

Authorized Personnel Program

Module 2

- *Brucellosis*
- *Bovine Tuberculosis*
- *Trichomoniasis*
- *Scabies and Mange Mites*



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Texas Brucellosis Eradication Program



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Brucella species



Brucella abortus
Cattle, Bison & Elk



Brucella melitensis
Goats



Brucella suis
Swine, Reindeer & Cattle



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Texas Status

- TX Achieves Brucellosis Class Free Status
February 2008
- USDA lifts high risk status
February 2013





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Vaccination

- Strain 19
 - (Not used since 1996)
- RB-51
 - Tattoo – “R, shield, # yr”
 - Example RV0 for 2020
 - Approximately 250,000 @yr.
- 14 western states require female cattle entering to be vaccinated
- *Brucella abortus* RB 51 Bangs vaccine by Colorado Serum available from major veterinary distributors





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Changes in National Surveillance Bovine Brucellosis

- All states in U.S. considered brucellosis free by USDA, with Designated Surveillance Areas around greater Yellowstone area (GYA) in parts of ID, WY, and MT
- Slaughter surveillance in U.S. went from a reduction testing of 1.9 million slaughter cattle per year to a near discontinuation in 2019
- Texas tested 3 million samples alone, in 2011; currently no slaughter surveillance is done at Federally inspected plants, only state inspected plants in TX



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Changes in TX Surveillance Bovine Brucellosis

- Mandatory testing for change of ownership suspended in 2011 due to budget concerns during drought
- State slaughter plants continue to test
- Approximately 100 brucellosis free herds exist
- Diagnostic testing by veterinarians for movement requirements





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Brucellosis Threats

- Importation from GYA
 - Incubating cow, latently infected heifers
- Cattle smuggled in from Mexico or cattle walking across the border in remote areas
- Undetected herd already in the state
 - Reduced surveillance will delay detection
- *Brucella suis* complicates the diagnostic picture and raises zoonotic concern



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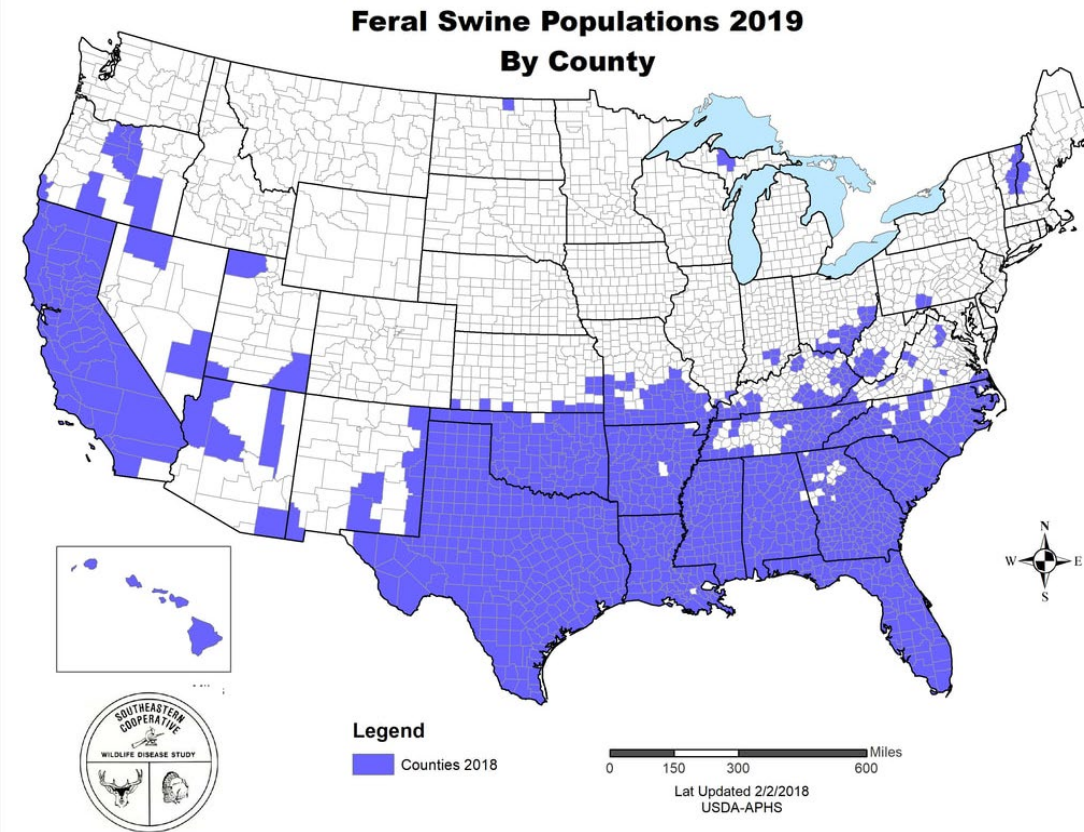
Brucellosis Threats

