Authorized Personnel Program Module 4

- Diseases of Swine and Equine

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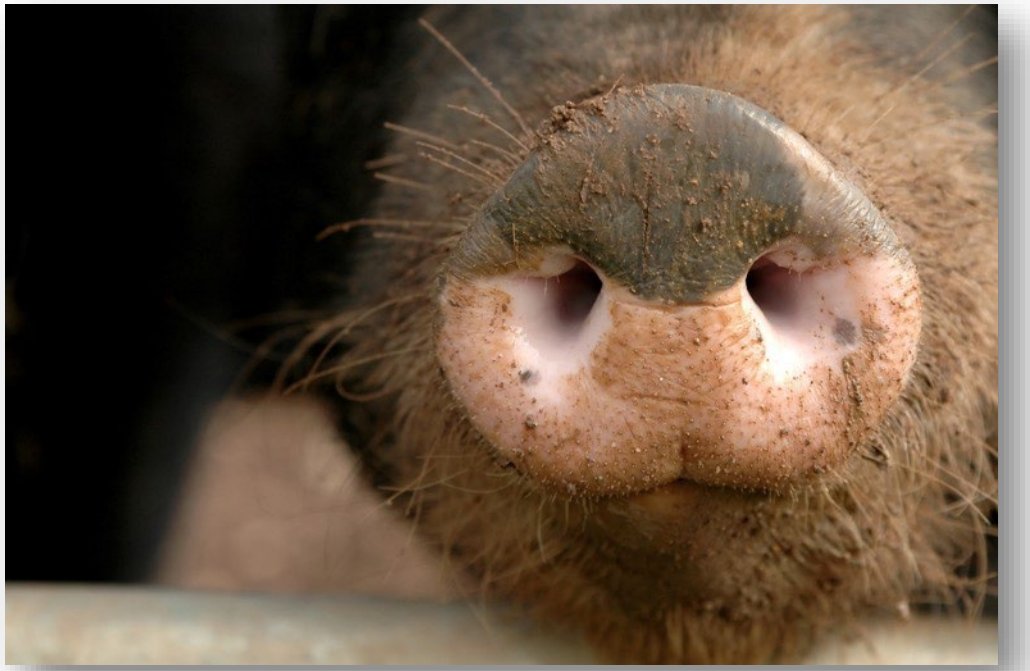
Texas Swine Disease Program



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Definitions for Swine Herds

- Commercial production swine:
  - Swine continuously managed in adequate facilities
  - Biosecurity practices prevent exposure to transitional or feral swine
- Transitional production swine:
  - Show hogs/small farms
  - Swine with reasonable opportunity for exposure to feral swine OR captive feral swine
- Feral or wild swine:
  - Free-roaming swine

Swine Diseases

- Brucellosis - Caused by bacterium, *Brucella suis*
- Pseudorabies - Caused by *Herpesvirus suis*

Texas Swine Status

- Brucellosis
  - Commercial Herds – no
  - Transitional Herds – intermittently
  - Feral Swine – yes
- Pseudorabies
  - Commercial Herds – no
  - Transitional Herds – intermittently
  - Feral Swine – yes

Feral Swine: Disease Reservoir

- Brucellosis 10% infected
- Pseudorabies 20% infected
- Foreign Animal Diseases risks
  - Classical Swine Fever (Hog Cholera)
  - African Swine Fever
  - Foot-and-Mouth Disease

Beware of Swine Brucellosis!

- Brucellosis-infected feral swine are a threat to cattle!
- Herd tests may be necessary to rule out *Brucella abortus*

Swine Disease Surveillance in TX

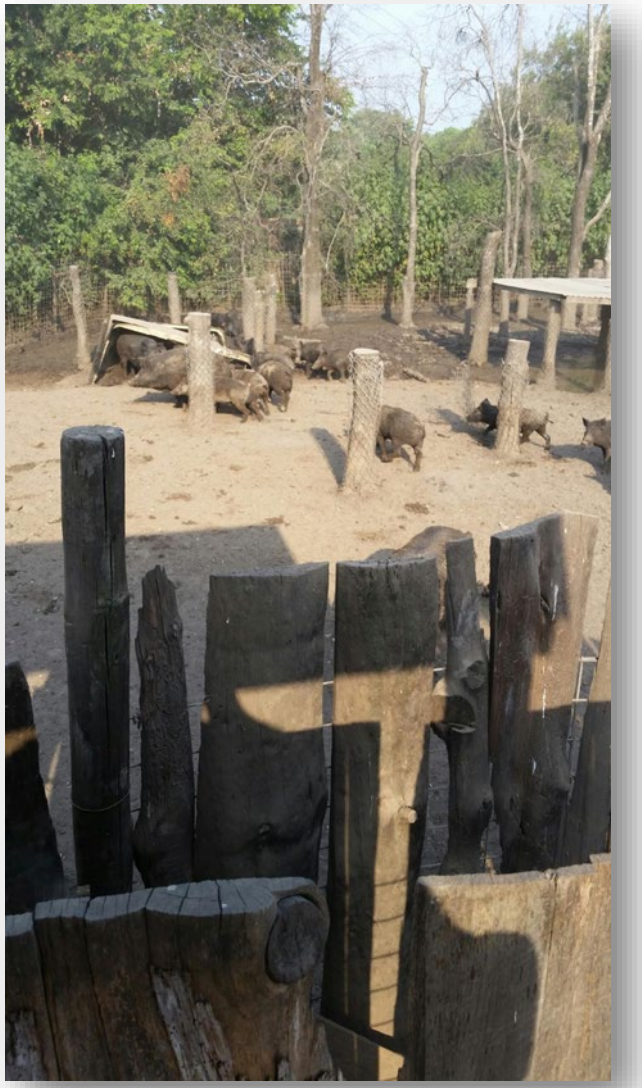
- 2019 fiscal year: 8,955 Brucellosis & 7,495 Pseudorabies tests
- Waste-food feeder herd tests
- High risk herd tests – exposure to feral swine
- Status herd tests
- Private tests (sales, exhibition)
- Slaughter tests
  - Sows and boars tested
- Markets tests
  - Sows and boars tested
  - Feral swine not allowed to be sold at markets

Controlling Live Feral Swine in TX

- Holding Facilities
- Hunting Preserves

Approved Holding Facilities

- Operator applies with TAHC
- No fee, but TAHC inspection required
- Facility constructed to prevent escape of feral swine
- > 200 yards from domestic swine
- Records must be maintained on animals in/out
- “Escape” or release is a violation of the Rule



