

The Importance of Bull Breeding Soundness Exams

Danye L. Archuleta, DVM

Introduction

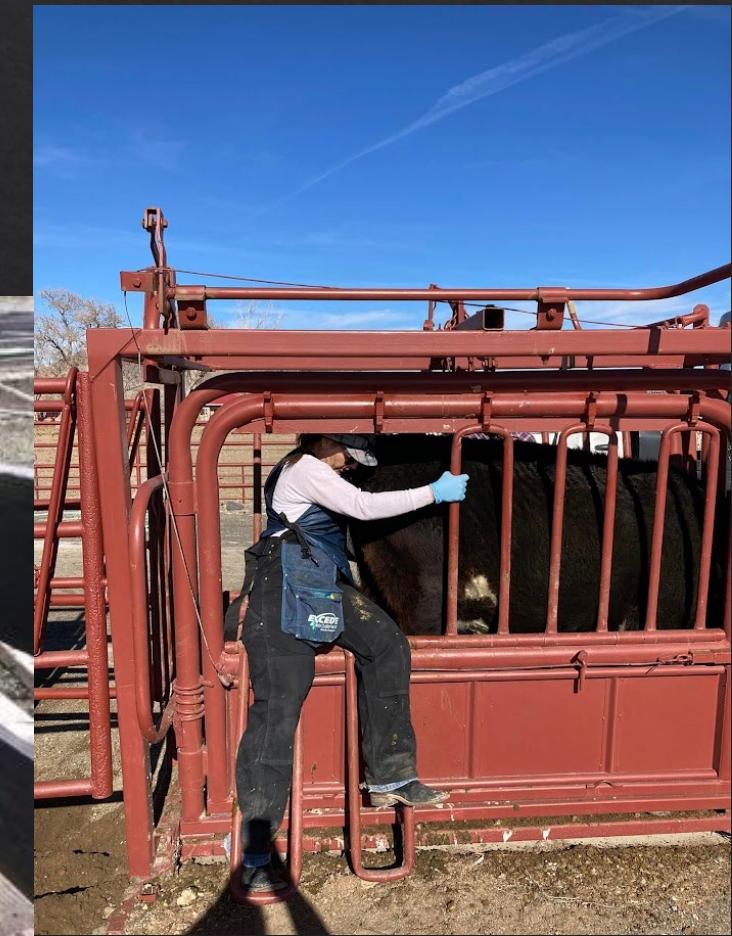
Danye L. Archuleta, DVM – Washington State University Class of 2019





Danye L. Archuleta

University Class of 2019



What is a
Breeding
Soundness
Exam (BSE)?

Physical Examination

Semen Evaluation

Tritrichomonas foetus
Testing

Physical Examination



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Physical Examination



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Physical Examination

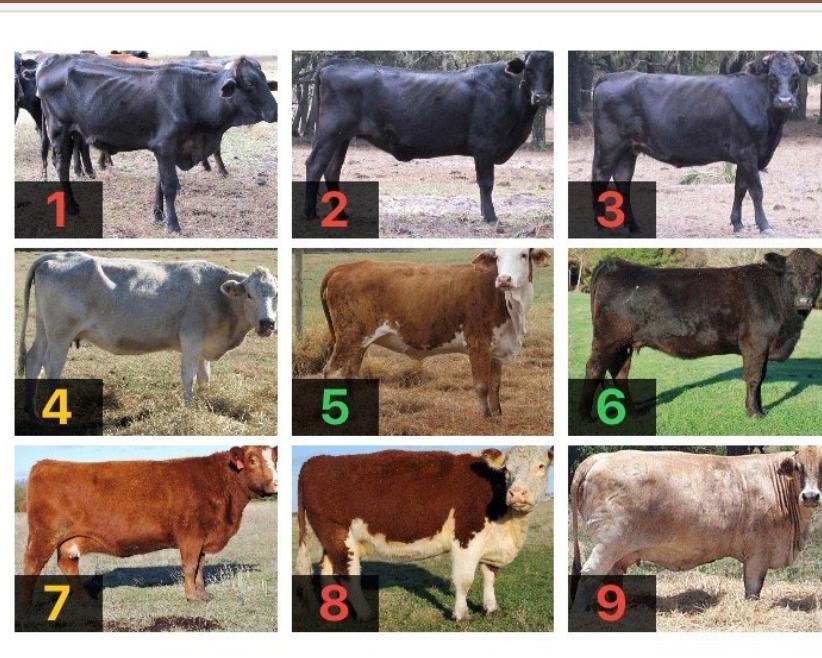


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Physical Examination

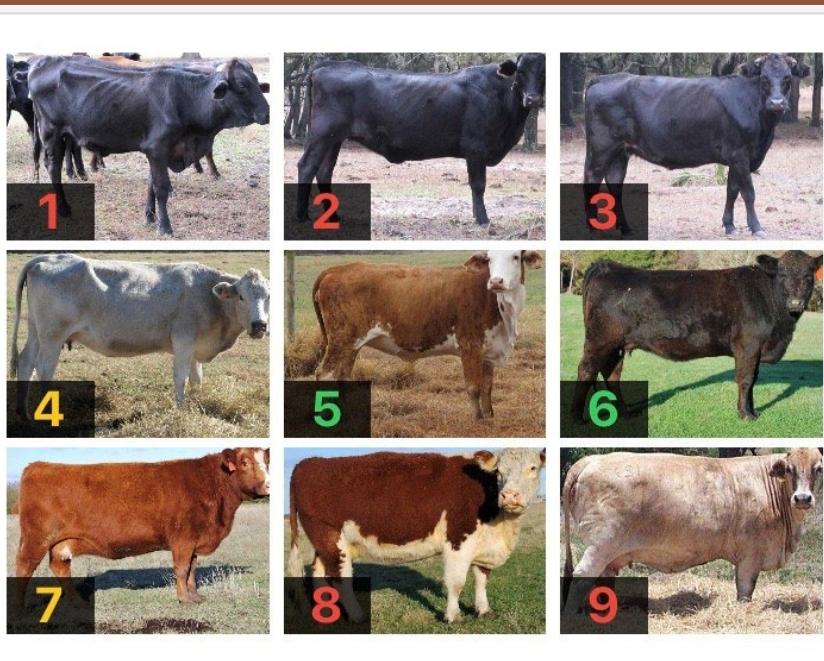


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Physical Examination



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Physical Examination



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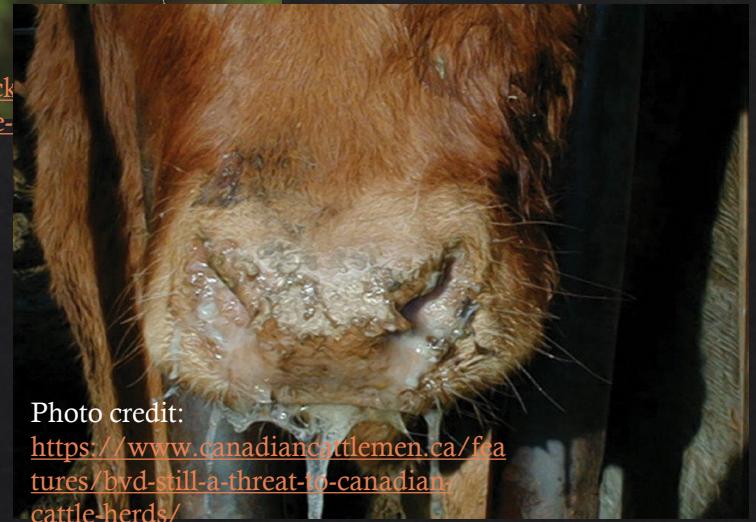


