



TRICHOMONIASIS: “TRICH”

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Program outline

1. Trich, the disease
2. Trich prevention and control recommendations
3. Kansas Trich-positive counties
4. Proposed Kansas Trich regulations



TRICH—THE BASICS

- Name: *Tritrichomonas foetus*
- 1932—first reported case in U.S.
- World-wide prevalence



THE ORGANISM

Protozoa

(not a virus or bacteria)

Rounded anterior

Pointed exterior

3 anterior flagella

1 posterior flagella

Size = bovine sperm head



INFECTION

Venereal disease

Can ONLY be spread during the breeding act

Carried by male

Males show no outward signs of infection

Negative clinical effects limited to female



CLINICAL SIGNS

Pyometra (uterine pus): 5-15 % of the infected females

Abortion: 5-7 months gestation
(literature: 20-30% of cases)

Fetal loss at
50 to 70 days of gestation



CLINICAL SIGNS, CONT.

Primary herd sign: prolonged calving interval or high open rate at preg check

Producer rarely sees cleanings or aborted fetus

Peak fetal loss is 50 to 70 days of gestation

Fetus is very small when lost



FEMALE IMMUNITY

Usually develop short term immunity
2-3 heat cycles after fetus is lost
90 days after fetal loss



Immunity lasts 2-6 months
Susceptible to re-infection late this
breeding season or next

Can become chronic carriers: less
than 1% (0.3%)



TRICH VACCINATION

One currently available vaccine

TrichGuard™ & TrichGuard V5L™
Marketed by Boehringer Ingelheim

2 doses, 6 and 4 weeks prior to breeding

4 weeks prior in subsequent years

Most experts agree that vaccinating in the fall
for spring breeding is NOT effective

Does NOT prevent infection—reduces the
length of infection:

One study: Increased pregnancy rate from 31%
to 63%



TRICH IN THE MALE

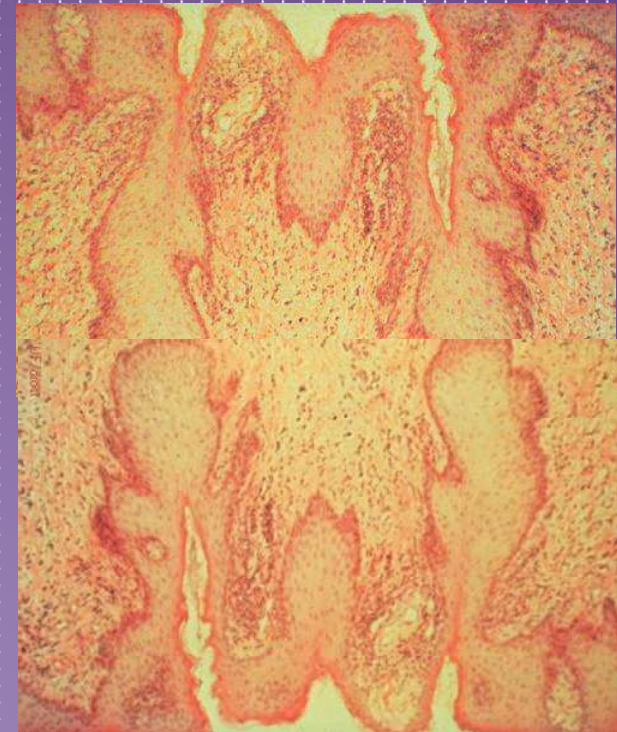
Male is an asymptomatic carrier

T. foetus is NON-invasive—lives in penile crypts

Bulls under 3 years of age can be transient carriers

Bulls under 3 years of age can also become chronic carriers

Older (>4 years) bulls are chronic carriers: are of the most concern



TRICH TREATMENT

NONE:

(no legal treatment for either males or females)

Culling infected bulls and open cows, best management for Trich positive herds



HOW MUCH TRICH IS OUT THERE?

