



# Texas Authorized Personnel Program (TAPP) – Module 4

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- *Diseases of Swine and Equine*



# Texas Swine Disease Program

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# Reportable Diseases of Swine in Texas

- <http://www.tahc.texas.gov/regs/reportable.html>
  - African swine fever - Asfarvirus
  - Classical swine fever (hog cholera) - Pestivirus
  - Pseudorabies - *Herpesvirus suis*
  - Porcine brucellosis - *Brucella suis*
  - Novel swine enteric coronavirus disease(s)
  - Swine vesicular disease - Picornavirus
  - Vesicular exanthema - Calicivirus



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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



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# Swine Diseases

- Brucellosis – caused by bacterium *Brucella suis*
- Pseudorabies – caused by *Herpesvirus suis*
- Novel Swine Enteric Coronavirus disease(s)





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# Swine Brucellosis and Pseudorabies in Texas

- Commercial Herds – no
- Transitional Herds – yes
- Feral Swine – yes





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# Feral Swine: Disease Reservoir

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





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# Beware of Swine Brucellosis!

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





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# Swine Disease Surveillance in TX

- 2019 fiscal year 8955 Brucellosis & 7495 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



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# Your Role in Swine Brucellosis

- All states are Swine Brucellosis free
- Feral swine impact total eradication
  - >4 million feral swine
  - Known herds in 39 states
- Your responsibility
  - Certificates
  - Permits
  - Sample collection





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# Controlling Live Feral Swine in TX

- Holding Facilities - around 120
- Hunting Preserves - about 40





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# 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