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Physical Examination



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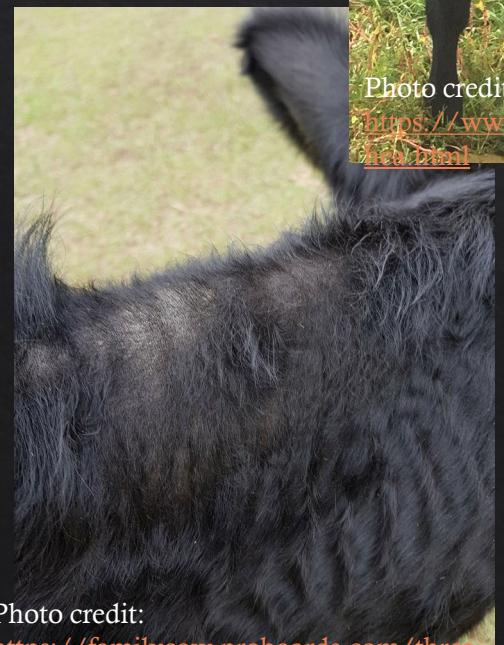


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Physical Examination

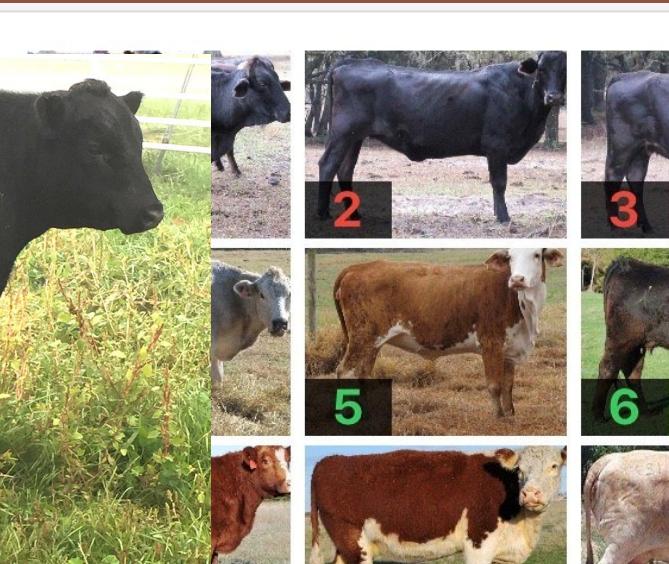


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Physical Examination



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USDA Cooperative Extension Slide Series
Clemson University
Bugwood.org

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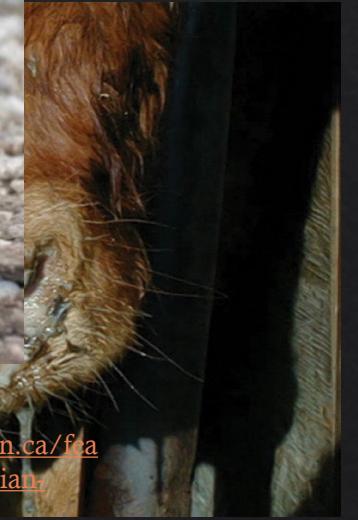


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Physical Examination



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<https://usa.chinadaily.com.cn/world/20.htm>



it:
www.endellfarmvets.co.uk/blog/item/1-beef-cattle



Photo credit:
<https://www.canadiancattlemen.ca/features/bvd-still-a-threat-to-canadian-cattle-herds/>



Lameness

Photo credit:

<https://www.grainnews.ca/cattlemans-corner/keep-foot-rot-locked-out-of-the-breeding-season/>

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<http://usa.chinadaily.com.cn/world/20.htm>

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Photo credit:

<https://www.canadiancattlemen.ca/features/bvd-still-a-threat-to-canadian-cattle-herds/>

Semen Evaluation

Assess Genitalia

- Prepuce/sheath
- Scrotal circumference
- Testicle palpation

Assess Secondary Sex Glands

- Transrectal palpation of seminal vesicles, ampulla, bulbourethral gland, prostate, and inguinal rings



Photo credits: 

https://visgar.vetmed.ufl.edu/en_bovrep/prepuce/prepuce.html

Semen Evaluation

Assess
Genitalia

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https://visgar.vetmed.ufl.edu/en_bovrep/prepuce/prepuce.html

Semen Evaluation

Assess
Genitalia

Preputial laceration –healing

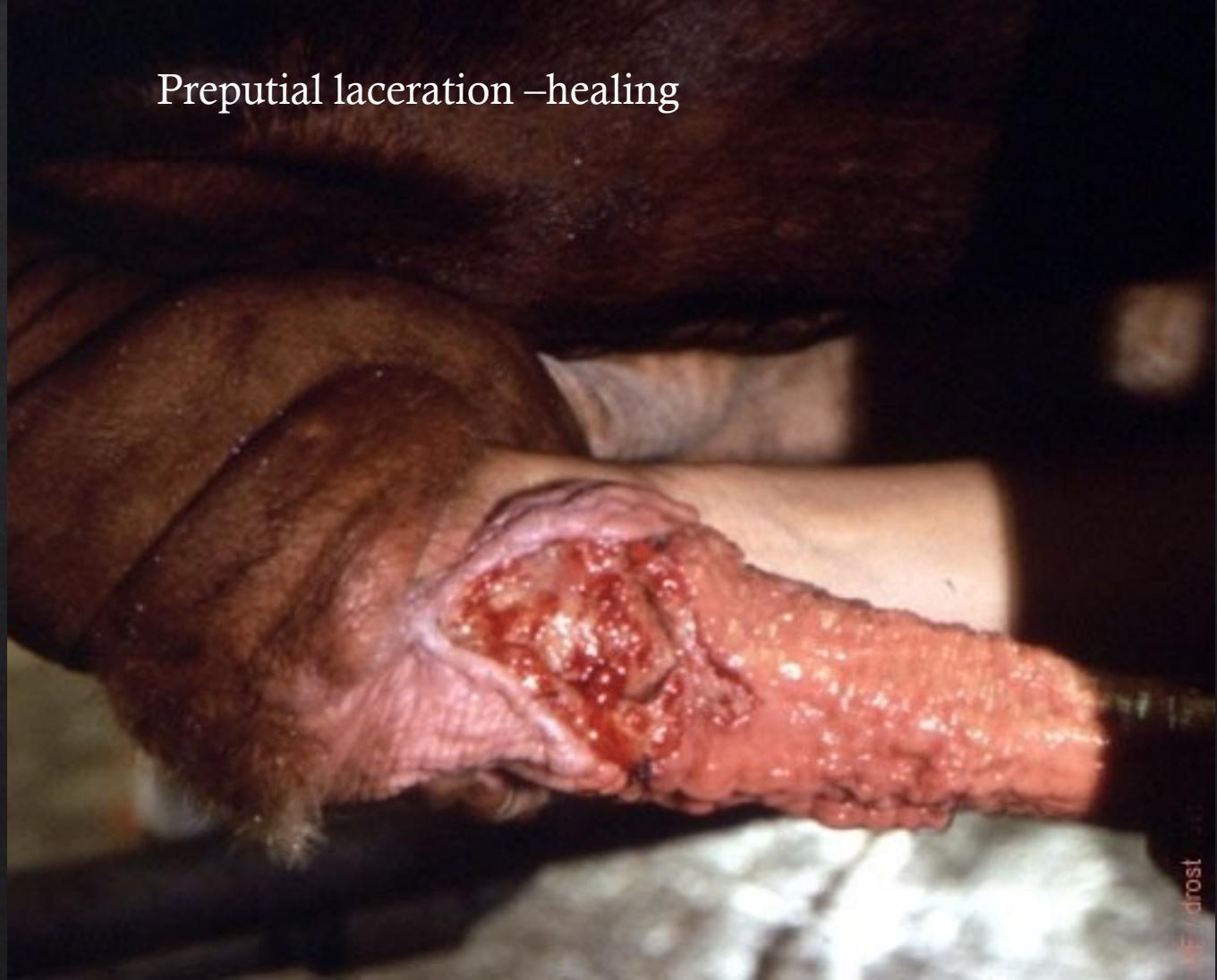


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Semen Evaluation

Assess
Genitalia

Preputial lining injury



Preputial laceration –healing



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https://visgar.vetmed.ufl.edu/en_bovrep/prepuce/prepuce.html