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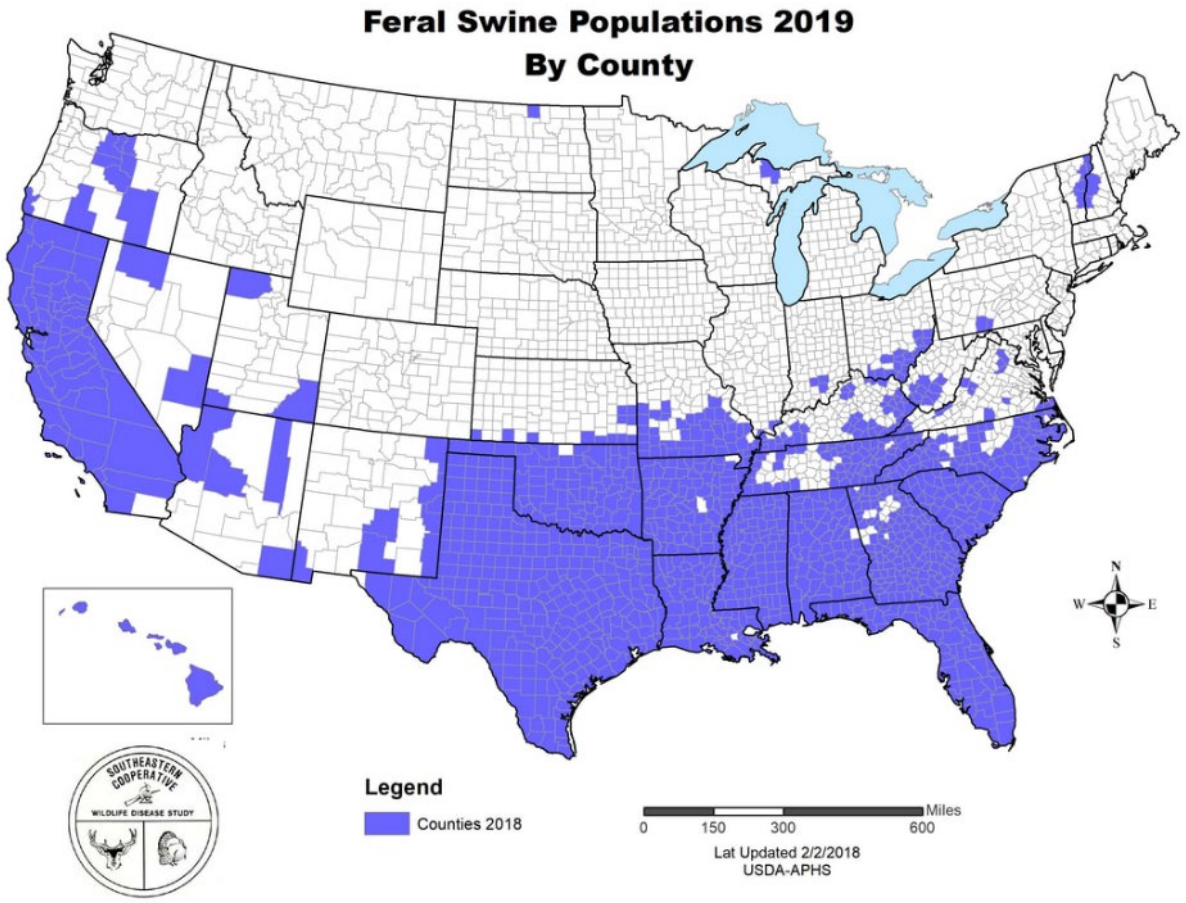
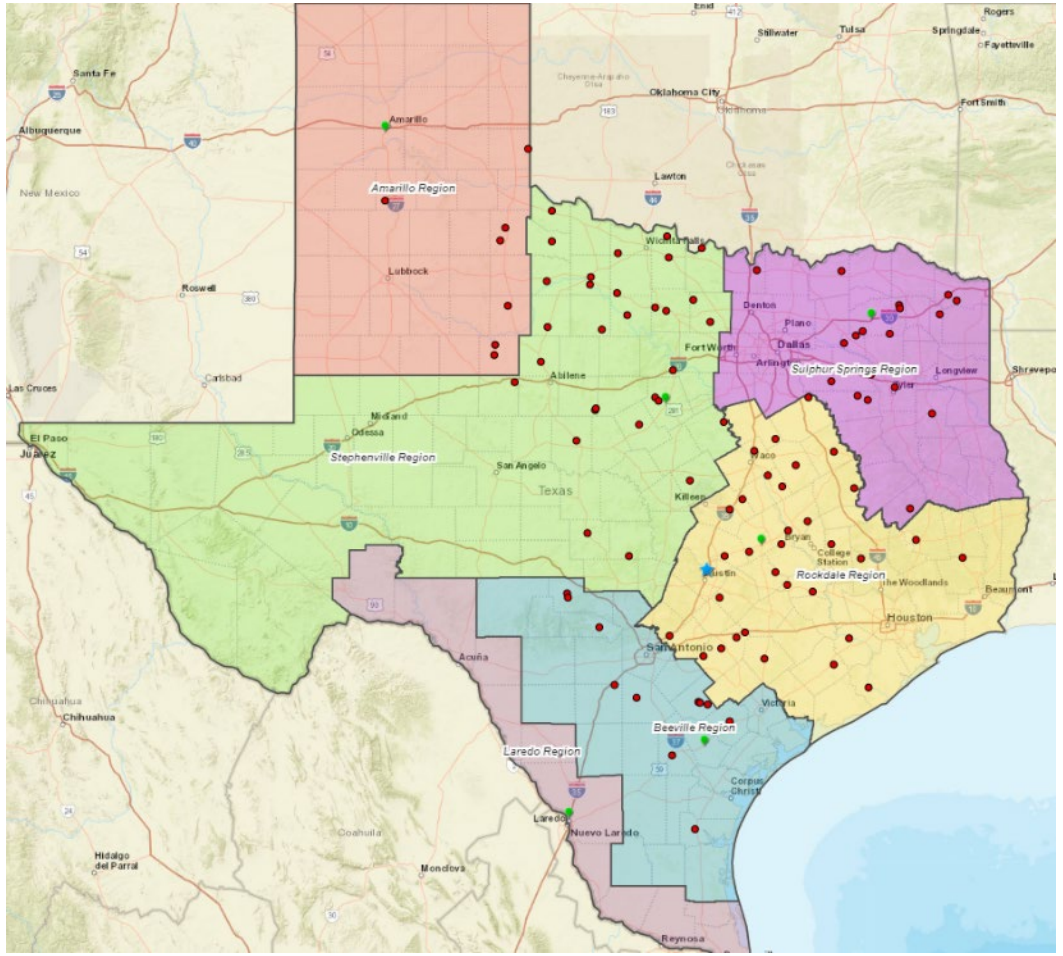
Approved Holding Facilities

Feral hog approved holding facilities are constructed to prevent escape.
(Photo courtesy Jared Timmons, Texas A&M AgriLife Extension Service)

