

RUM_010 Breeding Soundness Examination of the Bull, Buck and Ram

I. OBJECTIVE

To describe a safe and reliable protocol for the evaluation of breeding soundness in the bull, buck and ram.

II. DEFINITIONS

Competent - “the consistent application of knowledge and skill to the standard of performance required regarding the care and use of animals. It embodies the ability to transfer and apply knowledge and skill to new situations and environments.” (NHMRC, 2013)

III. COMMENTS / RECOMMENDATIONS

- This document sets a standard which may be used in research and teaching. It is not considered a substitute for established market assurance programs/standards such as the Veterinary Bull Breeding Soundness Evaluation (VBBSE) (Australian Cattle Veterinarians, 2013).
- Relative to bulls, this procedure incorporates:
 - RUM_008 Transrectal Palpation (+/- Ultrasonography) in Cattle
 - RUM_009 Semen collection by electro-ejaculation in the bull, and
 - RUM_032 Collection of vaginal or preputial samples using Tricamper sampling tool.
- Relative to rams / bucks, this procedure incorporates:
 - RUM_011 Semen collection in small ruminants using an artificial vagina
- As routine, any health concerns should be managed following veterinary advice, as required.
- Relative to animal ethics applications, when using this SOP, the following should be described in the individual ethics application: duration and frequency of animal use, they species to which this procedure is being applied (cattle, goat or sheep), and any variation to this SOP.

IV. EQUIPMENT

- Suitable infrastructure for animal restraint
- Gauze swab
- Scrotal circumference tape

All other equipment, such as artificial vagina and electro-ejaculator are described within their relative SOPs.

V. PREPARATION

- Ensure all equipment is set up and ready to go (this includes ensuring artificial vaginas are at the appropriate temperature (for rams and bucks), and ensuring the electro-ejaculator is sufficiently charged (for bulls))

VI. PROCEDURE

Procedure: Ram and buck

1. From a distance, assess the animal’s general demeanour, movement, and gait (e.g. while being mustered from the paddock, and/or while held in livestock yards).
2. Restrain the animal as appropriate to conduct a physical exam; depending on handling facilities and the animal’s size and temperament, this may be while held in a raceway, crush or via manual “catch and tip” from a small holding pen. Whichever method is used, non-invasive physical handling for examination is required (e.g. opening the mouth, palpating the testes etc).
3. Physical exam must be systematic, and should incorporate an assessment of at least the “5Ts” (see image 1):

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- **Teeth – dental conformation, age estimation.**
With the animal appropriately restrained insert fingers into the animal’s mouth between the incisors and molars, the tongue may be grasped with the opposite hand and held to one side. This should enable examination of the oral cavity and dentition. Animals with poor dental conformation have reduced ability to eat effectively, and thus, should not be selected for breeding.
 - **Toes – gait (lameness), hoof and limb conformation, hoof integrity.**
From external exam, if there is any indication of abnormalities the effected limb(s) must be thoroughly examined (including assessment of the underside of the hoof and interdigital surfaces). Animals with lameness, poor hoof or limb conformation should not be selected for breeding.
 - **Torso – body condition and contour (e.g. fat and musculature), wool/fur condition.**
Performed via visual, as well as dorsal lumbar palpation. Animals in poor condition or undesirable wool/fur characteristics should not be selected for breeding.
 - **Tossle – penis and pizzle integrity.**
The penis should be extruded to enable complete physical examination. This may be done with the animal in a sitting position, placing pressure on the sigmoid flexure (of the penis), then using the gauze swab to gently grasp the shaft of the penis so that it can then be extend out from the body. Animals with urogenital abnormalities should not be selected for breeding.
 - **Testicles – appropriate size, texture, and conformation (including that of the epididymis).**
The testes, epididymis and spermatic cords must be palpated. These structures should be relatively symmetrical, firm and uniform in texture, resilient to touch, and free moving within the scrotum. The external circumferential size of the testes should be measured and assessed against reference values based on species, breed, and age. Animals with urogenital abnormalities should not be selected for breeding.
4. Semen collection may then be performed by way of an artificial vagina, see RUM_011 Semen collection in small ruminants using an artificial vagina.
During semen collection the ram or buck should also be assessed for libido (sexual interest) and physical ability to mount and serve. Animals with poor libido or poor ability to mount and serve should not be selected for breeding.
5. Following the procedure monitor the animals for any signs of adverse events (e.g. lameness, genital trauma). If an unexpected adverse event(s) occurs take immediate action as outlined on the [animal ethics webpage](#).