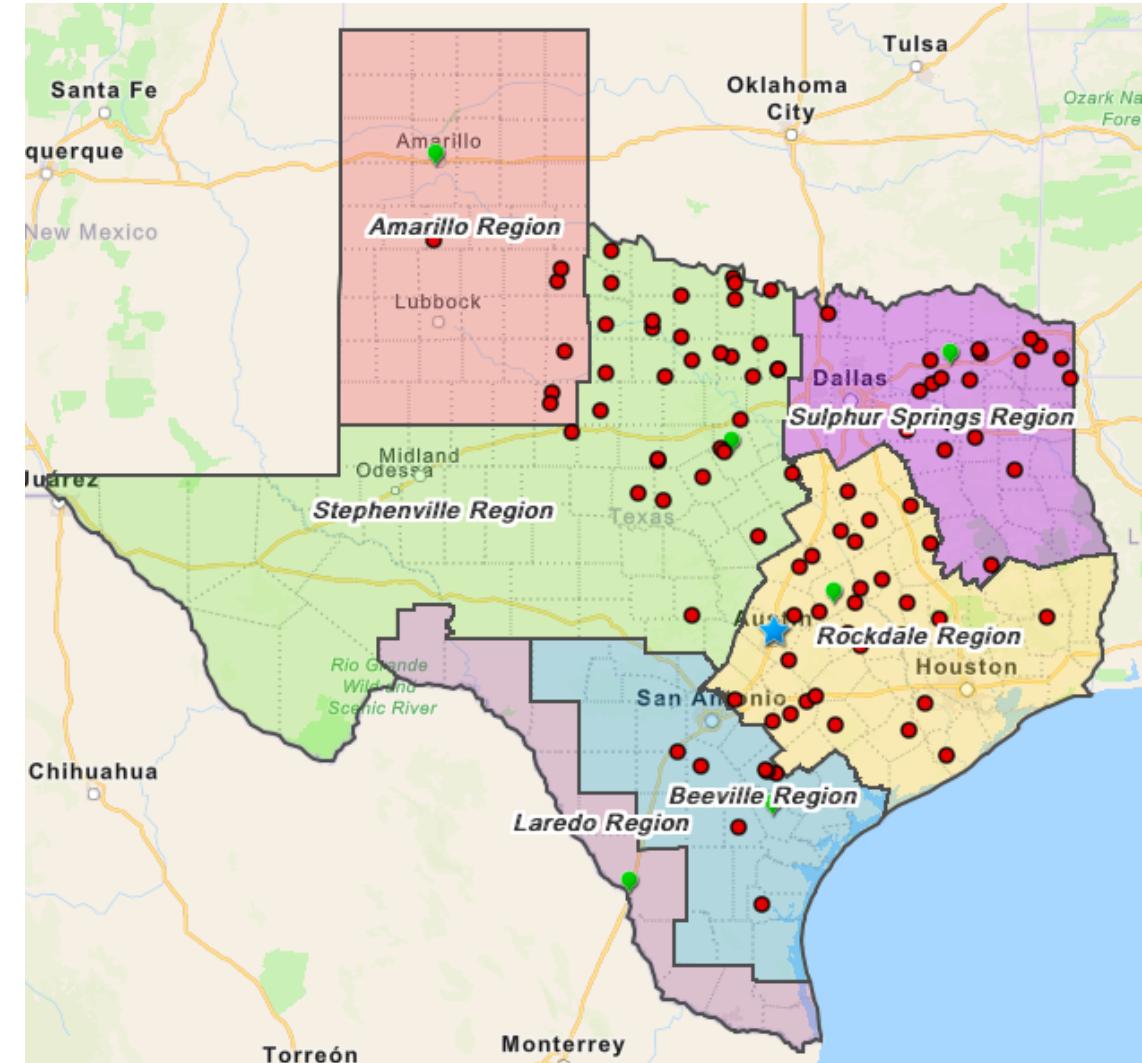


Feral hog approved holding facilities are constructed to prevent escape.  
(Photo courtesy Jared Timmons, Texas A&M AgriLife Extension Service)



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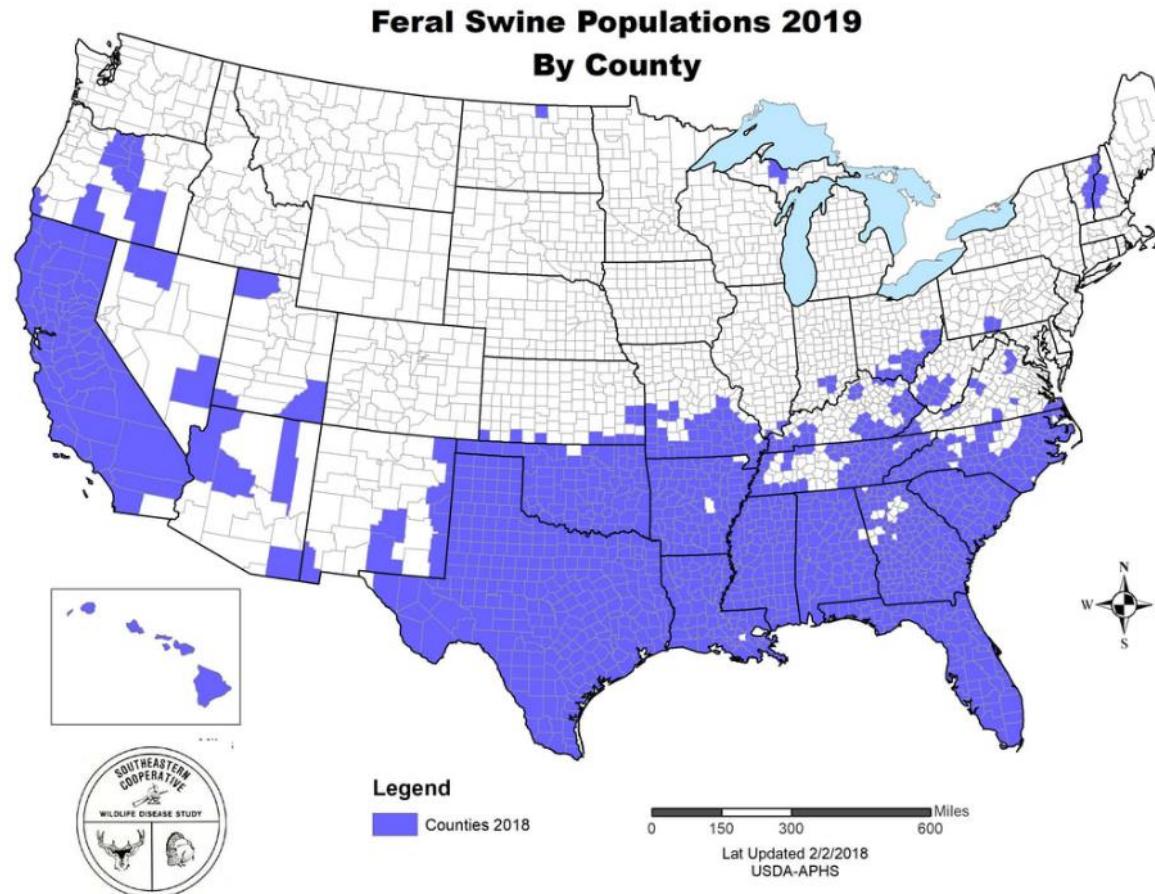
# Counties with Active Feral Swine Facilities