- Retest adults 60-120 days after entry at no charge
- Heifers must be retested after first calf
- Stocker heifers waived from retest upon entry into feedlots



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Swine brucellosis also is transmissible to humans, horses & cattle!



Feral swine population in the U.S.



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Beware of Swine Brucellosis!

- Brucellosis-infected feral swine are a threat to cattle
- 66 *B. suis* infected cattle to date in last 6 years including 1 dairy infected three times
- Texas still averages 100 test positive cattle per year
- Herd tests may be necessary to rule out *Brucella abortus*





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Feral Swine Holding Facility

- Regulated by TAHC
- 99 in Texas
- Allows sale of live feral swine
- Terminal facility
- Two slaughter buyers in Texas
 - Frontier – Fort Worth
 - Southern Wild Game – Devine
- Inspected monthly
- Hogs over 60 lbs. marketed as “wild boar”





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Fistulous Withers/Poll Evil





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Fistulous Withers/Poll Evil

- Inflammation of the supraspinous bursa
- May swell and rupture
- Exudative process
- May heal over and re-rupture
- Difficult to treat
- Difficult to culture
- Old horses of concern
 - 30 years ago TX had 2000 infected herds
- Public Health concern!
- Always consider a brucella test

Texas Tuberculosis Eradication Program



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Characteristics of Bovine TB Infection

- Bacterial
- Chronic
- Slowly progressive tubercles
- Usually clinically inapparent
- Public health impact
- Meat condemnation
- Human infection





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TB in Texas

- Texas is classified as TB Free by USDA
- There are still lesioned animals found routinely at slaughter (10-15 each yr)
 - Primarily Mexican origin feeder cattle
- Tracing these animals is time consuming and costly
- Work on one trace took nearly two years to complete



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TB Threats to Texas

- Mexican feeder cattle (1 million/yr)
- Mexico exhibition (rodeo) cattle (5,000/yr)
- U.S. dairy cattle
- Dairy calf rearing facilities





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Mexican Origin Cattle “M-branded”

- Changed to 4 inch M only
- Right hip for slaughter animals and shoulder for breeding animals





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Mexican Origin Event Cattle

- All Mexico origin cattle must have an M brand on right hip
- M-branded rodeo cattle must call TAHC to get entry permit
- Event cattle entering directly from Mexico must have a post-entry test performed by a Texas veterinarian 60 days after entry
- Event cattle tested annually after initial entry test



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Mexican Origin Event Cattle

- M-brands from other states must have proof of negative test within 12 months at all times
- M-brands presented for sale at a market can only be sold to slaughter or for terminal feeding
- TAHC inspectors check papers on M-brands at rodeos, markets and feedyards



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Risky Practice

- Close proximity of Mexican-origin steers on pastures with breeding cattle





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Risky Practice

- Co-mingling Mexican-origin steers with replacement cattle or breeding cattle in feed yards.
- Texas Cattle Feeders Association (TCFA) developed voluntary guidelines for feeders.