Florida: 30.4% operations, positive

California: 15.4% operations, positive

Oklahoma: 3.0% bulls that were tested

Nevada: 44.1% operations, positive



TRICH DIAGNOSTICS

Smegma (normal secretions of oils, dead cells that accumulate on the penis and in the prepuce)

Vaginal mucus

Uterine fluid



SAMPLING TECHNIQUES: BULL

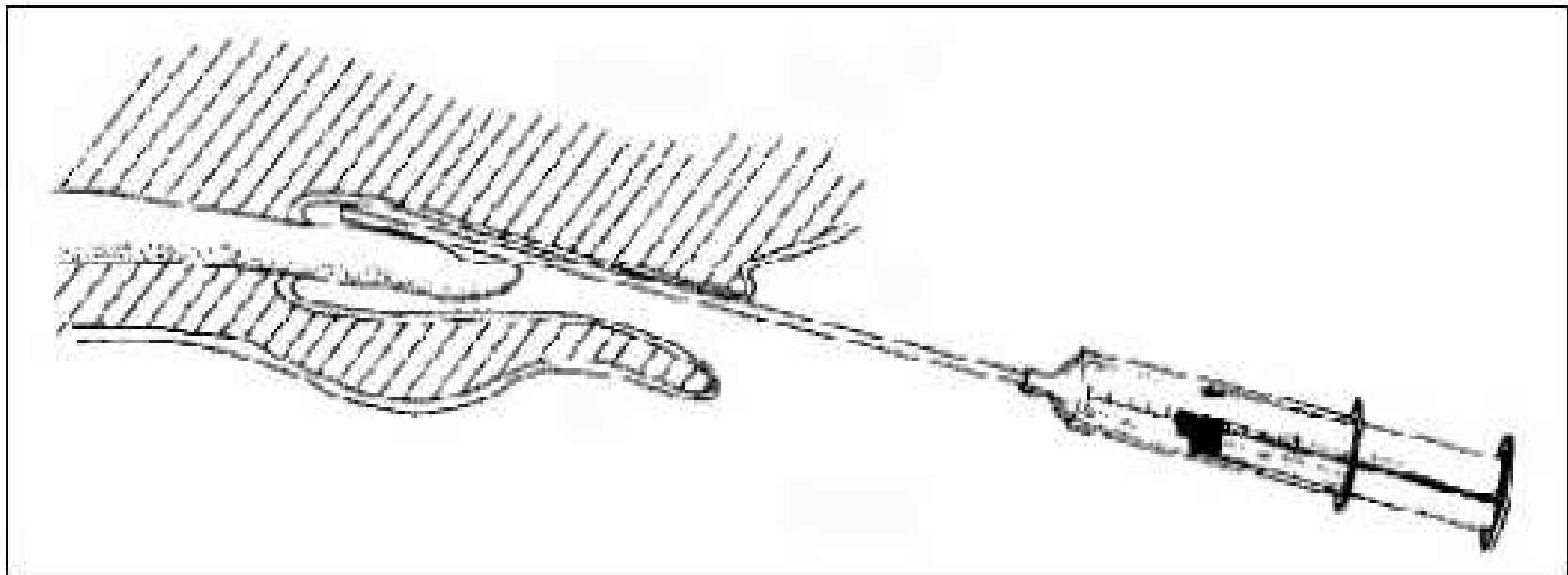
Bulls need to be sexually rested for 14 days prior to testing