Semen Evaluation

Assess
Genitalia

Prepuce



Prolapsed prepuce

Non-healing



UF / drost

UF / drost

Photo credits: 

https://visgar.vetmed.ufl.edu/en_bovrep/prepuce/prepuce.html

Semen Evaluation

Assess
Genitalia

Scrotal or testicular
asymmetry

F

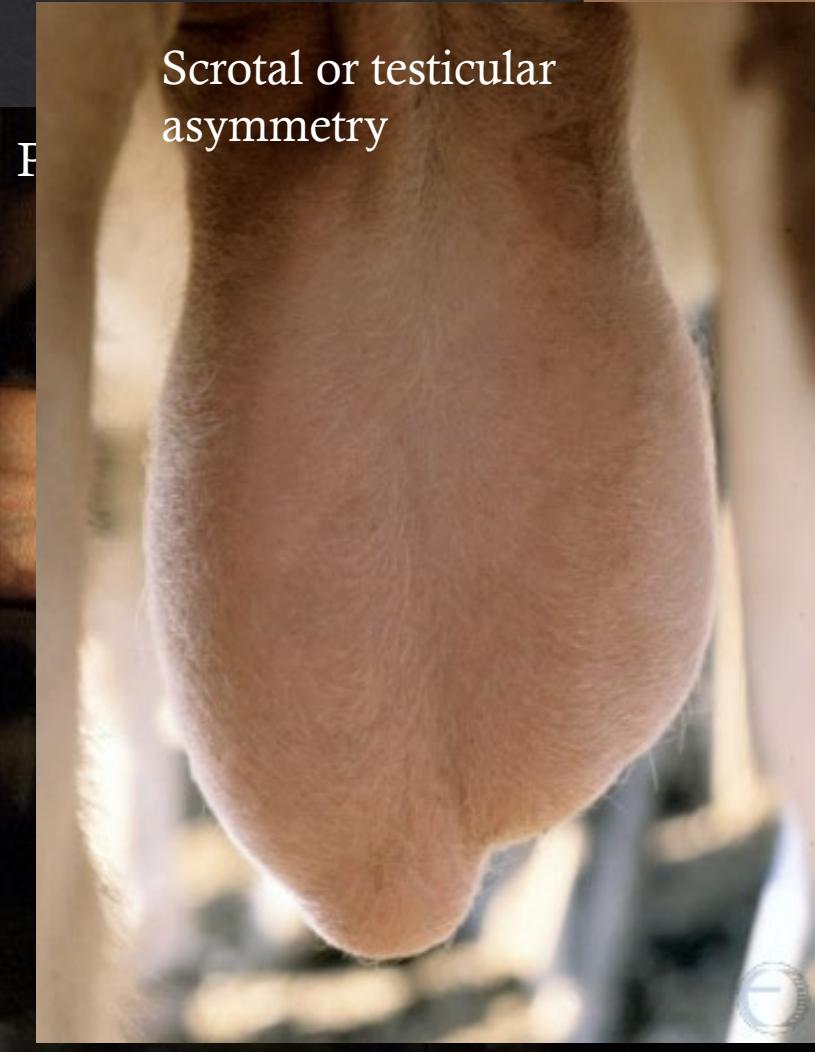


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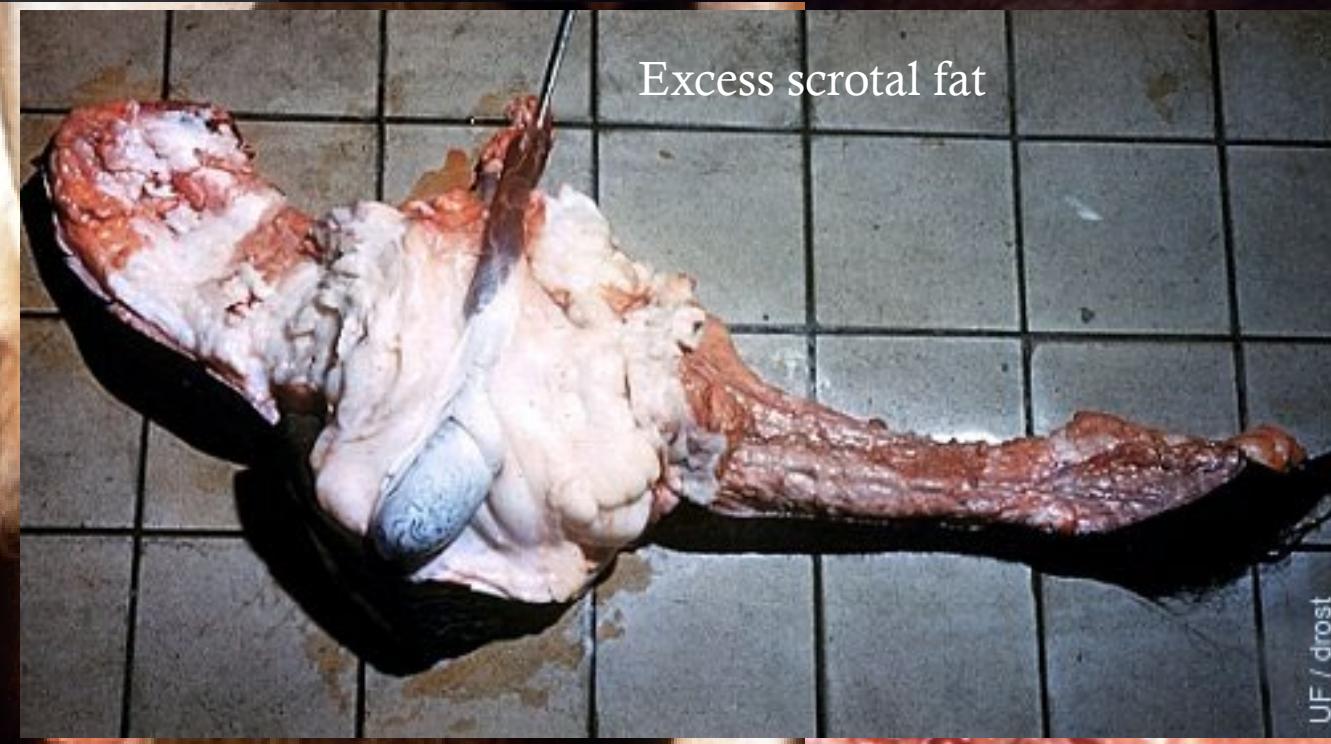
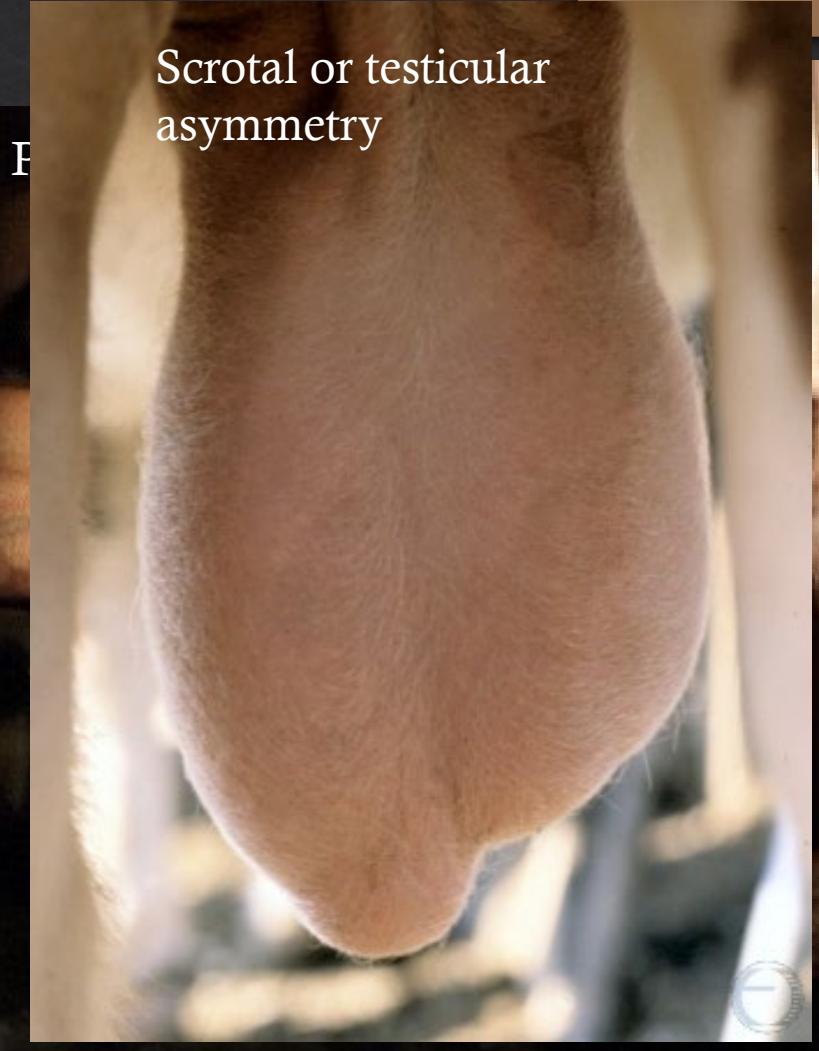
https://visgar.vetmed.ufl.edu/en_bovrep/prepuce/prepuce.html