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





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# Your Role in Pseudorabies

- Status in U.S.: All states in Free status
- Your responsibility
  - Certificates
  - Permits
- Feral swine affect
  - Serological evidence
  - All considered positive
  - Depopulation approach





# Swine Enteric Coronavirus Diseases (SECD)

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# Swine Enteric Coronavirus Diseases (SECD)

- Identified in U.S. by NVSL on May 17, 2013
- Purportedly killed > 4,000,000 pigs
- Primarily a disease of commercial swine
- SECD Federally Reportable as of June 5, 2014
- Novel Swine Enteric Coronavirus reportable in Texas as of January 2015\*
- USDA Ends Required Reporting of Swine Enteric Coronavirus Diseases – Effective March 5, 2018



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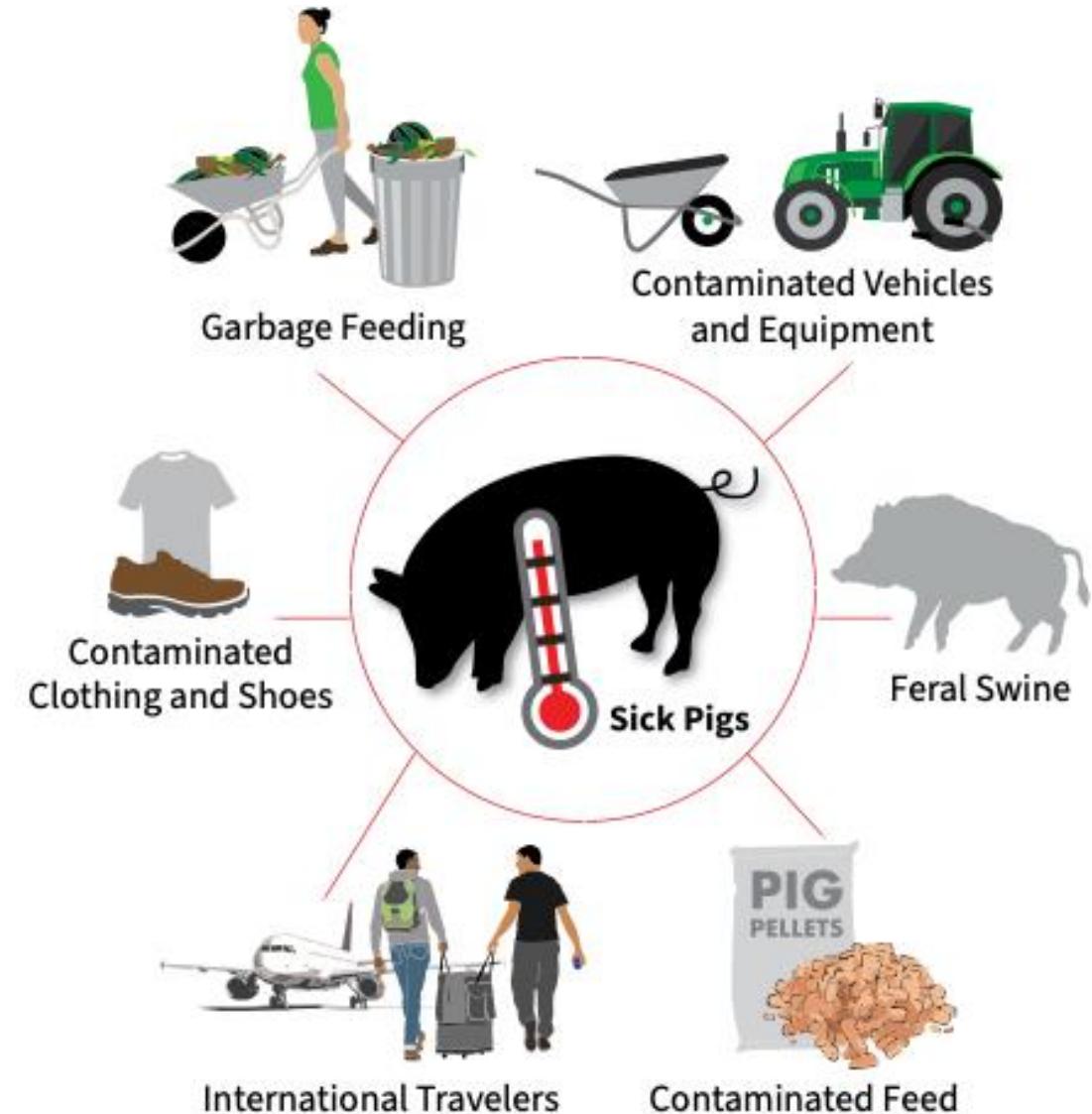
# Swine Enteric Coronavirus Diseases (SECD)

