



FACT SHEET

Understanding Scrotal Size Measurements - Shorthorn Bulls

The Importance of Scrotal Size

The Australian Cattle Veterinarians (ACV) have released revised standards for minimum scrotal circumference to pass a Veterinarian Bull Breeding Soundness Evaluation (VBBSE).

Scrotal measurement, by a standard repeatable measure, can indicate the likelihood a bull has reached puberty as well as demonstrate whether a bull is within a desirable range to be able handle mating a sufficient number of cows within a 6 week joining period.

Scrotal circumference is;

- A good indicator of daily sperm production
- A highly repeatable measure with high heritability (39% in Shorthorns)
- Correlated with sperm measure and morphology, however these should be independently assessed prior to joining.
- Genetically correlated to age at puberty in heifers

Minimum Scrotal Sizes for Shorthorn bulls.

There are two ways of assessing minimum scrotal size within any breed, these are scrotal size at a given age and scrotal size at a given weight. Of the two, the Bull Power project, which involved analysis from about 260,000 Australian bulls from 13 different breeds including Shorthorns demonstrated that scrotal size at a given weight may be superior reference for assessing minimum acceptable scrotal circumference in young bulls. This is because nutrition directly affects both scrotal circumference and weight.

Table 1. Minimum Acceptable Scrotal Size by Weight - Shorthorn Bulls

SHORTHORN MINIMUM SCROTAL SIZE BY WEIGHT							
Weight (Kgs)	300	400	500	600	700	800	900
SS (cms)	25*	29.5*	32	34	35	36	36.5

- * indicates animal may not have reached the thresholds for physiological maturity.

Bulls should be assessed on the basis of having **greater** than the recommended **minimum threshold value** for scrotal circumference by weight.

It is not always possible to weigh bulls at the same time as a scrotal circumference measurement is taken, therefore the following table provides the minimum scrotal circumference at a given age.

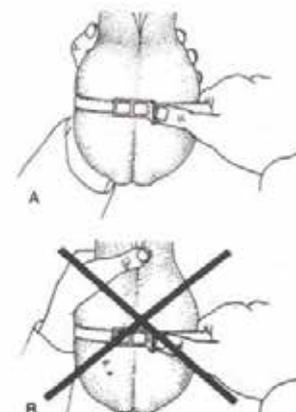


Figure 1. Correct method for measurement of scrotal size.

Table 2. Minimum Acceptable Scrotal Size by Age - Shorthorn Bulls

SHORTHORN BULLS	
AGE (months)	SCROTAL SIZE (cms)
12	23
15	26
18	29
21	31
24	32
27	33

It should be noted that these are the “bare minimum” requirements and breeders should consider a higher threshold. For example, bulls closer to the threshold limits are more likely to experience some of the problems associated with low scrotal size than bulls well above the threshold.

These standards also do not indicate that either puberty or sexual maturity has been reached; rather they indicate normal levels of testicular development as reflected in scrotal circumference. Separate evaluation taken at crush side of semen and sperm morphology are required to confirm attainment of puberty and sexual maturity, with most bulls reaching puberty within the range of 27 – 30 cm.

Recommendations:

There is no clear point at which a scrotal circumference indicates an increased risk to fertility. Therefore, scrotal circumference needs to be interpreted along with other elements of the physical examination, and with crush side semen and morphology results if available. Bulls with a scrotal circumference not within “normal limits” should be viewed with suspicion unless it can be shown by other means that this does not pose a risk.

Key elements of scrotal circumference measurements are required to ensure repeatability by operators.

The technique is:

- Both testicles are manipulated by downward massage so that they are completely within the scrotum against the ventral scrotum, lying side by side, and with no evidence of wrinkling of the scrotum
- The testes are then held firmly in the scrotum with one hand and the other hand is moved laterally and around the scrotal neck gathering up any loose scrotum and finally holding both testes firmly into the ventral scrotum (Figure 5). The thumb of the hand holding the neck of the scrotum should NOT cause any pressure on the septum of the scrotum.
- The scrotal tape is then looped around the testes and placed at the level judged to have the largest circumference. The tape is then drawn firmly in contact with the entire circumference so the tape and the skin create a single line. There should be no indentation as this is too subjective.

A Barth tape is the preferred instrument recommended by the ACV. The correct tension is achieved by placing the thumb against the piston and then firmly drawing the tape in contact with the entire circumference. The reading is taken at the edge of the measurement block when approximately 2 mm of green piston is showing; appearance of red indicates excessive tension.

It is recommended that a metal scrotal tape should only be used after the operator has become familiar with using the Barth tape, and thus the tension required.

Other measurement devices, especially ones composed of material prone to stretching should not be used.

Repeat the measurement at least once to ensure accuracy to the nearest 0.5 cm.

Reliabull Barth Scrotal measuring tapes can be ordered from Rocky Repro at www.rockyrepro.com.au or (07) 4934 1964.

THE BARTH RELIABULL MEASURING TAPE