Semen Evaluation

Assess
Genitalia

Scrotal or testicular
asymmetry

F



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Semen Evaluation

Assess
Genitalia



Semen Evaluation

Assess
Genitalia



Photo credit: <https://breeds.okstate.edu/cattle/hereford-cattle.html>

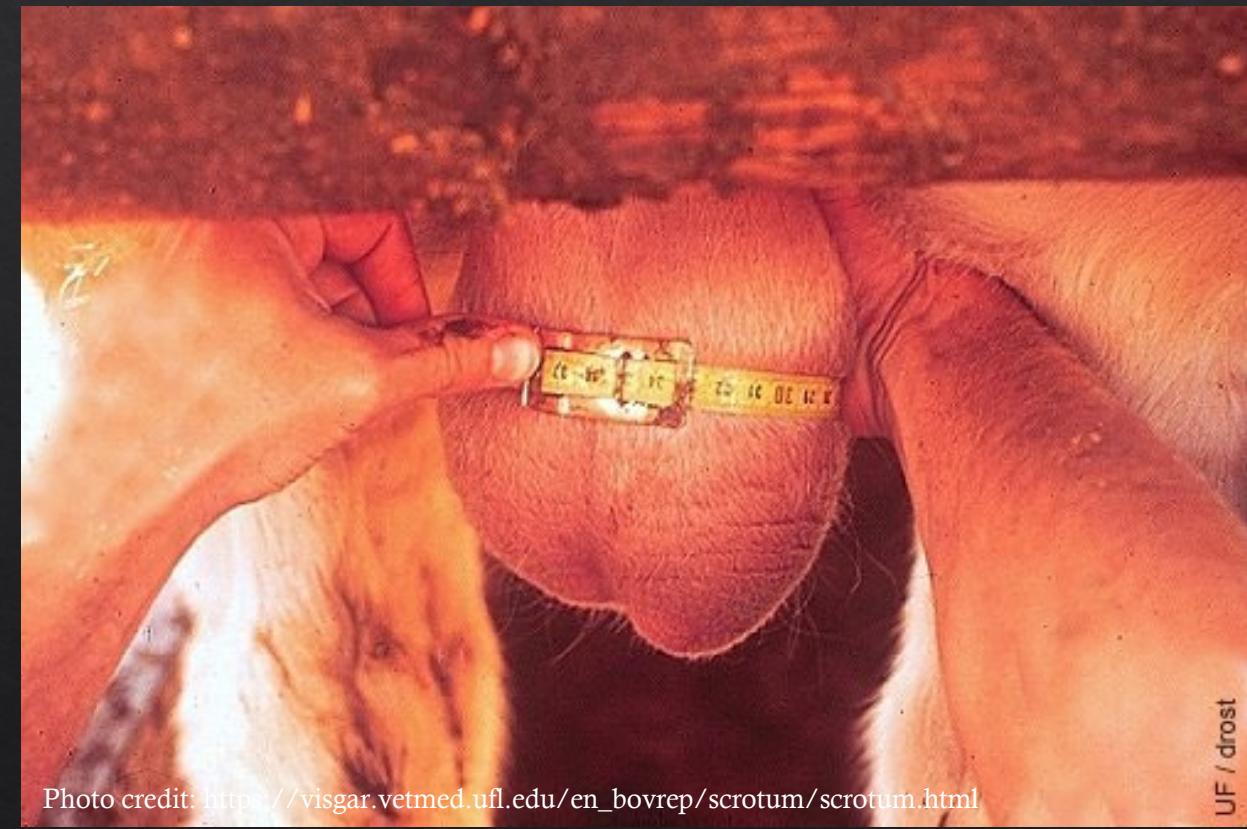


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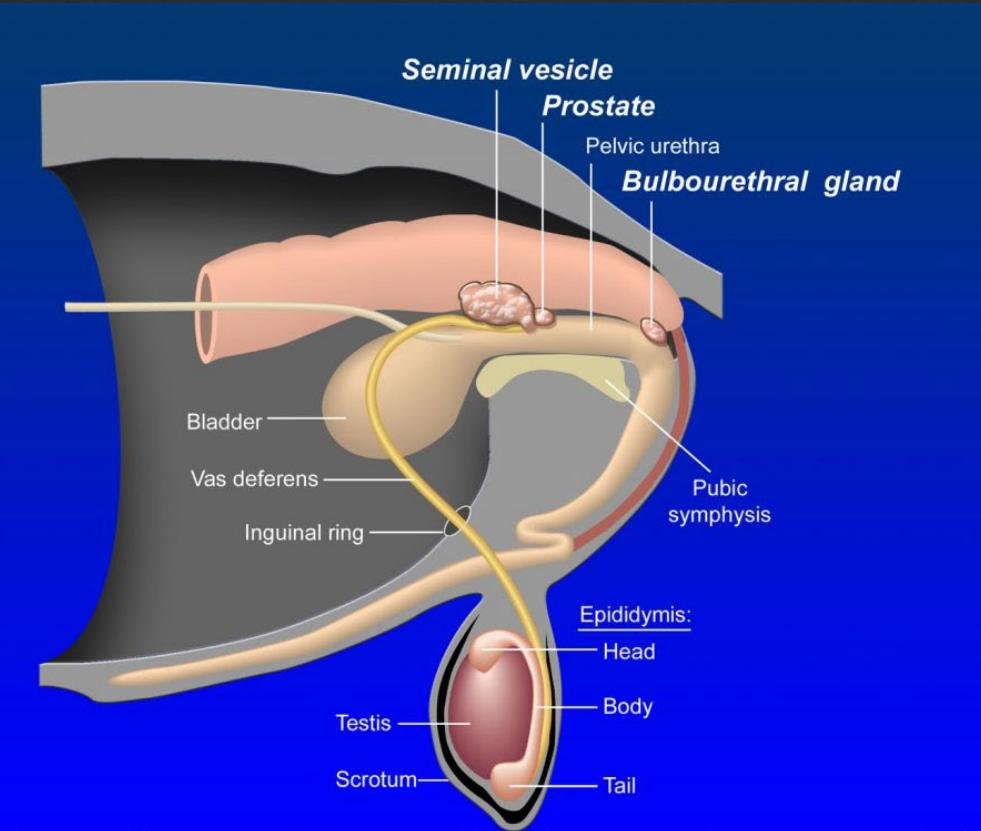
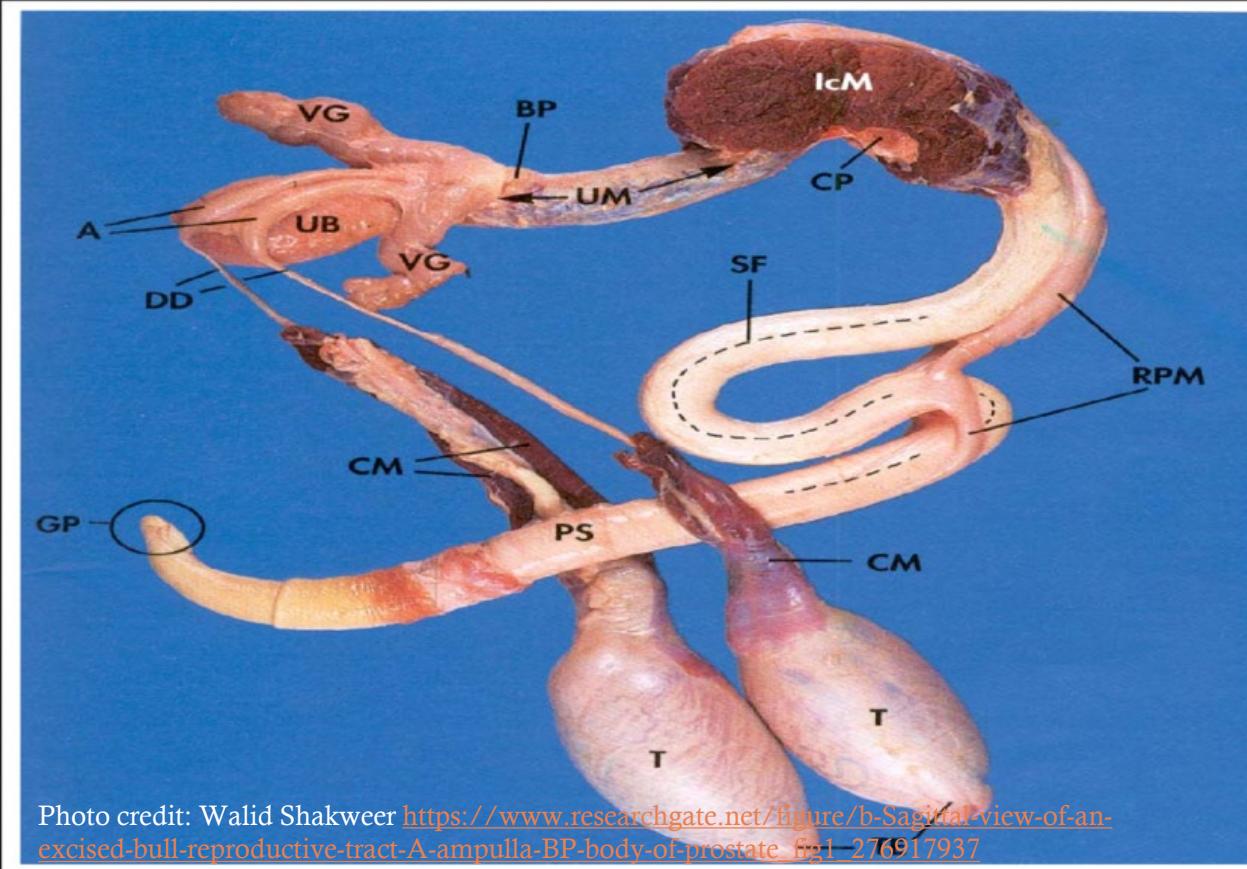
UF / drost