- 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



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# BIOSECURITY IS THE KEY TO PREVENTION!





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# 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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# Reportable Diseases of Equine in Texas

- <http://www.tahc.texas.gov/regs/reportable.html>
  - African horse sickness - Orbivirus
  - Contagious equine metritis - *Tayorella equigenitalis*
  - Dourine - *Trypanosoma equiperdum*
  - Epizootic lymphangitis - *Histoplasma farciminosum*
  - Equine encephalomyelitis (Eastern and Western)\*\* - Alphavirus
  - Equine infectious anemia - Lentivirus
  - Equine morbillivirus pneumonia - Morbillivirus
  - Equine piroplasmosis - *Babesia equi, B. caballi*
  - Glanders - *Pseudomonas mallei*
  - Japanese encephalitis - Flavovirus
  - Surra - *Trypanosoma evansi*
  - Venezuelan equine encephalomyelitis\*\* - Alphavirus; Togaviridae family
  - Equine Viral Arteritis (EVA)\*\*\*
  - Equine Herpes Virus-1 (EHV-1)



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# TAHC Equine Programs

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



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# Equine Infectious Anemia (EIA)

- Negative EIA test required within previous 12 months for:
  - Transfer of ownership
  - Interstate movement
  - Trail rides
  - Shows, fairs, rodeos
  - Public trails – state parks
  - Equine in boarding stables
  - Breeding farms
  - Training farms
  - Race tracks
  - Less than 200 yards apart requires current negative EIA test





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# Equine Infectious Anemia (EIA)

- Unless euthanized within 10 days, EIA infected equine are permanently identified on the left shoulder with "74-A"





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## County Name EIA 2020 Piro 2020

	EIA 2020	Piro 2020
Bastrop	1	3
Brazoria	2	6
Dallas	0	2
Denton	1	0
Ector	1	0
Ellis	2	0
Fayette	0	1
Harris	7	0
Johnson	1	0
Kleberg	1	0
Travis	1	0
Victoria	0	3