Proper/adequate bull restraint is a must

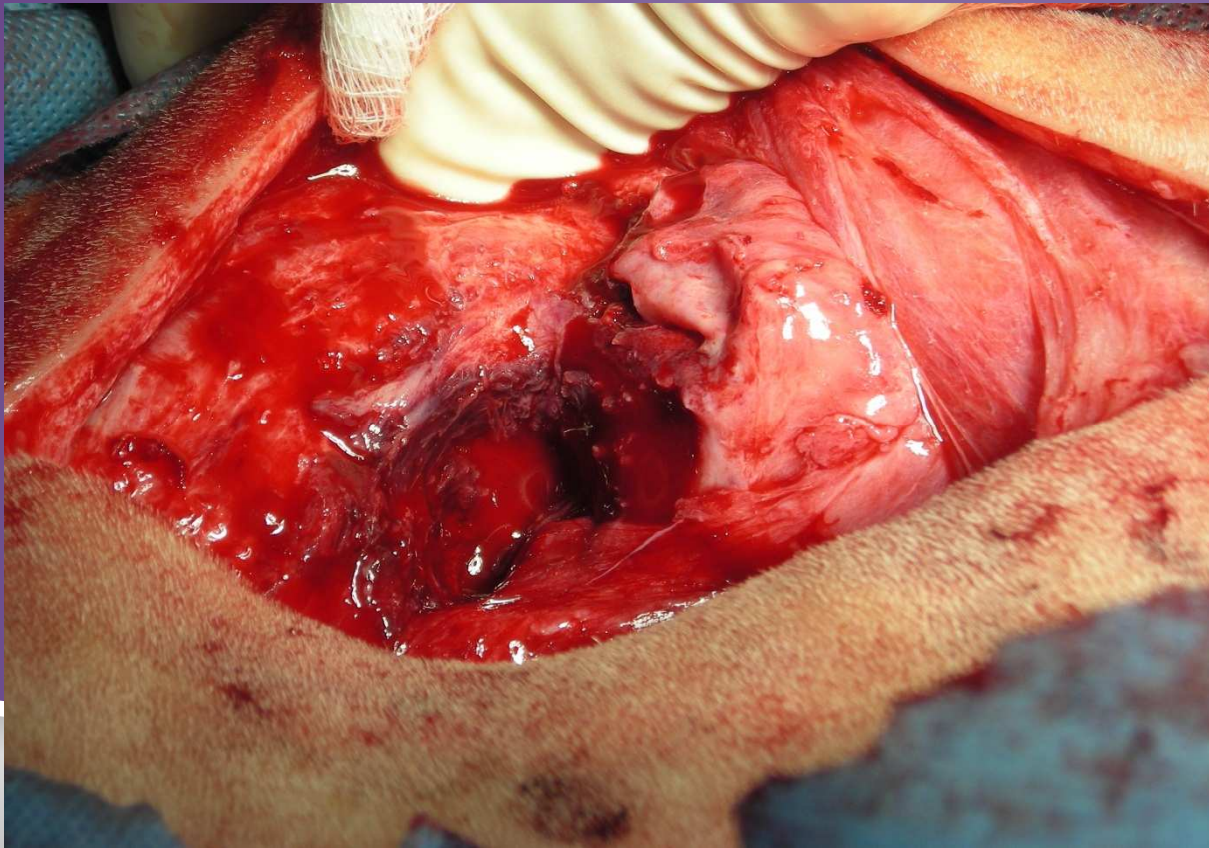


PREPUTIAL FORNIX PUNCTURE

Figure 1. Diagrammatic representation of sampling method in the bull. (Adapted from BonDurant, R.H. Diagnosis, Treatment and Control of Bovine Trichomoniasis. Compendium on Continuing Education for Veterinarians, 7(3): March 1985, S179-S187.)