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



Feral Swine Facilities in Texas



Authorized Hunting Preserves

- Operator is to apply with TAHC
- No fee, but TAHC inspection required
- Only boars or barrows may enter
- ID and swine-proof fencing required
- Valid TPWD Hunting Lease License required
- Records must be maintained on animals in/out
- “Escape” or release is a violation of the Rule

Swine Enteric Coronavirus Diseases (SECD)

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Porcine Epidemic Diarrhea Virus (PEDv)

- Identified in U.S. by National Veterinary Services Laboratory on April 2013
- Corona virus related to transmissible gastroenteritis (TGE) in pigs
- Likely came to US from China
- Within one year killed approximately 7,000,000 pigs
- Primarily a disease of commercial swine, severe in piglets

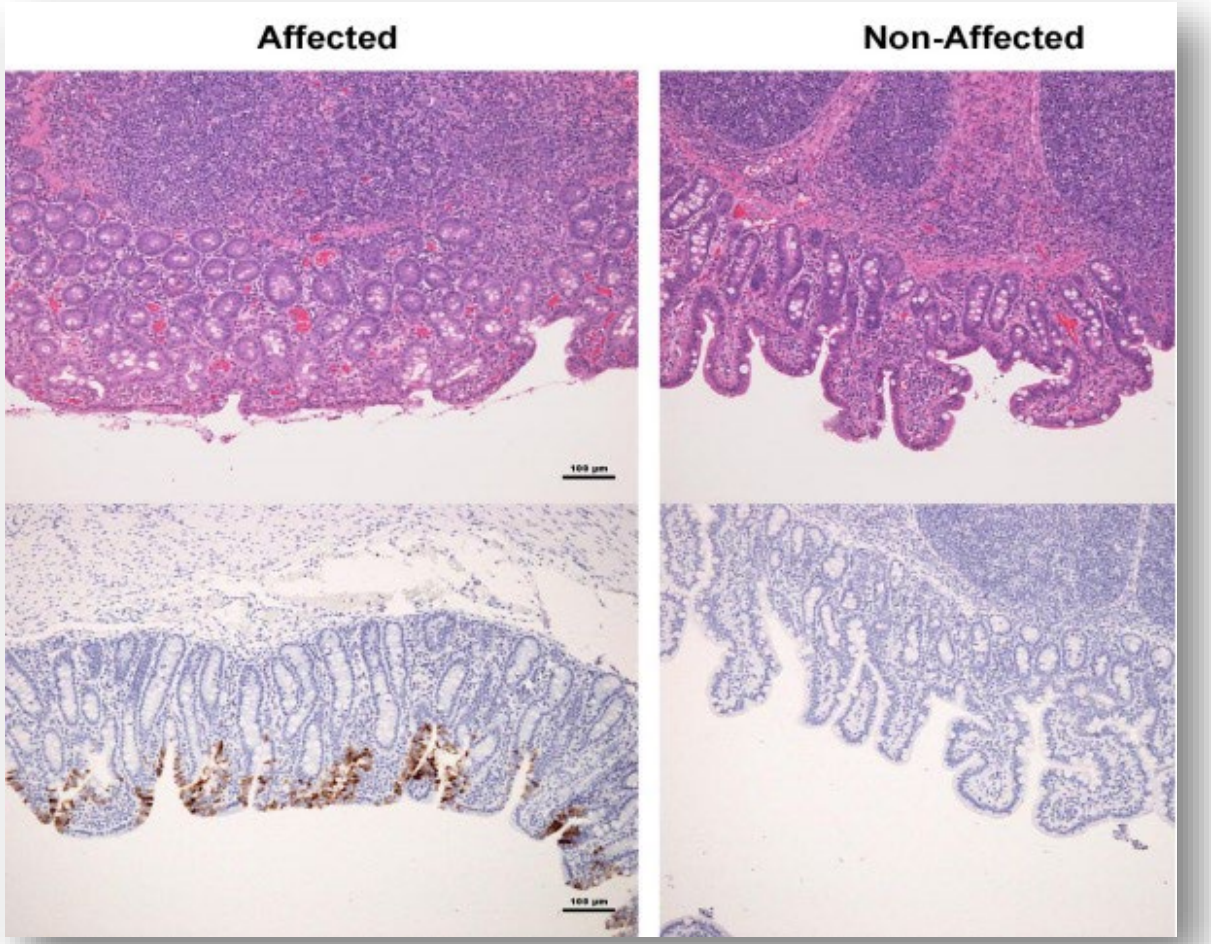
Swine Delta Coronavirus (PDCoV)

- First SDCv diagnosis in US in January 2014
- Causes diarrhea and vomiting
- 50-100% mortality of infected piglets
- 99% nucleotide identity to strains detected in Hong Kong in 2012
- While adult pigs can become infected, mortality is low
- Clinically indistinguishable from transmissible gastroenteritis (TGE)

Swine Enteric Coronavirus Diseases (SECD)

- Not a zoonotic disease
- Is not a food safety concern
- Mode of transmission is fecal-oral; however, contaminated personnel, equipment or other fomites may introduce SDCv into a susceptible herd
- No vector or reservoir has been implicated in its spread
- Economic loss occurs directly in the form of death and production loss in swine
- Further monetary loss occurs because of the cost of biosecurity
- Cross protection between coronaviruses does not occur

Swine Enteric Coronavirus Diseases (SECD)



Images by Dr. Jerome Nietfeld

Swine Enteric Coronavirus Diseases (SECD)

- June 5, 2014 – required reporting and establishes new disease program; Required Herd Management Plan for infected premises
  - Basic information – class, type, location
  - Biosecurity – visitors/vehicles; employees; livestock transport
  - Cleaning and disinfecting
  - Diagnostic testing/monitoring
  - Swine movement records
  - Provided reimbursement program for producers and veterinarians

Swine Enteric Coronavirus Diseases (SECD)

- Federal Order rescinded, effective March 6, 2018
  - Although SECD is now considered widespread, there's a better understanding of how to manage it.
  - The swine industry is willing and capable of working with its producers and veterinarians to address SECD without Federal assistance.

