, a sexually stimulated bull must complete at least one normal serve within ten minutes, showing no signs that may adversely affect future serves.

Bulls can also be rated for their serving capacity by timing the number of serves they can successfully complete in a set time. Higher capacity serving bulls may be able to join more cows than lesser rated servers.

The Australian Model Code of Practice for the Welfare of Animals – Cattle (1992) [<http://www.publish.csiro.au/nid/22/pid/4831.htm>] has guidelines for the proper conduct of this test. These guidelines should be strictly observed.

### General health

The bull should be inspected for general good health and body condition.

It is important that the routine health program is up-to-date. This includes ensuring the bull is free from internal and external parasites, controlled by appropriate drenches and lice treatments.

Vaccinations for clostridial disease (5-in-1 vaccine) and vibriosis should be given at the right time to ensure adequate protection.

The bull should receive enough nutrition to be a fat score three body condition at the start of joining. This may mean a supplementary feeding strategy needs to be done for a few months before joining starts.

Underfeeding of young bulls may delay puberty and cause testicular damage. Underfeeding of older bulls may affect sperm quality.

Overfeeding, especially with high grain rations may also cause sperm quality to decline, and may affect the structural soundness of the bull.

White cottonseed is often fed to cattle, but it can affect bull fertility. Gossypol is a pigment in white cottonseed that damages sperm producing tissue and affects sperm quality. There is no safe level of gossypol recorded, so cottonseed should not be fed to bulls for two months prior to joining.

### Reducing and overcoming performance risks

Regardless of the purchase price or perceived value of a bull, an annual examination reduces the risk of the bull not performing to its best during joining.

Many aspects of the test can be done by the cattle producer, but some specialist areas will need the help of a cattle veterinarian.

An annual check-up helps determine if the bull is ready for joining. It reduces the risk of a bull breaking down. It is an indicator of his suitability for joining, but not a guarantee.

Producers need to continually monitor the bull during the joining season to check he is still working. As bulls have a habit of injuring themselves or breaking down unexpectedly, a backup plan to ensure all the cows still get in calf needs to be worked out in advance.

### Further information

The Australian Model Code of Practice for the Welfare of Animals – Cattle 1992, <http://www.publish.csiro.au/nid/22/pid/4831.htm>

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