Semen Evaluation

Assess
Secondary
Sex Glands

Semen Evaluation

Assess
Secondary
Sex Glands



Semen Evaluation



Photo credit: <https://www.drovers.com/news/breeding-soundness-exams-insurance-bulls>

Semen Evaluation



Photo credit: <https://www.drovers.com/news/breeding-soundness-exams-insurance-bulls>

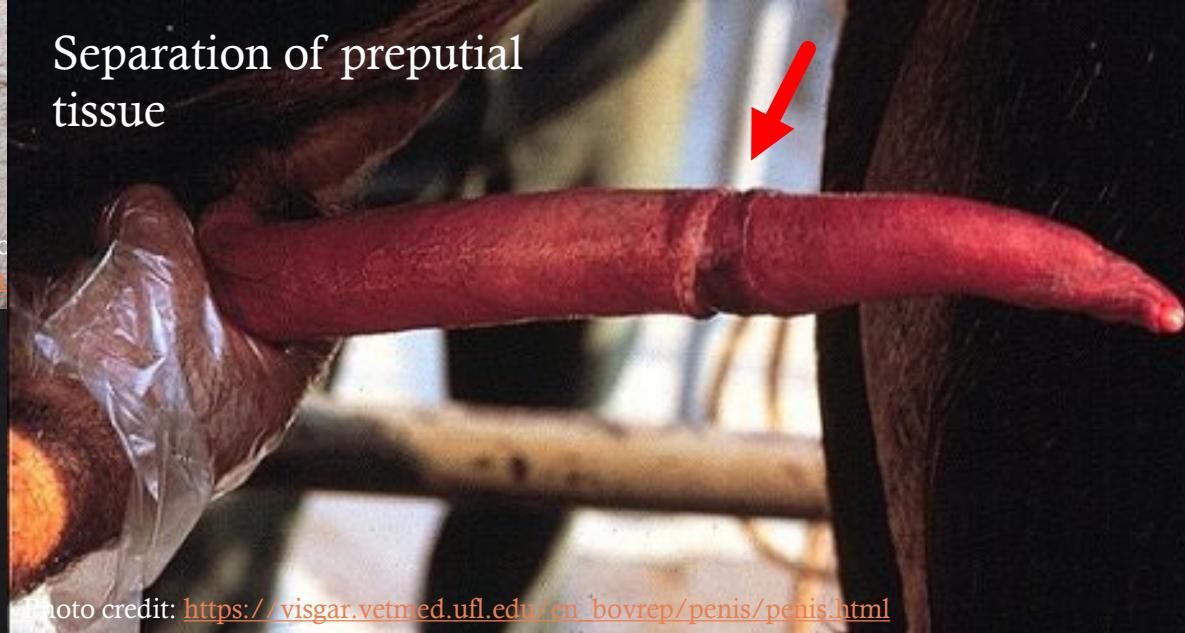


Photo credit: https://visgar.vetmed.ufl.edu/en_bovrep/penis/penis.html

Semen Evaluation

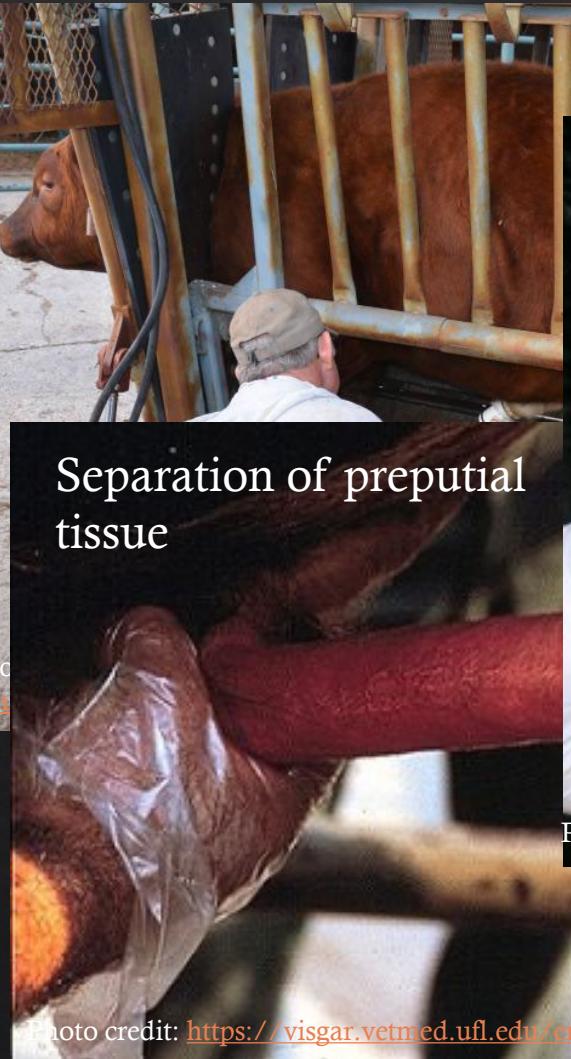


Separation of preputial tissue



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Semen Evaluation



Semen Evaluation



Separation of tissue