Role of Biosecurity in Prevention of PED

Role of Biosecurity in Prevention of PED

- Bio-exclusion
  - Keeping infectious organisms from entering a population
- Bio-containment
  - Keeping infectious organisms from leaving a population

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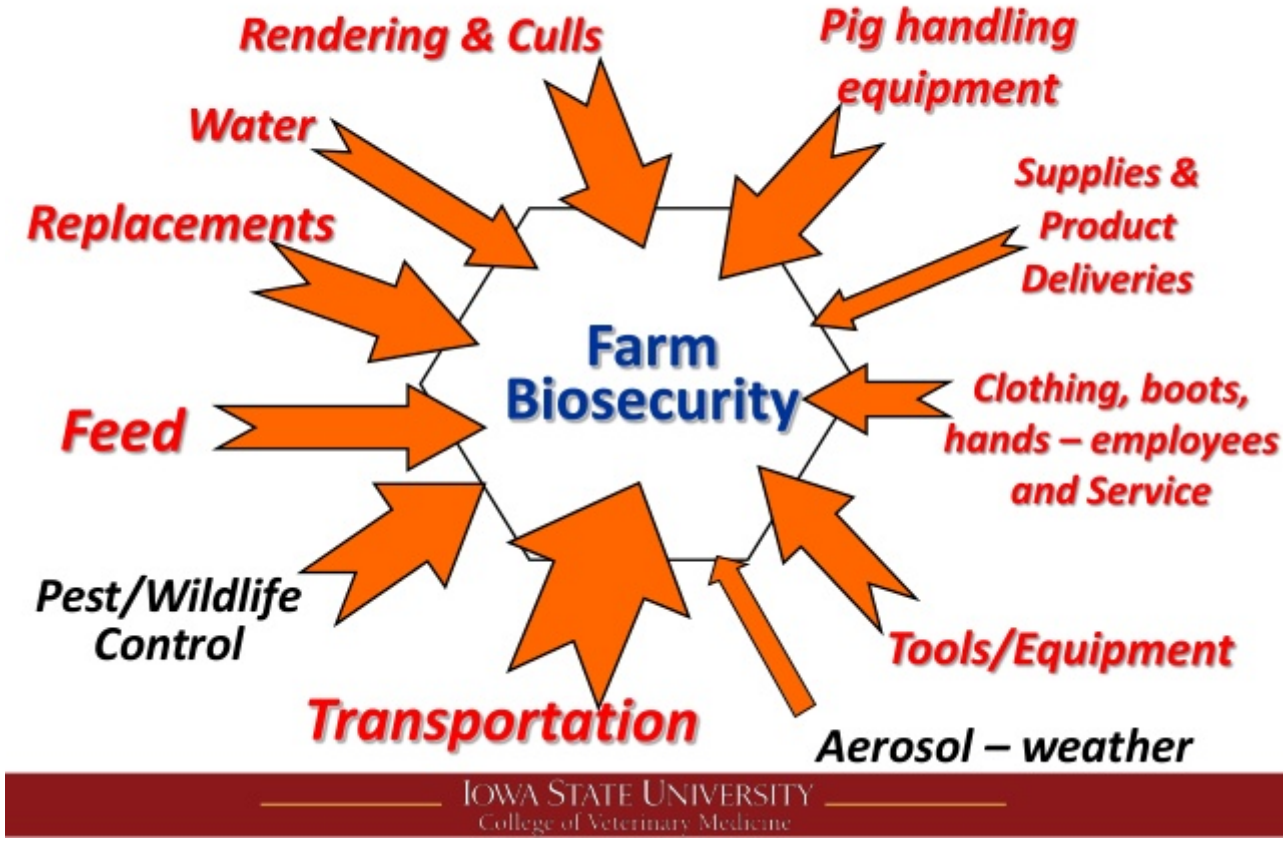
Bio-Exclusion Considerations



Bio-Exclusion Consideration

- Basically anything that has been in contact with pig feces is a source of infection
- Strict enforcement of vehicular and pedestrian traffic onto the farm
- Clean and disinfect all equipment that could serve as a means of transmission
- Disposable coveralls, gloves, and foot covers

BIOSECURITY IS THE KEY TO PREVENTION!

Swine Entry Requirement

- Effective February 7, 2014, CVIs accompanying non-commercial hogs entering Texas for purposes other than immediate slaughter require the following statement from the issuing veterinarian:

- "*To the best of my knowledge, swine represented on this certificate have not originated from a premises known to be affected Novel Swine Enteric Coronavirus Disease(s) (SECD), and have not been exposed to SECD within the last 30 days*."

Texas Equine Health Programs

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TAHC Equine Programs

- EIA
- Equine Piroplasmosis
- Equine Viral Arteritis (EVA)
- Equine Herpes Virus-1 (EHV-1)
- Vesicular Stomatitis Virus

Equine Infectious Anemia (EIA)

Lentivirus

- Virus is found free in the plasma or cell associated, principally in monocytes and macrophages of infected animals
- Mechanical transmission by biting flies
- Readily transmitted iatrogenically through use of blood-contaminated syringes, needles, or surgical equipment, or by transfusion of infective blood or blood products

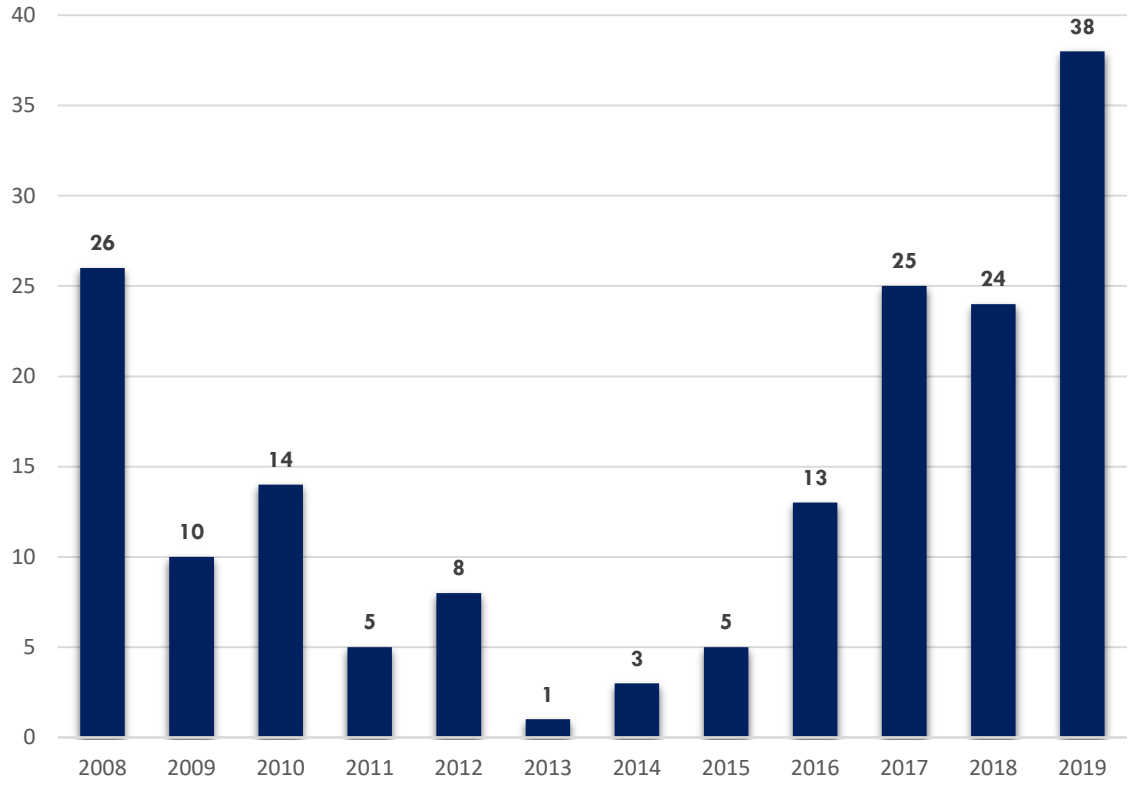
Negative EIA Test Required Within Previous 12 Months For:

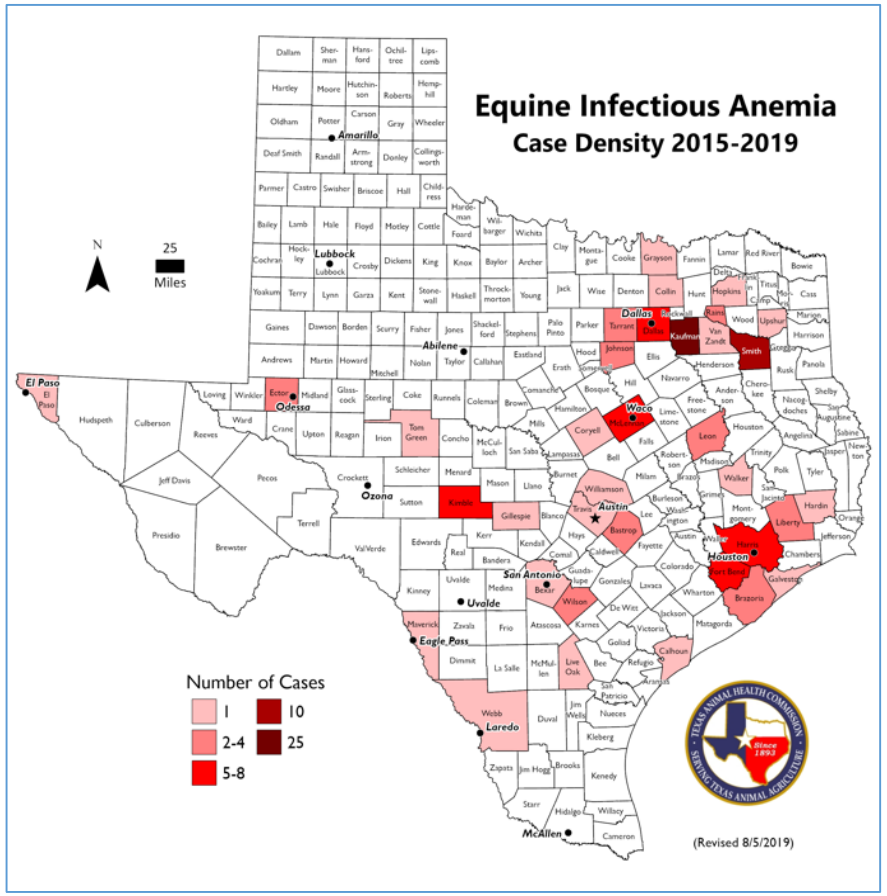
- Transfer of ownership
- Interstate movement
- Trail rides
- Shows, fairs, rodeos
- Public trails – state parks

Negative EIA Test Required Within Previous 12 Months For:

- Equine in boarding stables
- Breeding farms
- Training farms
- Race tracks
- Exposed horses < 200 yards apart

EIA Cases Per Year





Unless Euthanized Within 10 Days, EIA-Infected Equine are Permanently Identified on the Left Shoulder With "74-A"

29 horses are under permanent quarantine and isolated from other horses in TX

Piroplasmosis

Protozoa – *Babesia caballi* or *Theileria equi*

- Blood-borne, can be mild or acute, depending on virulence
- Mechanical transmission by ticks
- Readily transmitted iatrogenically through use of blood-contaminated syringes, needles, or surgical equipment, or by transfusion of infective blood or blood products

Equine Piroplasmosis

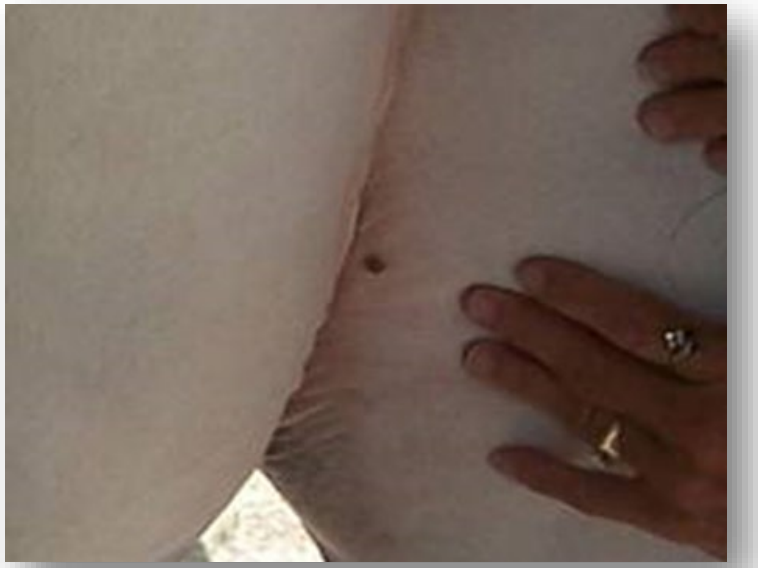
Can affect:

- Horses
- Donkeys
- Mules
- Zebra

- Equine Piroplasmosis is NOT endemic to the U.S., Australia, Canada, England, Iceland, Ireland, and Japan
- Found in Africa, the Caribbean (including Puerto Rico), Central and South America, Middle East, and Eastern and Southern Europe

Transmission

- Ticks are important vectors
  - 12 different species
- Mechanical transmission
  - Blood transfusions
  - Shared syringes
  - Shared surgical instruments