Dallam	Sherman	Hansford	Ochiltree	Lipscomb
Harney	Moore	Hutchinson	Roberts	Hempstead
Oldham	Potter	Carson	Gray	Wheeler
Deaf Smith	Randall	Armstrong	Denton	Collingsworth
Parmer	Castro	Swisher	Briscoe	Holl
Bailey	Lamb	Hale	Floyd	Motley
Cochran	Hockley	Lubbock	Crosby	Decker
Yoakum	Terry	Lynn	Garza	Kent
				Stonewall
				Haskell
				Throckmorton
				Young
				Jones
				Shackelford
				Stephens
				Palo Pinto
				Parker
				Tarrant
				Hood
				Callahan
				Eastland
				Erath
				Sommerville
				Bosque
				Comanche
				Brown
				Monroe
				McCulloch
				Mills
				San Saba
				Lampasas
				Hamilton
				McLennan
				McLennan
				Freestone
				Falls
				Burnet
				Blanco
				Williamson
				Hays
				Gillespie
				Blanco
				Kerr
				Real
				Borden
				Comal
				San Saba
				Freestone
				Garza
				Tom Green
				Uvalde
				Dimmit
				Frio
				Atascosa
				Kenedy
				Refugio
				Live Oak
				San Patricio
				Calhoun
				Matagorda
				Colorado
				Lavaca
				DeWitt
				Wharton
				Jackson
				Galveston
				Fort Bend
				Wharton
				Chambers
				Brazoria
				Harris
				Houston
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				Orange



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# Equine Piroplasmosis

- Reportable disease
- Not a human health threat
- Horses, donkeys, mules, and zebras affected
- Not endemic to the U.S.





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# Piroplasmosis

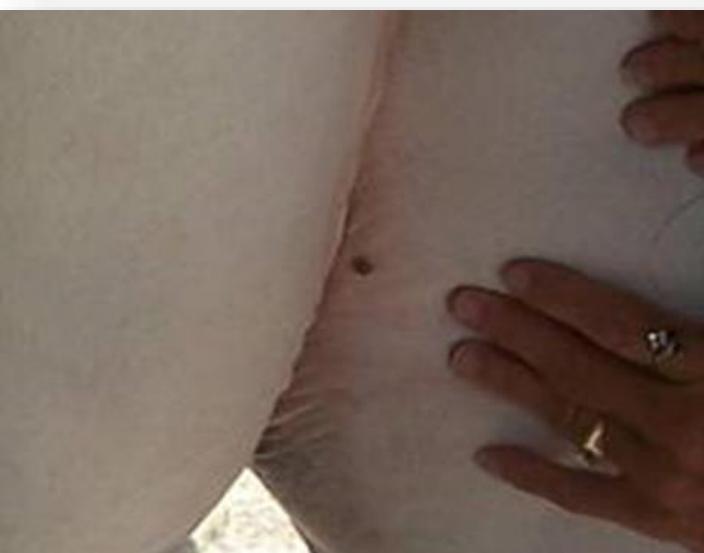
- Protozoa – *Babesia caballi* or *Theileria equi*
  - Blood-borne, can be mild or acute, depending on virulence
  - Mechanical transmission by ticks
  - Readily transmitted iatrogenically through use of blood-contaminated syringes, needles, or surgical equipment, or by transfusion of infective blood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



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# Transmission

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





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# Piro... An Emerging Disease

- Horses entering Texas racetracks are required to have a negative test within the previous 12 months