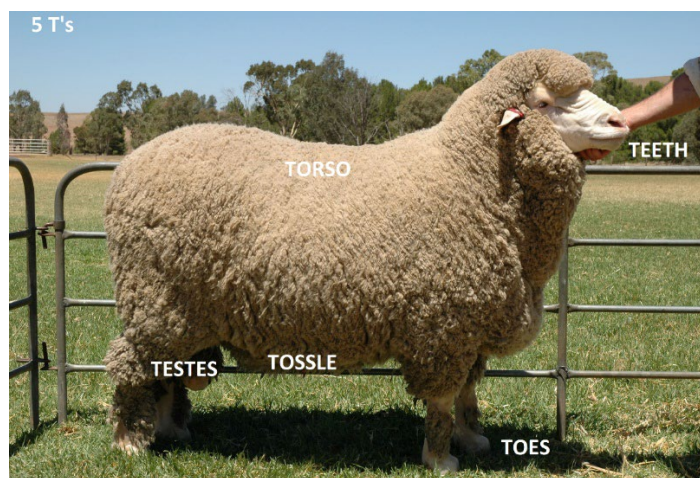


Image 1 | Photographic representation of the “5Ts” in a ram: teeth, toes, torso, tozzle, testes. Examination may not be limited to but should include assessment of these features (image source: Street, 2020).

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Procedure: Bull

1. From a distance, assess the animal's general demeanour, movement, and gait (e.g. while being mustered from the paddock, and/or while held in livestock yards). Gait and locomotor function should again be assessed as the bull enters the raceway into the crush.
2. Restrain the animal within a cattle crush, as appropriate to conduct a physical exam. This may require an ability to hold the head stable in a head bale and support of the rump with a support bar or "kick gate". Once secured within the crush the rest of the examination can commence.
3. Following a physical exam that incorporates an assessment of body condition and general health, the scrotal contents should be examined; this should include the presence and congenital normalcy of both testes, complete epididymides, vasa deferentia and pampiniform plexuses. Any external genitalia anatomical asymmetry or abnormalities should be noted. The testes should also be freely mobile within the tunica vaginalis. Scrotal circumference can be measured using a scrotal circumference tape ensuring that testes are fully descended in the scrotum – this value can be assessed against reference values based on breed and age.
4. The prepuce and sheath can be examined by direct observation. The penile shaft and glans penis can be observed opportunistically during rectal palpation or semen collection by electroejaculation.
5. The internal genitalia (pelvic portion of the penis, prostate, seminal vesicles and ampullae glands) are possible via rectal palpation (see RUM_008 Transrectal Palpation (+/- Ultrasonography) in Cattle).
6. Semen collection in bulls not trained to serve the artificial vagina is conducted by means of electroejaculation (see RUM_009 Semen collection by electro-ejaculation in the bull); this procedure should be conducted or be supervised by a veterinarian or an experienced animal scientist.
7. Serving ability and serving capacity may also be performed as part of the BSE but is not typically performed when training students. For details of this procedure refer to Australian Cattle Veterinarians. (2013).
8. Following the procedure release the animal from the restraint and monitor it for signs adverse events (e.g. weakness, lethargy, bleeding from the rectum). If an unexpected adverse event(s) occurs take immediate action as outlined on the [animal ethics webpage](#).

VII. REFERENCES

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Version #	Reviewing AEC (note: all other relevant AECs ratify the approval)	AEC Review Date	Approval To Date
1	PCA	20/07/2022	20/07/2025

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