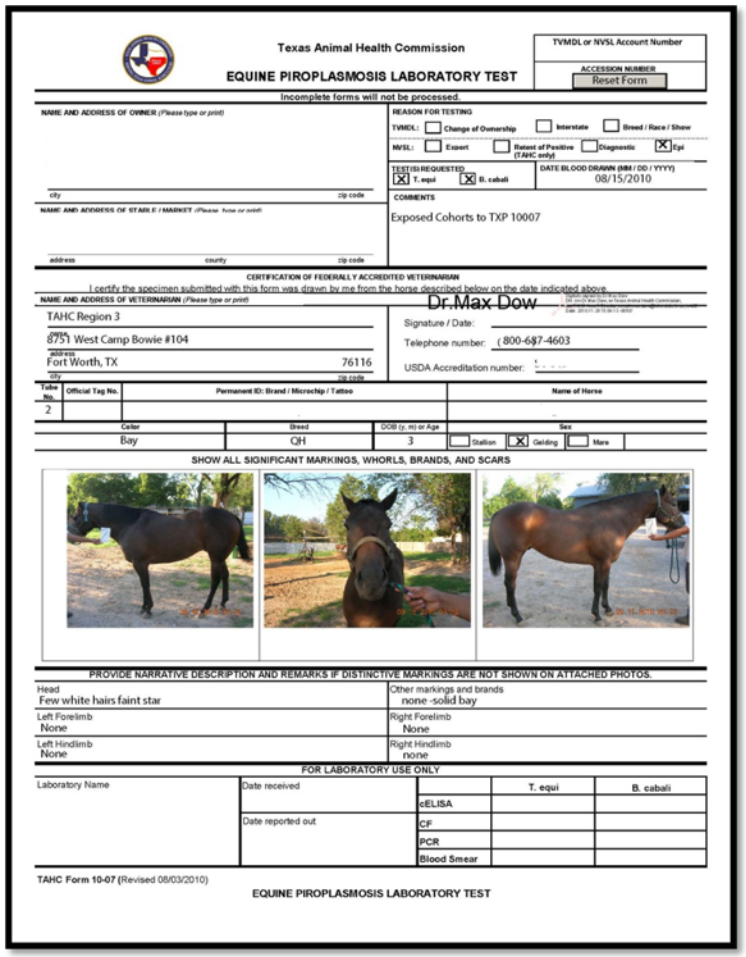


Piro… An Emerging Disease

- Horses entering Texas race tracks required to have negative test within previous 12 months

Piroplasmosis Test Form

- Must be submitted with samples
- Digital photos or hand drawn markings and description
- Solid identification of tested, positive horses



Texas Animal Health Commission

EQUINE PIROPLASMOSIS LABORATORY TEST

TVMDL or NVSL Account Number

ACCESSION NUMBER

Reset Form

Incomplete forms will not be processed.

NAME AND ADDRESS OF OWNER (Please type or print)

REASON FOR TESTING

TVMDL: Change of Ownership Interstate Breed / Race / Show

NVSL: Export Ratent of Positive (TAHC only) Diagnostic Epi

TEST(S) REQUESTED: T. equi B. caballi

DATE BLOOD DRAWN (MM / DD / YYYY): 08/15/2010

COMMENTS: Exposed Cohorts to TXP 10007

NAME AND ADDRESS OF STABLE / MARKET (Please type or print)

CERTIFICATION OF FEDERALLY ACCREDITED VETERINARIAN

I certify the specimen submitted with this form was drawn by me from the horse described below on the date indicated above.

NAME AND ADDRESS OF VETERINARIAN (Please type or print)

Dr Max Dow

TAHC Region 3

8751 West Camp Bowie #104

Fort Worth, TX 76116

Signature / Date:

Telephone number: (800-687-4603

USDA Accreditation number:

Tube No.	Official Tag No.	Permanent ID: Brand / Microchip / Tattoo	Name of Horse
2			

Color	Breed	DOB (y, m) or Age	Sex
Bay	QH	3	Stallion, Gelding, Mare

SHOW ALL SIGNIFICANT MARKINGS, WHORLS, BRANDS, AND SCARS

PROVIDE NARRATIVE DESCRIPTION AND REMARKS IF DISTINCTIVE MARKINGS ARE NOT SHOWN ON ATTACHED PHOTOS.

Head: Few white hairs faint star	Other markings and brands: none -solid bay
Left Forelimb: None	Right Forelimb: None
Left Hindlimb: None	Right Hindlimb: none

FOR LABORATORY USE ONLY

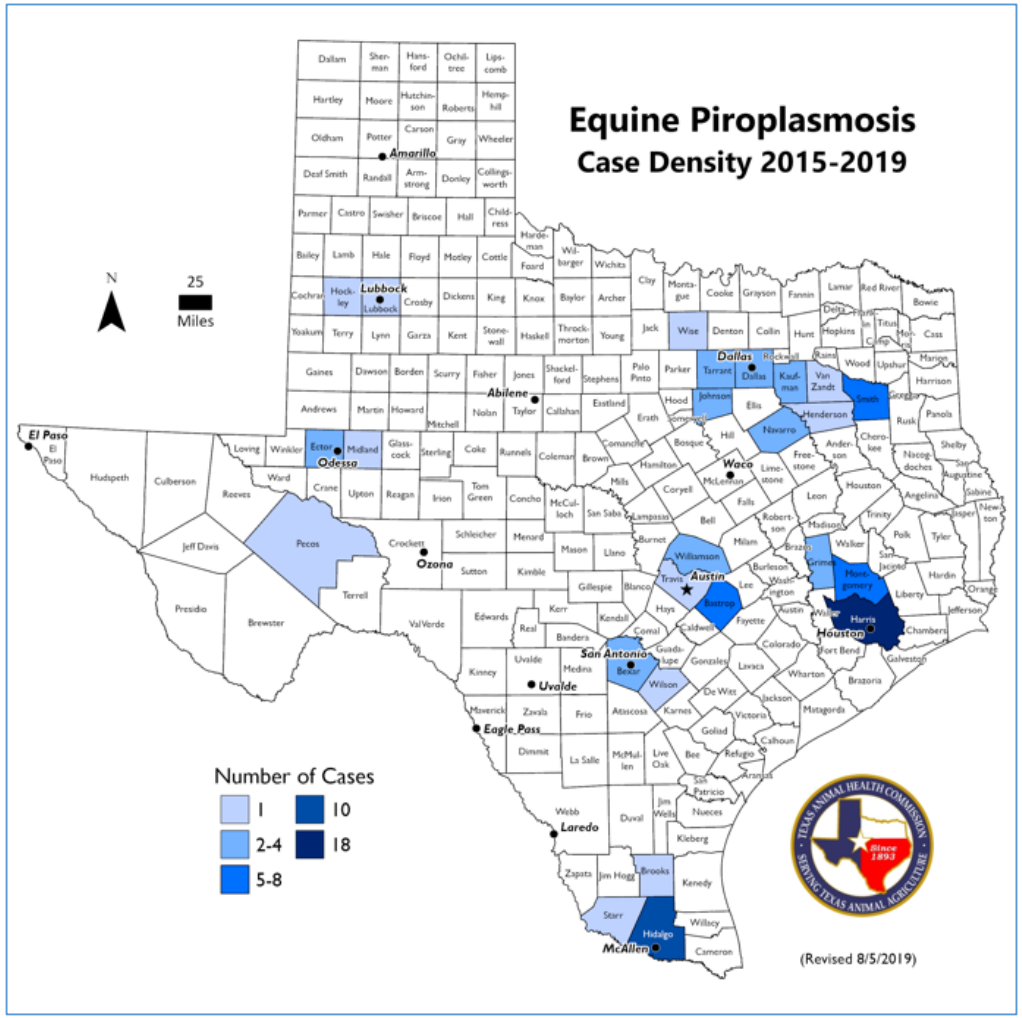
Laboratory Name	Date received		T. equi	B. caballi
		cELISA		
	Date reported out	CF		
		PCR		
		Blood Smear		