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# Piroplasmosis Test Form

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

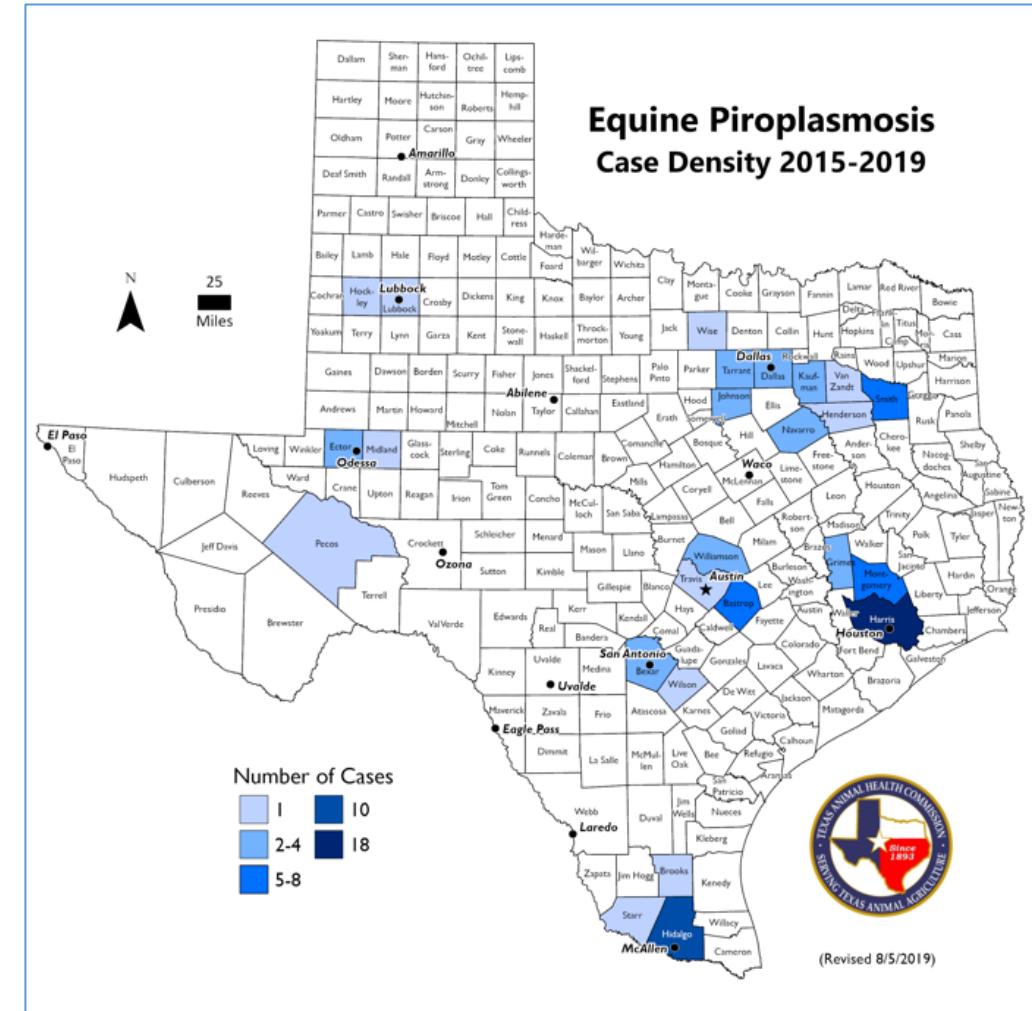
Texas Animal Health Commission			
EQUINE PIROPLASMOSES LABORATORY TEST			
Incomplete forms will not be processed.			
NAME AND ADDRESS OF OWNER (Please type or print)		REASON FOR TESTING	
		<input type="checkbox"/> Change of Ownership	<input type="checkbox"/> Interstate
		<input type="checkbox"/> Breed / Race / Show	<input type="checkbox"/> Other
MVS: <input type="checkbox"/> Exempt		<input type="checkbox"/> Status of Positive	<input type="checkbox"/> Diagnostic
		<input checked="" type="checkbox"/> T. equi	<input type="checkbox"/> B. cabuli
		DATE BLOOD DRAWN (MM / DD / YYYY)	
		08/15/2010	
City _____ Zip code _____		COMMENTS	
NAME AND ADDRESS OF STABLE / MARKET (Please type or print)		Exposed Cohorts to TXP 10007	
Address _____ County _____ Zip code _____			
CERTIFICATION OF FEDERALLY ACCREDITED VETERINARIAN			
I certify the specimen submitted with this form was drawn by me from the horse designated below on the date indicated above.			
NAME AND ADDRESS OF VETERINARIAN (Please type or print)			
TAHC Region 3		Signature / Date:	
8751 West Camp Bowie #104		Dr. Max Dow	
Address: Fort Worth, TX		Telephone number: (800-687-4603)	
City: Fort Worth		USDA Accreditation number: 1	
Table No. 2	Official Tag No.	Permanent ID: Brand / Microchip / Tattoo	Name of Horse
	Color:	Breed:	DOB (y, m) or Age:
	Bay	OH	3
Sex:			
<input type="checkbox"/> Stallion <input checked="" type="checkbox"/> Gelding <input type="checkbox"/> Mare			
SHOW ALL SIGNIFICANT MARKINGS, WHORLS, BRANDS, AND SCARS			
PROVIDE NARRATIVE DESCRIPTION AND REMARKS IF DISTINCTIVE MARKINGS ARE NOT SHOWN ON ATTACHED PHOTOS.			
Head		Other markings and brands	
Few white hairs faint star		none -solid bay	
Left Forelimb		Right Forelimb	
None		None	
Left Hindlimb		Right Hindlimb	
None		none	
FOR LABORATORY USE ONLY			
Laboratory Name	Date received	T. equi	B. cabuli
	cELISA		
	CF		
	PCR		
	Blood Smear		