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Dairy Calf Ranch Inspections

- Prior trouble with TB epi traces involving calf ranches
- Establishes recordkeeping requirements for both TB testing of calves and records on feed milk sources
- Calf Ranch = Greater than 10 calves





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Dairy Calf Ranch Inspections

- High likelihood spread of disease
- Likely co-mingling of animals from different sources
- Smaller operators may be transient
- Dairy Industry support in Texas





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Dairy Calf Ranch Inspections

- Performed by field inspectors
- Monthly at first until relationship developed
- All entry permits are verified
- High risk designation will increase inspection frequency
- Regional Veterinarian reviews inspection form for risk factors





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Calf Ranch Risk Factors

- Rule violation – no ID, entry violation, etc...
- Feeding unpasteurized waste milk/colostrum or no records on milk sources
- Co-mingling or presence of M-brands on facility
- Inability to link tags to source or incomplete record keeping (5yrs)



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Calf Ranch Risk Factors

- Out-of-state or unknown sources
- Weak biosecurity processes – hutches, bottles, general health issues
- Unsanitary practices
- Other factors based on veterinary science or sound epidemiological principles



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TX TB Mitigation Processes

- Mandatory ID prior to movement
- Mandatory TB test for all dairy breeding animals at time of entry (except from Accredited Free herds)
- Calves less than 2 months enter under permit to be tested at 2 months of age





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TX TB Mitigation Processes

- Voluntary relationship with feeder industry to discourage feeders who may have M-brands fence-to-fence with breeding animals
- Calf Ranch Survey process
- Tested all TX dairies in 2004-2005
- Quarantined Calf Ranch Process development



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El Paso Area TB Surveillance

- HB 1081 – requires TAHC assessed TB in the Movement Restriction Zone established in 2006
- Surveillance testing ongoing in wildlife
 - Coyotes
 - Cervids
 - Feral swine
- All dairy cattle depopulated





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Primary Diagnostic Tests for TB

- Caudal Fold Tuberculin (CFT) Test
- Single Cervid Tuberculin (SCT) Test (Deer)
- Cervid StatPak now available for certain species
- Comparative Cervical Tuberculin (CCT) Test
- G-Interferon Test (BOVIGAM)
- Idexx ELISA approved, use limited



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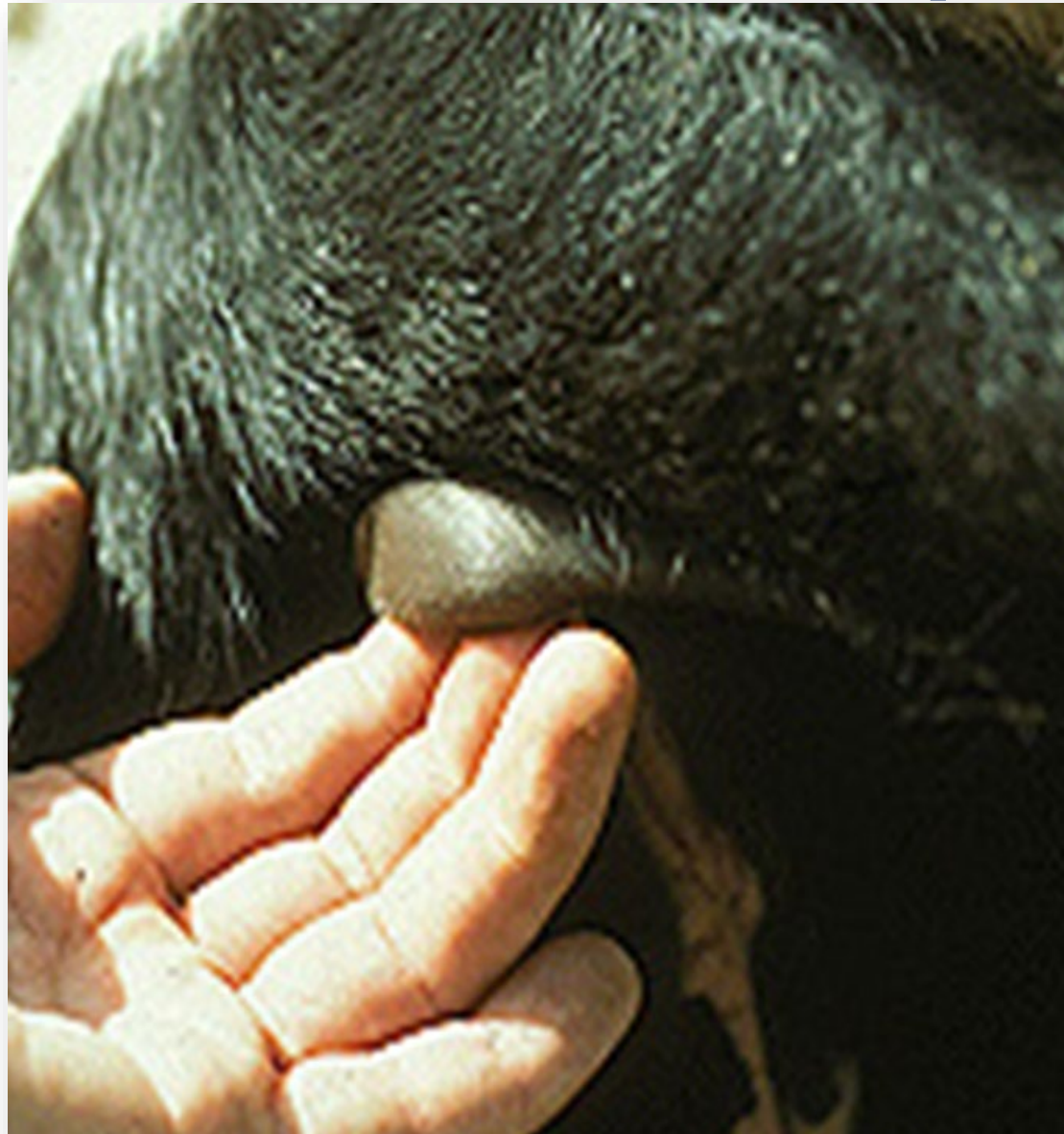
Caudal Fold Test - Intradermal