TAHC Form 10-07 (Revised 08/03/2010)

EQUINE PIROPLASMOSIS LABORATORY TEST

Piroplasmosis

- South Texas – tick related
- Racing Quarter Horses
  - Associated with dirty needles, common ownership, common trainers, blood products



Piroplasmosis Disease Management

- No vaccine
- USDA-approved treatment (imidocarb dipropionate) is done under supervision of TAHC with stringent post-treatment testing protocol
- Contact TAHC Region Office **before** initiating treatment

Equine Herpes Myeloencephalopathy (EHM)

Herpes Virus

- Neurologic disease linked to Equine Herpes Virus (EHV-1) and causes respiratory disease, abortion, and neonatal death
- Recent outbreaks at large equine events
- Direct and indirect contacts are most important for transmission – horse-to-horse, contaminated equipment, short distance aerosol

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Equine Herpes Virus-1

- Reportable Disease
- Does not affect humans
- Two forms:
  1. Causes abortions
  2. Respiratory infection and neurological signs
- Endemic in US
- Spread through the air, on equipment, clothing and hands

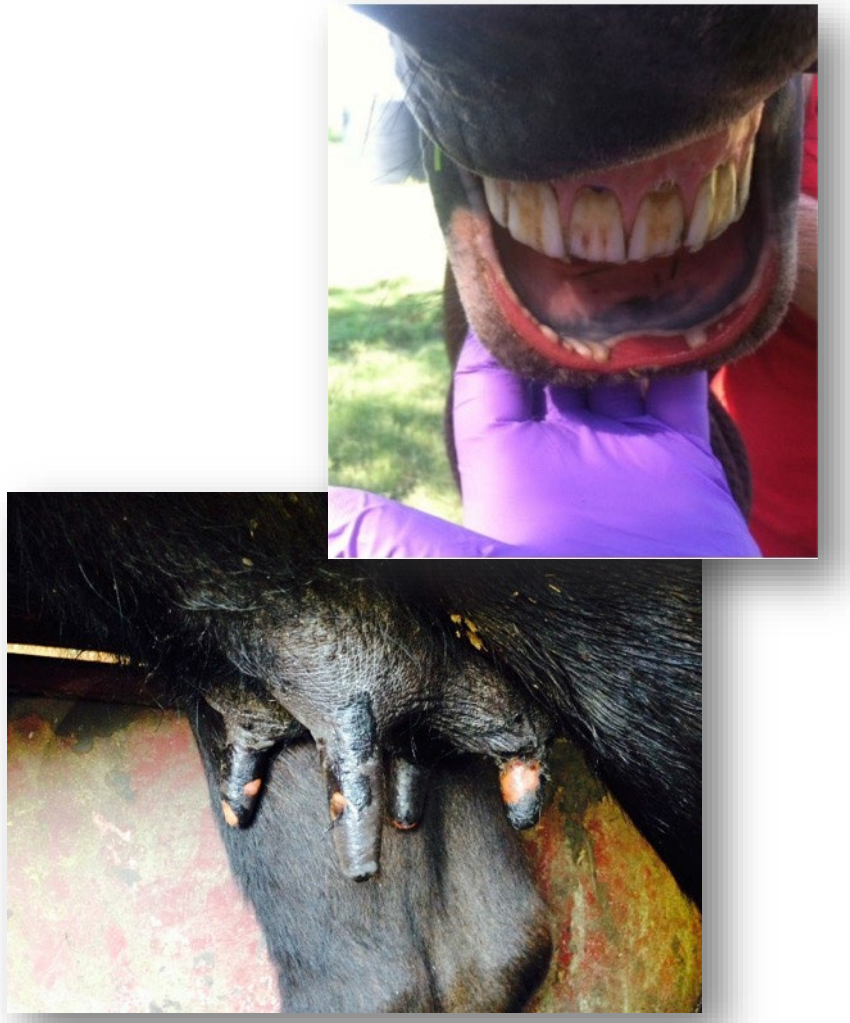
Vesicular Stomatitis (VS)

Viral Disease

- Primarily affects horses and cattle
- Common in Southwest US
- Economic impact due to resemblance of Foot and Mouth Disease in cattle

Vesicular Stomatitis (VS)

- Reportable disease
- Viral disease
- Also can affect swine, sheep, goats, llamas, alpacas, and people
- Transmission involves sand flies, black flies, contaminated medical equipment, or direct contact



VS Clinical Signs

- Excessive salivation – oral blisters/erosions
  - Horses – upper surface of tongue, around nostrils, corner of mouth, sheath, ventral abdomen
  - Cattle – tongue, lips, gums, teats
  - Swine – nose
- Severe weight loss, milk production loss
- Lameness