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# Piroplasmosis

- South Texas – tick related
- Racing Quarter Horses
  - Associated with poor sanitation, dirty needles





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# Piroplasmosis Disease Management

- No vaccine
- Approved treatment is done under supervision of TAHC with stringent post-treatment testing protocol
- Contact TAHC Region Office **BEFORE** initiating treatment





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# Equine Herpes Virus-1

- Reportable disease
- Does not affect humans
- Two forms
  - Causes abortions
  - Respiratory infection and neurological signs
- Endemic in the U.S.
- Spread through the air, on equipment, clothing and hands





# 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 Viral Arteritis (EVA)

- Reportable disease
- Does not affect humans
- Primarily a respiratory disease, but may be transmitted by carrier stallions during breeding





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# Vesicular Stomatitis (VS)

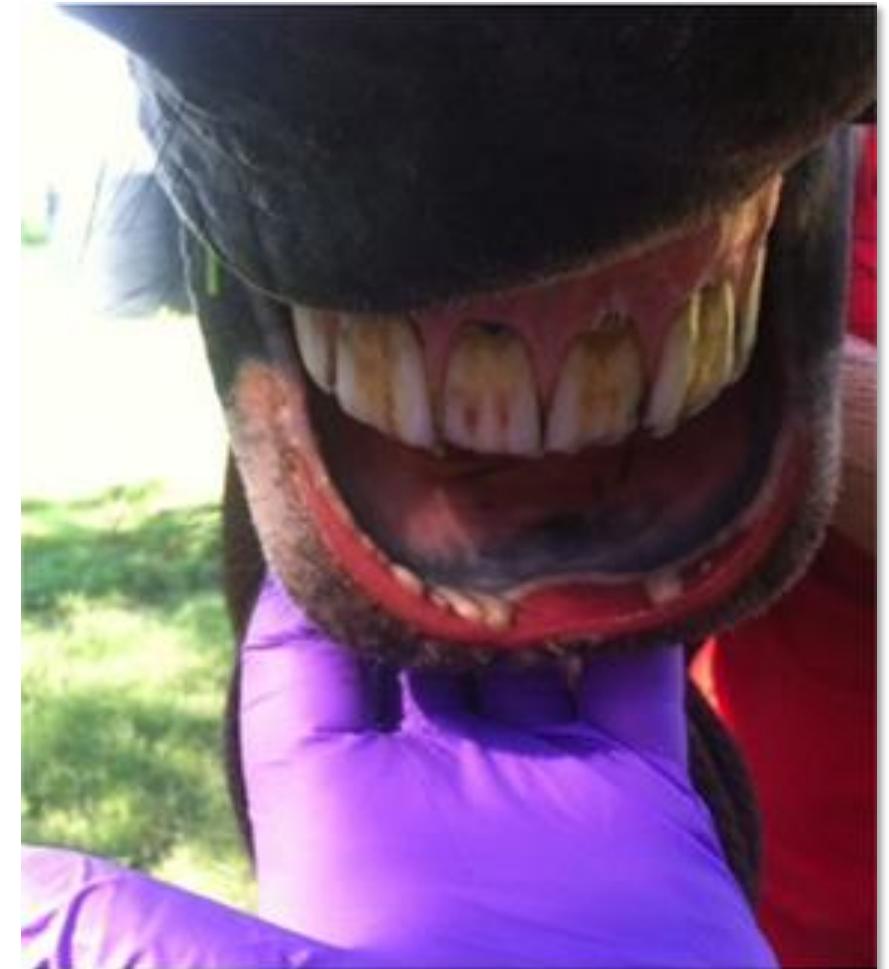
- Viral Disease
  - Primarily affects horses and cattle
  - Common in Southwest US
  - Economic impact due to resemblance of Foot and Mouth Disease in cattle