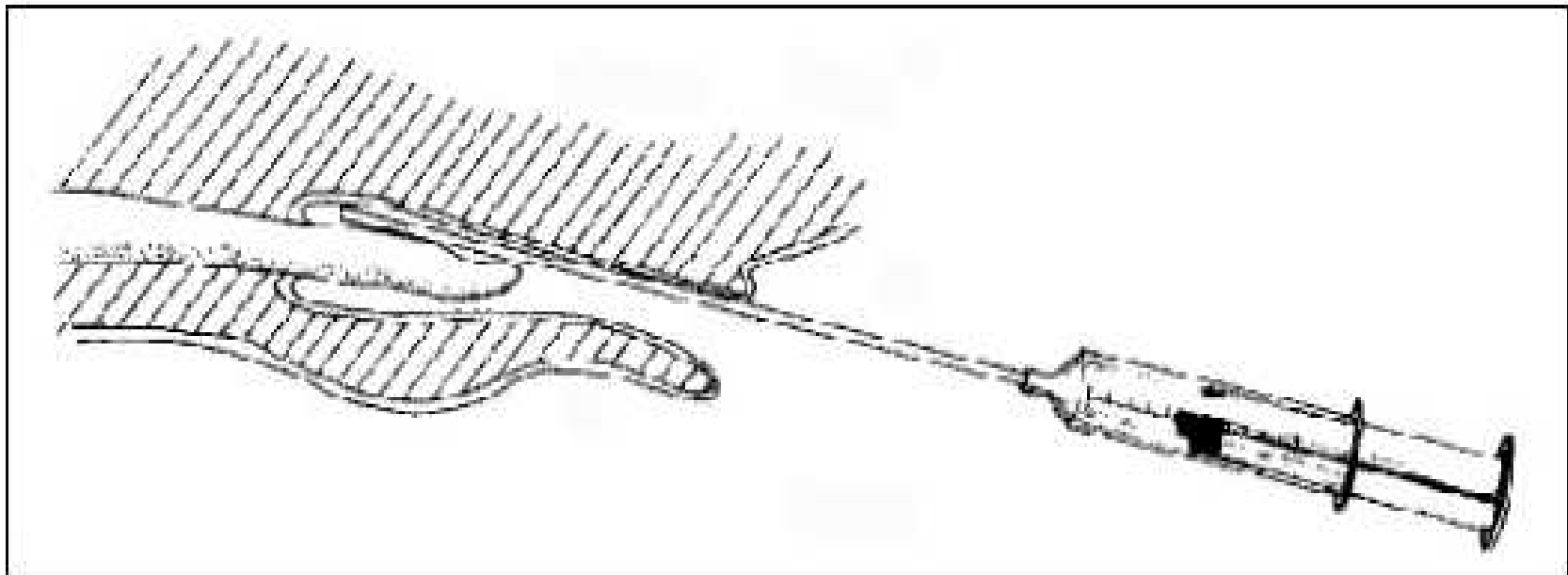
SAMPLING CAN BE HAZARDOUS



Bull and/or veterinarian injury can occur when bulls are not properly restrained

PREPUTIAL FORNIX PUNCTURE

Figure 1. Diagrammatic representation of sampling method in the bull. (Adapted from BonDurant, R.H. Diagnosis, Treatment and Control of Bovine Trichomoniasis. Compendium on Continuing Education for Veterinarians, 7(3): March 1985, S179-S187.)



Proper restraint or sedation is necessary



TRICH LABORATORY TEST

- ▶ PCR (polymerase chain reaction)
- ▶ Looks for Trich DNA
- ▶ Will be positive only for the venereal Trich
- ▶ Must arrive in the lab within 72 hours of collection



PREVENTING AND MANAGING TRICH: CURRENT RECOMMENDATIONS



TRICH PREVENTION

Strict biosecurity

Purchase only Trich tested, “virgin” bulls

Do not purchase used cows

Do not lease bulls

Maintain adequate fences



TRICH PREVENTION

Biosecurity is never perfect!