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Caudal Fold Test - Response

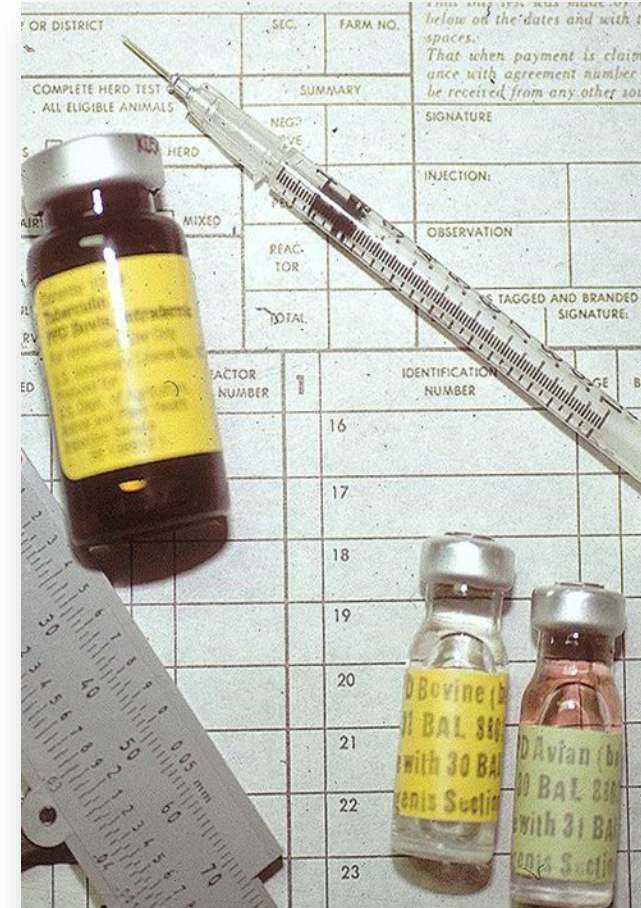




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Tuberculin Considerations

- Do not freeze
- Time interval for observation is 72 hours +/- 6 hours
- Reader biases exist, read your own injections
- Heat stable but protect from heat and sunlight
- Intradermal injection
- Order from National Veterinary Services Laboratory (NVSL) in Ames, IA
 - [Link to Order](#)





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Tuberculin Considerations

- Tuberculin injection
- Must use:
 - 26-gauge 3/8" needle
 - Tuberculin syringe
 - Intradermal injections
- “Bleb” after injection is quality control
- 1% false positive rate expected