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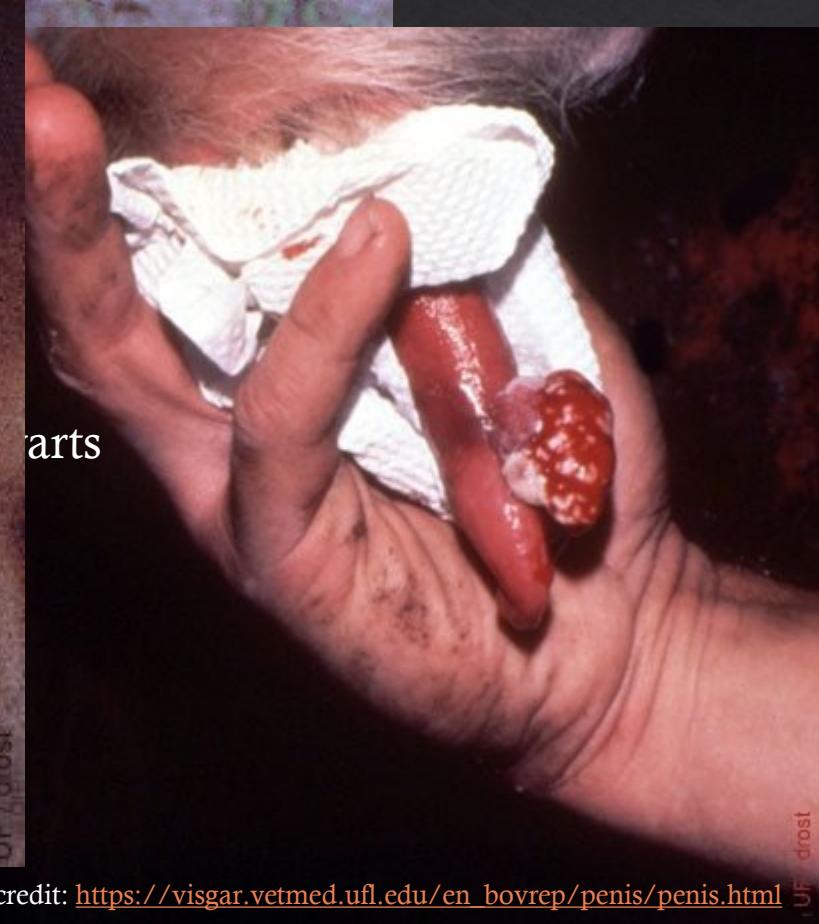


Photo credit: https://visgar.vetmed.ufl.edu/en_bovrep/penis/penis.html

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Semen Evaluation



Separation of tissue

Pho
insu

Photo credit: <https://visgar.vetme>

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Congenital diphallus

Hair Ring

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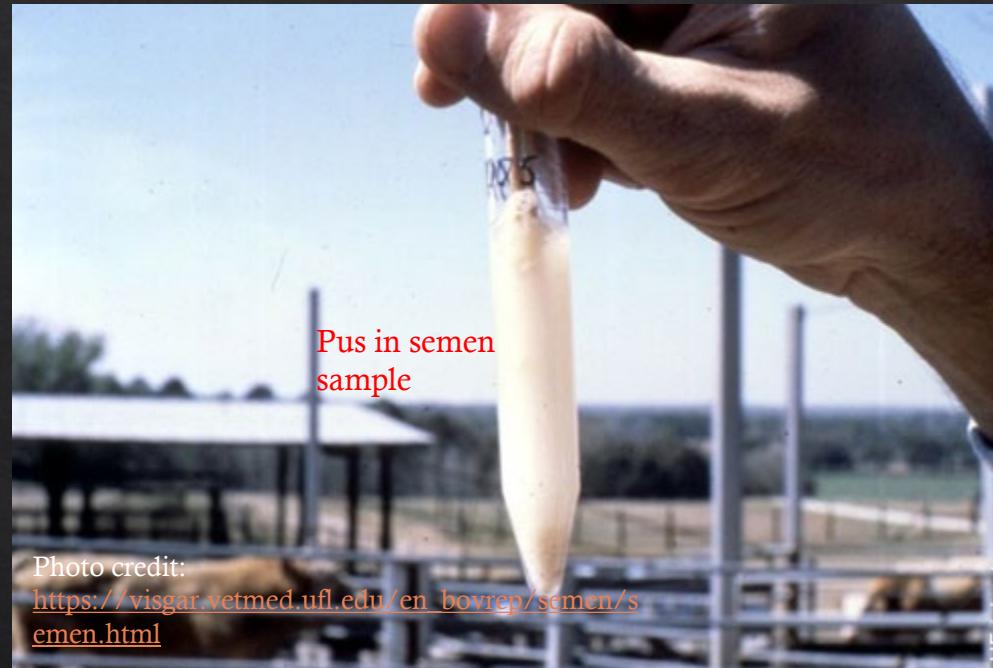
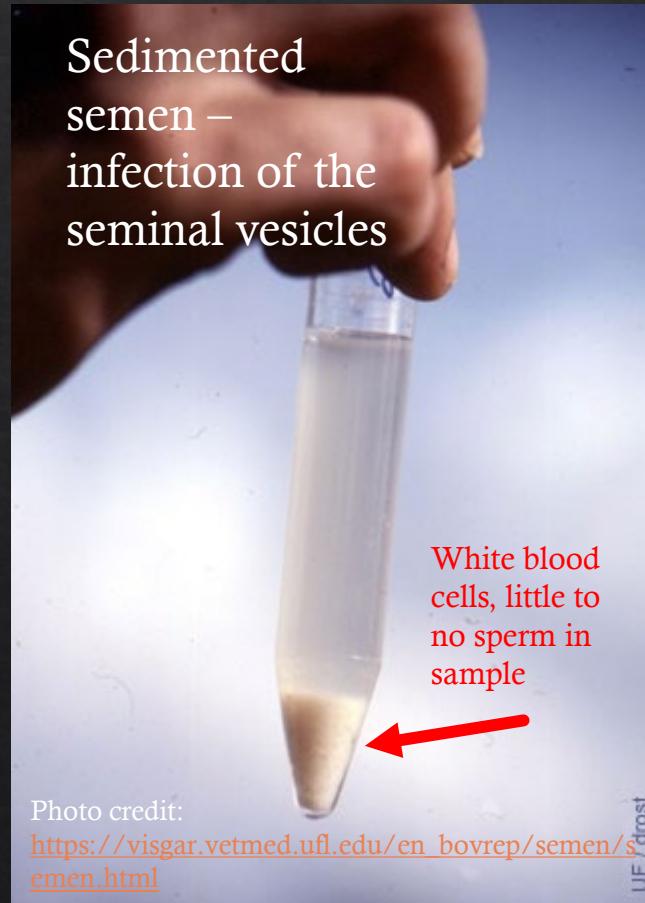
'en_bovrep/penis/penis.html

Semen Evaluation



Semen Evaluation

Sedimented
semen –
infection of the
seminal vesicles

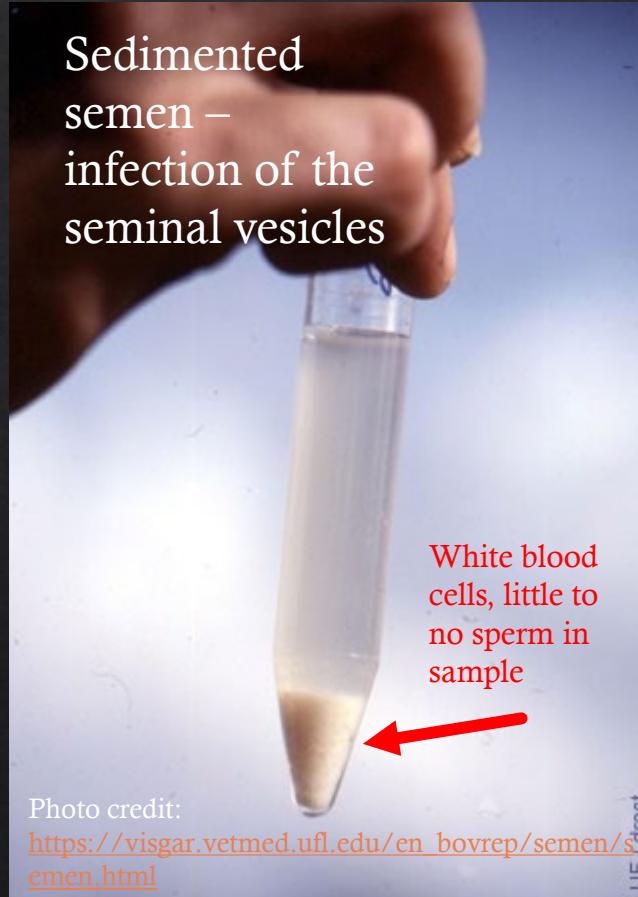




Motility Video:

<https://www.facebook.com/watch/?v=554679085264635>

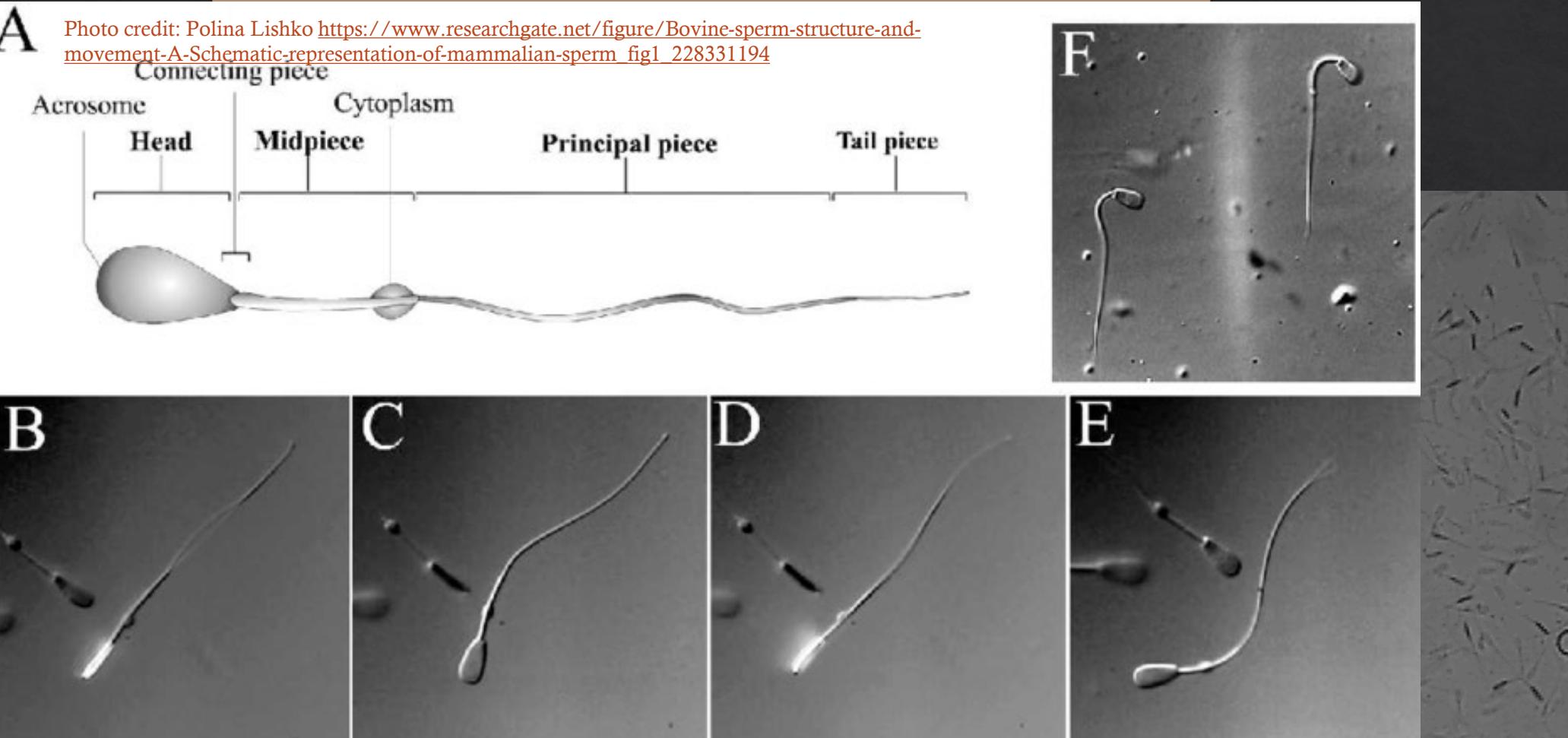
Semen Evaluation





Motility Video
<https://www.youtube.com/watch/?v=5535>

Sediment
semen –
infection
seminal v



Bovine sperm structure and movement. A) Schematic representation of mammalian sperm morphology showing the location of the CP. B-E) Still images from Supplemental Movie S1 showing the rotation of the sperm head through one full rotation and direction of the tail movement in the sperm beating cycle. F) Image of sperm in a kinked conformation. Motion of such sperm is shown in Supplemental Movie S2. Original magnification 31200.

Photo credit:
<https://visgar.vetmed.wsu.edu/semens.html>

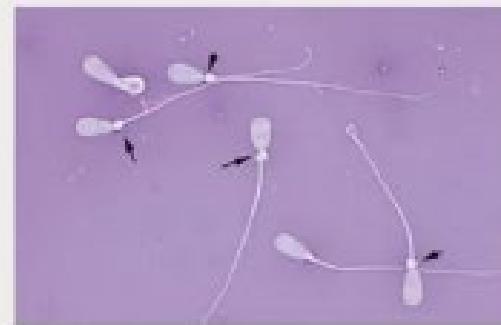


Motility Video
<https://www.youtube.com/watch?v=435>

Sedimentation of semen –
infectious agents in seminal



1. Coiled principal piece.

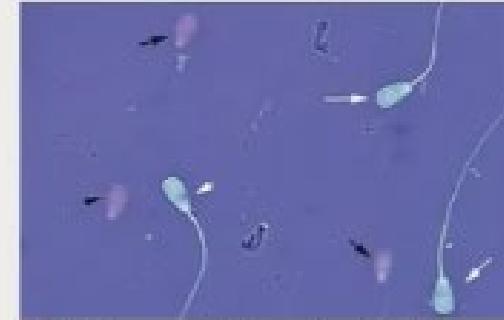


4. Proximal cytoplasmic droplets.

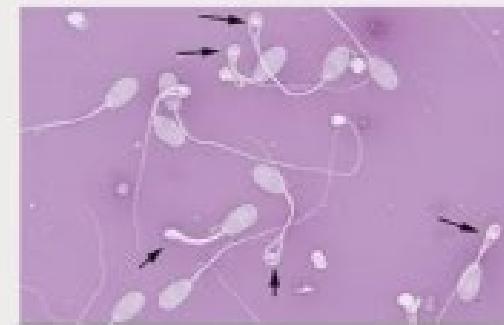


7. Double tail.

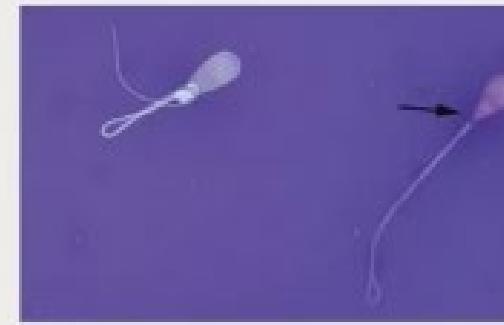
Photo credit: Ahmed TibaryDVM, MS, DSc, PhD, DACT
<https://www.bovinevetonline.com/news/education/50-bulls-fail-bses-due-poor-sperm-morphology>