Maintain young bull battery

Cull all open cows and heifers

Trich test every bull once a year
(can be completed when semen checked)



TRICH PREVENTION

Avoid grazing on public lands

Multiple herds with multiple sires increases Trich infection risk

Utilize artificial insemination when practical

Set breeding season to 60-90 days

Long breeding seasons increase the spread of Trich and increase the potential to carry over carrier cows



TRICH MANAGEMENT: INFECTED HERD

Strict biosecurity

Notify neighbors about possible exposure

Purchase only Trich tested, “virgin” bulls

Do not purchase used cows

Do not lease bulls

Maintain adequate fences



TRICH MANAGEMENT: INFECTED HERD

Test all bulls every year

Cull all positive bulls

No legal treatment available

Decrease the bull to cow ratio

More bulls present = greater risk of infection

Reduce the average age of bull battery

Any age bull can carry Trich, but older bulls are at higher risk



TRICH MANAGEMENT: INFECTED HERD

Reduce breeding season to
90 to 120 days

Longer season compared to
non-infected herd because
fertility will be less compared
to non-infected herds



TRICH MANAGEMENT: INFECTED HERD

Preg check early: 70-90 days after bulls are taken out
Most pregnancies lost 50-70 days of gestation

Cull all open cows and heifers



TRICH MANAGEMENT: INFECTED HERD

Vaccinate all breeding age females

Remember vaccination probably does NOT prevent infection

Vaccinating in the fall for spring breeding is not effective

**#1 Advice: Use your veterinarians' expertise
for reproductive program design and advice**



TRICH MANAGEMENT/PREVENTION

Bovine Venereal Trichomoniasis

Author: Dr. David E. Bartlett

Published 1952

“Keep from breeding susceptible COWS to infected BULLS

“Keep from breeding susceptible BULLS to infected COWS



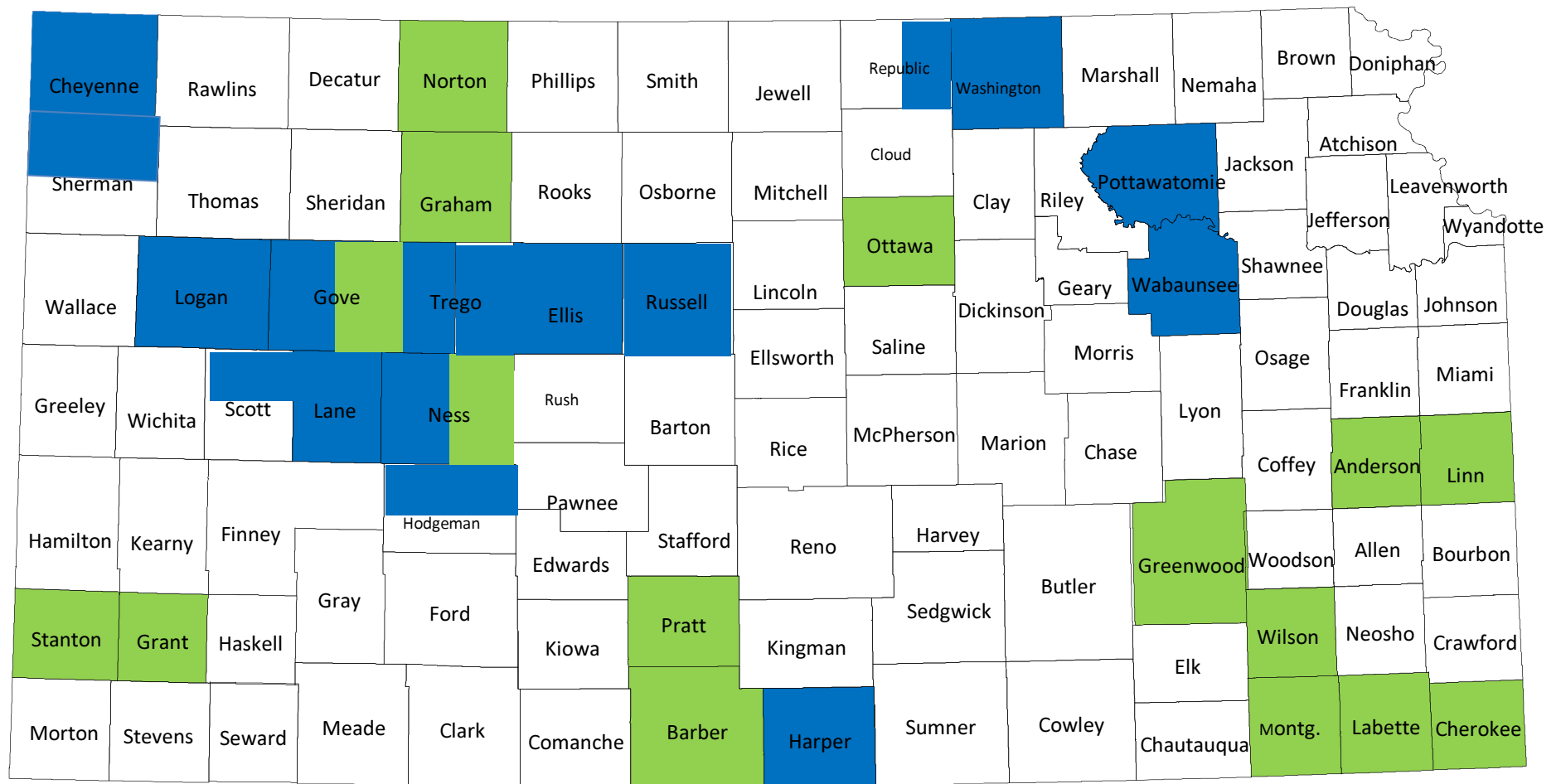


PROPOSED NEW KANSAS TRICH REGULATIONS

Dr. LewAnn Schneider
Dr. Justin Smith
Dr. Gerald Gibson

Kansas Department of Agriculture
Division of Animal Health

Trichomoniasis Affected Counties 2011-2012



2012 County with positive cases diagnosed

2011 County with positive cases diagnosed

KANSAS BULLS