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Gamma Interferon Test

- Coming back on limited basis
 - 100 samples per week at NVSL
 - Must be prescheduled
- Collect blood sample < 30 days after CFT test
- Green top tube - whole blood with heparin
- Do NOT chill
- Must arrive in lab < 24 hours post-collection



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Disposition of Test Positive Cattle

- CCT Test
 - Reactors – directly to Necropsy
 - Suspects – epidemiologist looks at herd risk to make decision
- Gamma Interferon Test
 - Reactors – directly to Necropsy
 - Suspects - retest 7-14 days after initial gIFN
 - Necropsy if positive on second test



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Cattle TB Public Health Concern



TB infections are generally detected at slaughter



Texas Trichomoniasis Control Program



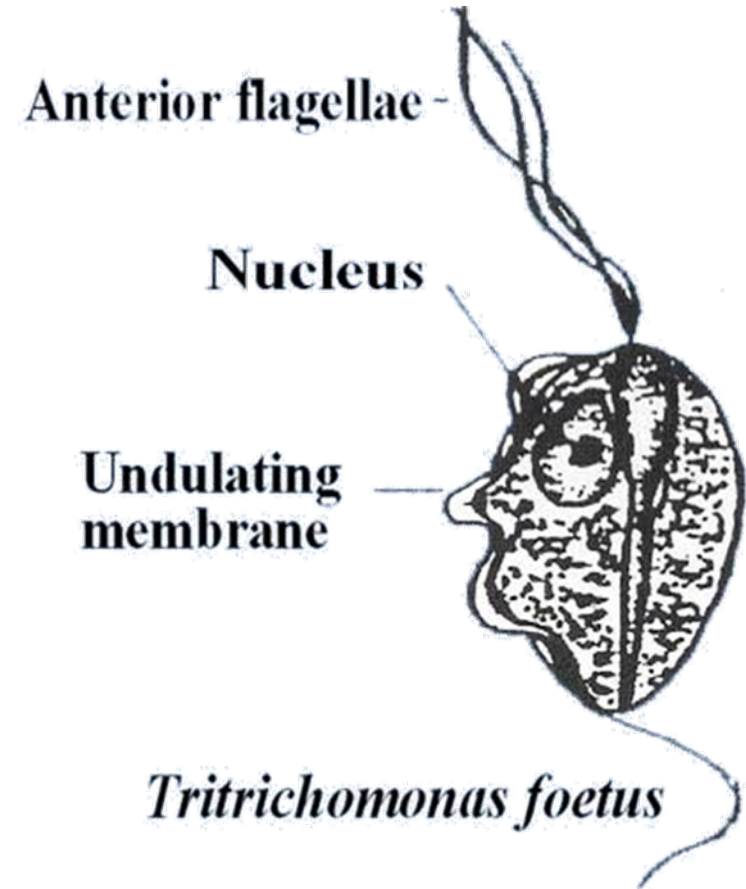
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Causative Organism

- *Tritrichomonas foetus*:
- A protozoan – mobile, complex, single-celled organism
- About the size of a sperm





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Bovine Trichomoniasis in Females

- Repeat breeding
- Extended calving season
- Early abortion (too early to find a fetus)
- Occasional late-term abortions
- High percentage of open cows at pregnancy check (20-50 percent or more)
- Pyometra possible (about 2 percent of cows)



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Bovine Trichomoniasis in Males

- Infection does not affect semen quality or behavior
- Bulls are an asymptomatic carrier
- Infected bulls serve as a reservoir of infection in a herd





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Texas Trichomoniasis Program

- Started January 1, 2010
- Industry-driven
- Took best practices from other states
- Control concept (not eradication)
- Veterinarians must be certified & recertified every five years
- Official labs will run regulatory tests



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Texas Trichomoniasis Regulations

- ID for breeding bulls
 - Breeding bulls must be officially identified prior to being certified as a virgin bull and
 - Prior to sample collection for Trich testing
 - Metal ear tag (NUES -National Uniform Eartagging System)
 - Official 840 Radio Frequency ID device (RFID) with or without a bangle tag
 - Official individual animal breed registry brand *
 - Official individual animal breed registry tattoo*
 - *May not be acceptable for interstate movement depending on state of destination; breed registry papers must be attached