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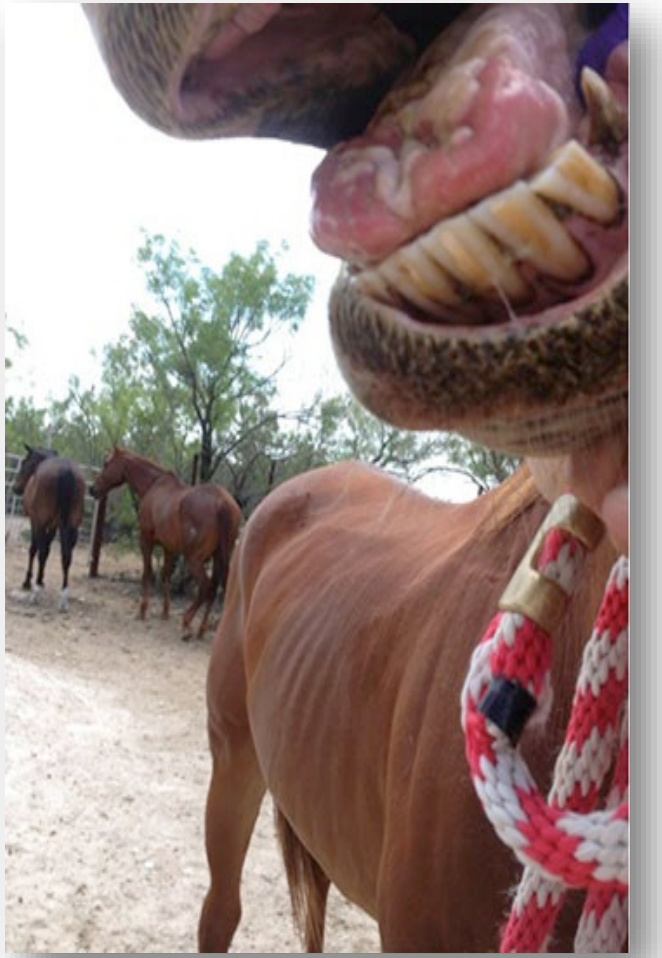
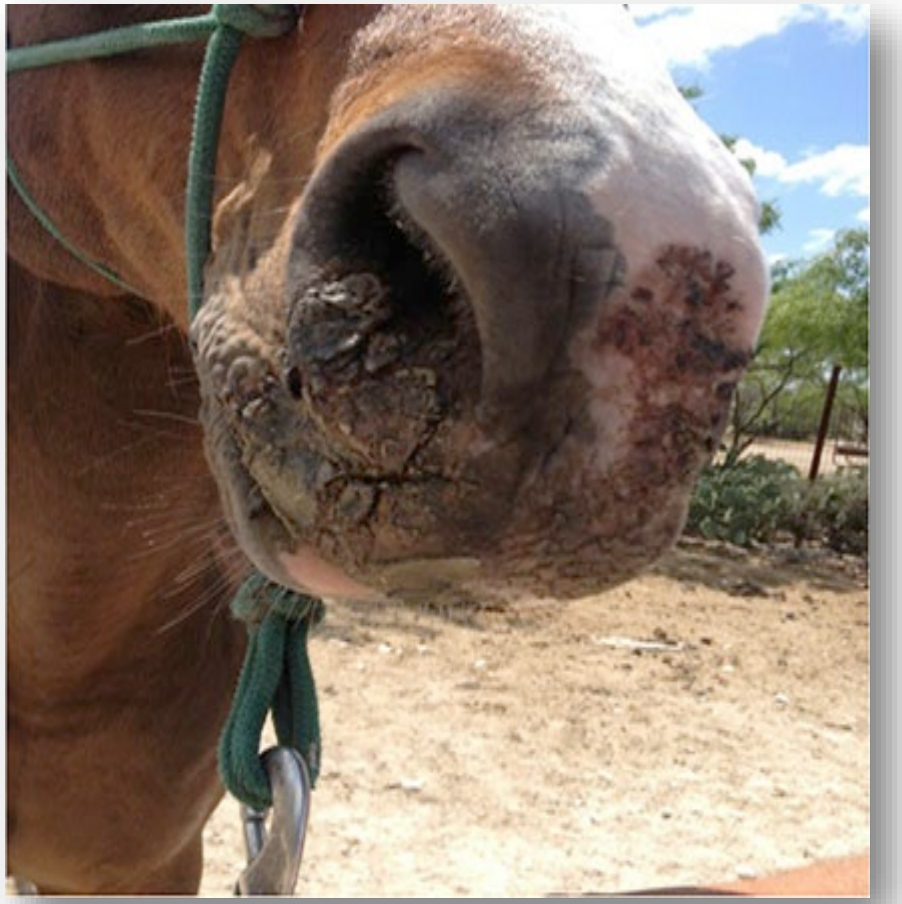
VS Clinical Signs





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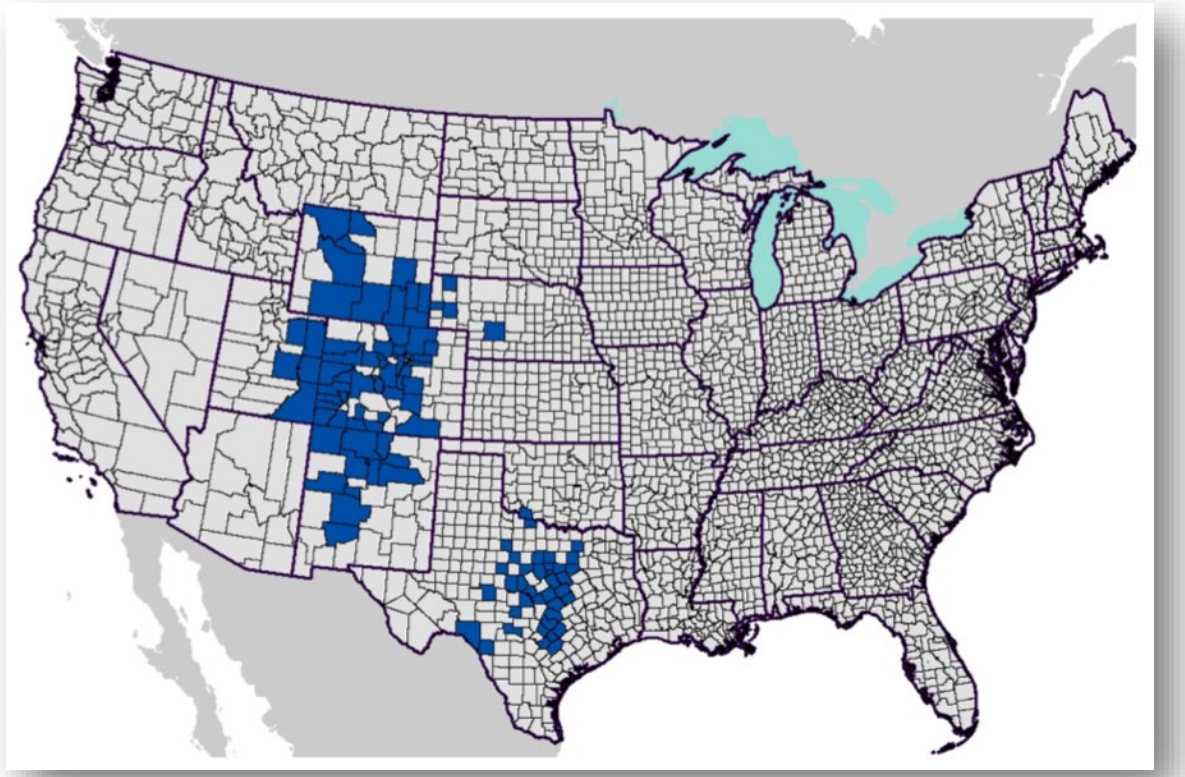
2019 VSV Outbreak

- Cumulative: 1029 premises, 7 states
- Currently: All Texas premises have been released



Vesicular Stomatitis (VS)

Classification of Equine Cases:

- Premises that have laboratory diagnostic confirmation of VS are categorized as confirmed ‘positive’ premises and quarantined
- Once a county is confirmed as VS-positive, new premises with equine that present with clinical signs of VS are not required to be tested, but the accredited veterinarian should provide the case information to regional office and the premises will be quarantined as a ‘suspect’ premises
- Both ‘confirmed’ and ‘suspect’ premises that are quarantined are monitored until 14 days after clinical VS signs are observed

Vesicular Stomatitis (VS)

Classification of other Livestock Cases:

- All cattle, pigs, sheep, goats with lesions are tested by a regulatory veterinarian