2. Detached heads (white arrows point to normal sperm).



5. Distal midpiece reflexes.



8. Pyriform head.



3. Severely coiled midpiece.

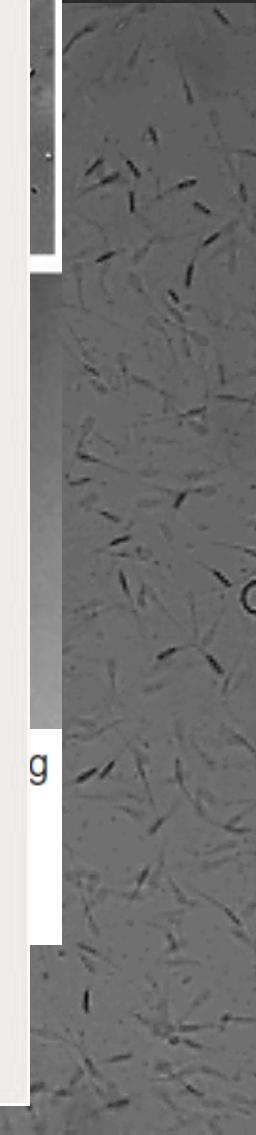


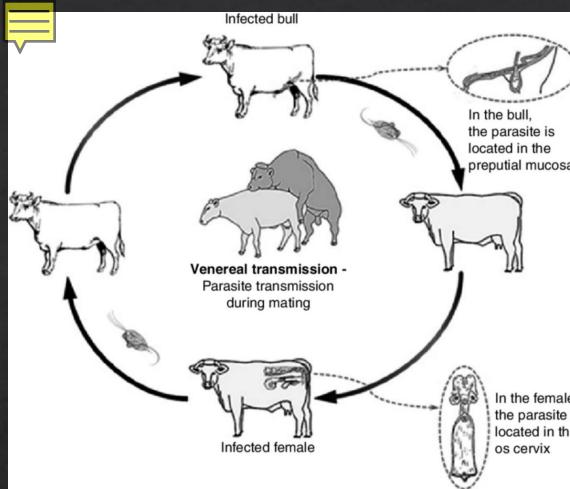
6. Abnormal head.



9. Tapered/pyriform head with abnormal midpiece.

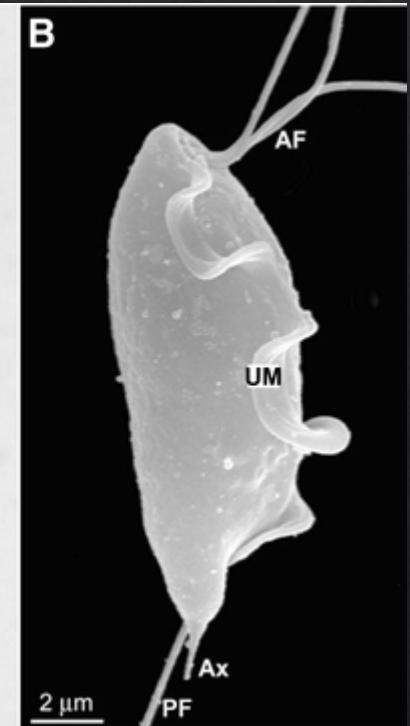
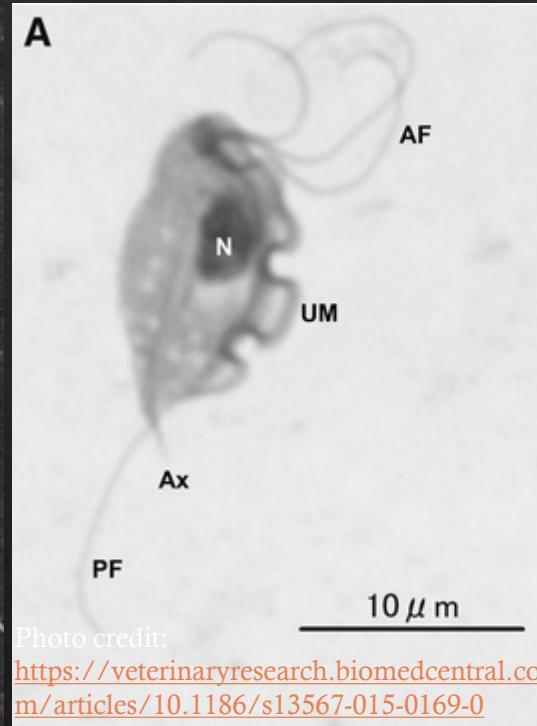
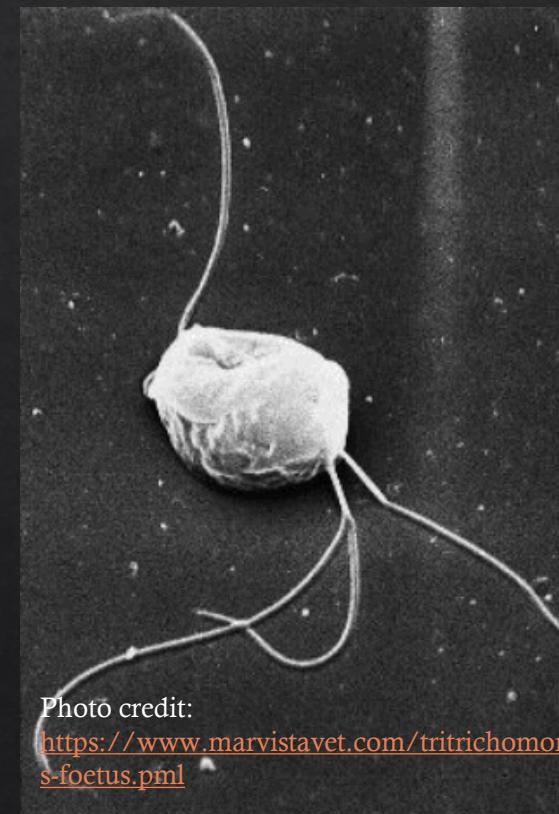
PHOTO:DR. A. TIBARY, COMPARATIVE THERIOGENOLOGY SERVICE, VETERINARY TEACHING HOSPITAL WSU





Tritrichomonas foetus Testing

- ❖ Protozoal parasite lives in prepuce of bulls
- ❖ Infection rate of cows 30-90% (live cover)
- ❖ Inconsistent ability to clear infection, reinfection can occur
- ❖ Causes early embryonic death
- ❖ Many open or late-bred cows, decreased number of calves
- ❖ Pyometra, endometritis, mummified fetuses



Tritrichomonas foetus Testing

- ❖ Diagnosis based on history and clinical signs plus testing bulls
- ❖ Medical treatment not effective means of management
- ❖ Cull infected bulls, replace with virgin bulls or young negative bulls
- ❖ Vaccines not effective method of control
- ❖ Biosecurity measures are paramount
 - ❖ Keep infected or potentially infected animals separate from clean animals
 - ❖ Work with your vet for the best protocol for your herd



to credit: Merck Veterinary Manual;
<https://www.medicalexpo.com/prod/biomed-diagnostics-inc/product-106180-822285.html>

Take-Away Points

- ❖ Breeding Soundness Exams (BSEs) on bull every year, and prior to purchasing new bulls
- ❖ Pregnancy diagnosis of cows every year
- ❖ Work with your veterinarian for a Whole-Herd-Health plan every year to maximize health, efficiency, and profitability
 - ❖ vaccine recommendations tailored to your herd
 - ❖ nutrition recommendations
 - ❖ brucellosis vaccination of heifers
 - ❖ testing of your bulls
 - ❖ pregnancy diagnosis of your cows
 - ❖ and more...

References and Works Cited

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- ❖ Society for Theriogenology
- ❖ UNL Beef Website
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<http://www.vivo.colostate.edu/hbooks/pathphys/reprod/semeneval/morph.html>
- ❖ Agri-View “Understand Trich In Cattle”
https://agupdate.com/agrивiew/news/dairy/understand-trichomoniasis-in-cattle/article_dcaeef9b-040b-5e5c-b153-a989ad74c8eb.html
- ❖ Western College of Veterinary Medicine “Learn About Parasites: Tritrichomonas foetus”
<https://wcvm.usask.ca/learnaboutparasites/parasites/tritrichomonas-foetus.php>
- ❖ Additional reading/FYI: Angus Beef Bulletin “How Much Bull Power Do You Need?”
https://www.angusbeefbulletin.com/extra/2022/02feb22/0222mg_BullBuying.html



Questions

Thank you, Danye L. Archuleta, DVM
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