All bulls in Kansas must be tested and be “certified negative” before change of ownership can occur if:

(Leased, private sale, public sale, trade, barter)

- ▶ Any non-virgin bull
- ▶ Any bull 19 months of age or older
- ▶ Any bull of unknown virginity status



Virgin bulls less than 25 months of age: no testing, certificate necessary

TRICH TEST REQUIREMENTS

Trich test must be completed within 60 days of importation or change of ownership within Kansas

Following the test, the producer shall ensure/state that no female contact has occurred

Test sample must be collected by an accredited veterinarian who has participated in training approved by the division of animal health

Recertification required every 5 years

TESTING REQUIREMENTS

“Certified negative” =

- Sample collected in an approved media
- Test completed at an AAVLD certified laboratory
 - Only KSVDL is certified in Kansas
- Sample collected by certified veterinarian
- Sample is found negative on one PCR

Owner certifies the bull has been sexually rested for at least 14 days before collection

FATE OF POSITIVE BULLS

Positive bulls shall be sold for slaughter

There will be no herd-quarantine



SALEBARN BULLS

Any non-virgin bull, bulls over 19 months of age, or unknown virginity status sold at a livestock market for **breeding purposes**

Will be quarantined at the market until the bull is certified
Trich negative

The livestock market must have adequate facilities to house and keep bulls separate from females during the quarantine period

SALEBARN BULLS

The livestock market facility must be approved for Trich quarantine by the Kansas Animal Health Department

Bulls will be retained at the livestock market at the owner's expense until certified Trich negative

SUMMARY

- ▶ Non-virgin bulls (any age)
- ▶ Bulls 19 months of age and older
- ▶ Bulls of un-known virginity status

Must have a negative Trich PCR completed within 60 days before change of ownership

Change of ownership:

Private sale, public sale, lease, trade, barter

Positive herds will not be quarantined

Sexual rest for at least 14 days must occur before sampling

Sampling for Trich can only be completed by certified veterinarian

No requirements on the female side at this time