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Texas Trichomoniasis Regulations

- Exhibition, Competition & Rodeo Bulls
 - Bulls 12 months or older may enter WITHOUT a Trichomoniasis test provided they:
 1. Have an entry permit
 2. Have a CVI
 3. Are NOT co-mingled with female cattle or used for breeding
 - Must be tested if staying over 60 days or change status to a breeding bull



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Movement Requirements

- Virgin Status Certificate accepted up to 18 for intrastate cattle only
 - Valid for 60 days
 - Bulls stay separated from females after issuing certificate
 - Age verification by breed registry papers
 - Bulls from breeding collection facility allowed virgins for up to 30 months of age (certified by breeder and veterinarian that facility does not allow for any female contact)
 - Veterinarian beware – reports of positive “virgins”!



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Movement Requirements

- Bulls required to be tested if sold, leased, exchanged, gifted or change of possession for breeding purposes
 - 1 negative PCR test or
 - 3 negative culture tests
 - intrastate only
 - not less than 7 days apart
 - Test valid for 60 days
 - Bulls stay separated from females after testing



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Movement Requirements

- Untested bulls allowed to move to the following locations:
 - Slaughter
 - Trich certified feedlot prior to slaughter
 - Livestock auction
 - Sold under a hold order
 - Trich test within 7 days
 - No female exposure
 - Other physical location under a hold order for testing



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Official Forms

- 2 to 3 signatures needed
 - Breeder/representative
 - Accredited vet (if bulls are >18 months of age)
 - Consignor (if applicable)



Texas Animal Health Commission Trichomoniasis Virgin Status Certificate

Clear Form

The animals individually identified with an official identification described below are virgin male bovine under 18 months of age or are between 18 and 30 months of age and breeder's veterinarian certifies that the breeder has sufficient management practices and facilities to ensure animals are virgins (veterinarian signature required). Only bulls located in Texas can be certified as virgin between 18 and 30 months of age. This extension of age does not apply to out of state bulls entering Texas.

The certification by the breeder is valid for sixty (60) days and may be transferred within that timeframe with an original signature of the consignor if there is no contact between the bull(s) and female cattle.

	OFFICIAL IDENTIFICATION NUMBERS	AGE	BREED
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Original Breeder/Representative			
Address	Printed Name	Signature	Date
Accredited Veterinarian			
Printed Name		Signature	Date
Consignor			
Printed Name		Signature	Date



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Positive Test Procedures

- One positive test = infected bull
- Retest must be submitted in writing by owner within 5 days of a positive test result
- Veterinarian should consult with TAHC upon receipt (within 48 hours) of positive test results
- Infected bulls & non-virgin bulls on premises placed under hold order
- Positive bulls direct to slaughter or to livestock market for sale to slaughter under a VS 1-27 permit



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Positive Test Procedures

- Remaining bulls need 2 additional culture or 1 additional PCR negative tests
- No less than 7 days from last test
- Within 60 days of the initial positive diagnostic test
- No female exposure during this time
- Bulls on adjacent property to the positive diagnosis must be tested within 30 days of the removal of the positive animal

Scabies and Mange Mites



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Scabies and Mange Mites

- Scabies and Mange Mites reportable to Texas Animal Health Commission:
 - Psoroptic Scabies
 - Sarcoptic Scabies
 - Chorioptic Mange





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Scabies and Mange Mites

- Psoroptic Scabies
 - Trumpet sucker on each leg
 - Legs have 3 segments
 - Head is pointed
 - Cattle, horses, sheep
 - Important in sheep – sheep scab





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Scabies and Mange Mites

- Sarcoptic Scabies
 - Wiskers on legs
 - Rounded heads
 - Cattle, pigs, sheep
 - Widespread in pigs





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Scabies and Mange Mites

- Chorioptic Mange
 - Cupped sucker on each leg
 - Legs unsegmented
 - Head rounded
 - Housed dairy cows





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Scabies and Mange Mites

- Considerations:
 - Request for CVI on an infested or exposed show animal
 - Request for treatment on an infested or exposed show animal
 - Be aware of treatment rules and duration of treatment
 - Seasonal nature (lesions may improve in summer)