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# Vesicular Stomatitis (VS)

- Outbreaks sporadic in TX, MN, CO, AZ
- Signs:
  - blisters, sores, lameness
- Looks like Foot-and-mouth disease!
- Affects:
  - horses, pigs, cows
- Cause:
  - virus
- Confirmed through lab testing
- Animals quarantined until 14 days after onset of lesions





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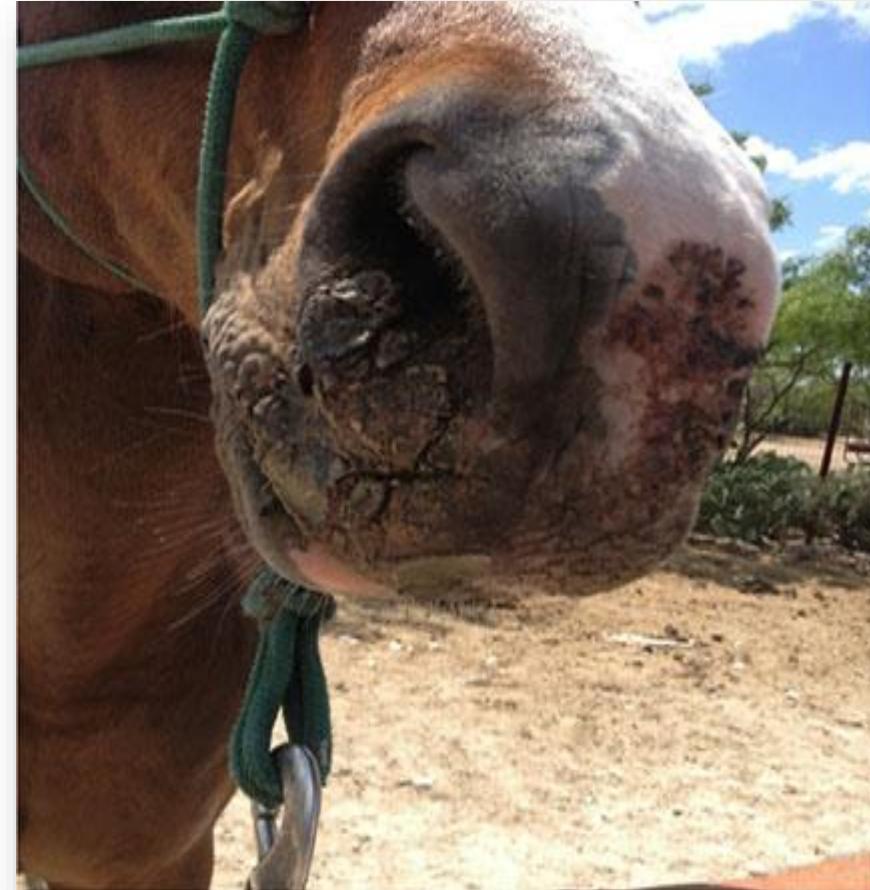
# VS Clinical Signs

- 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

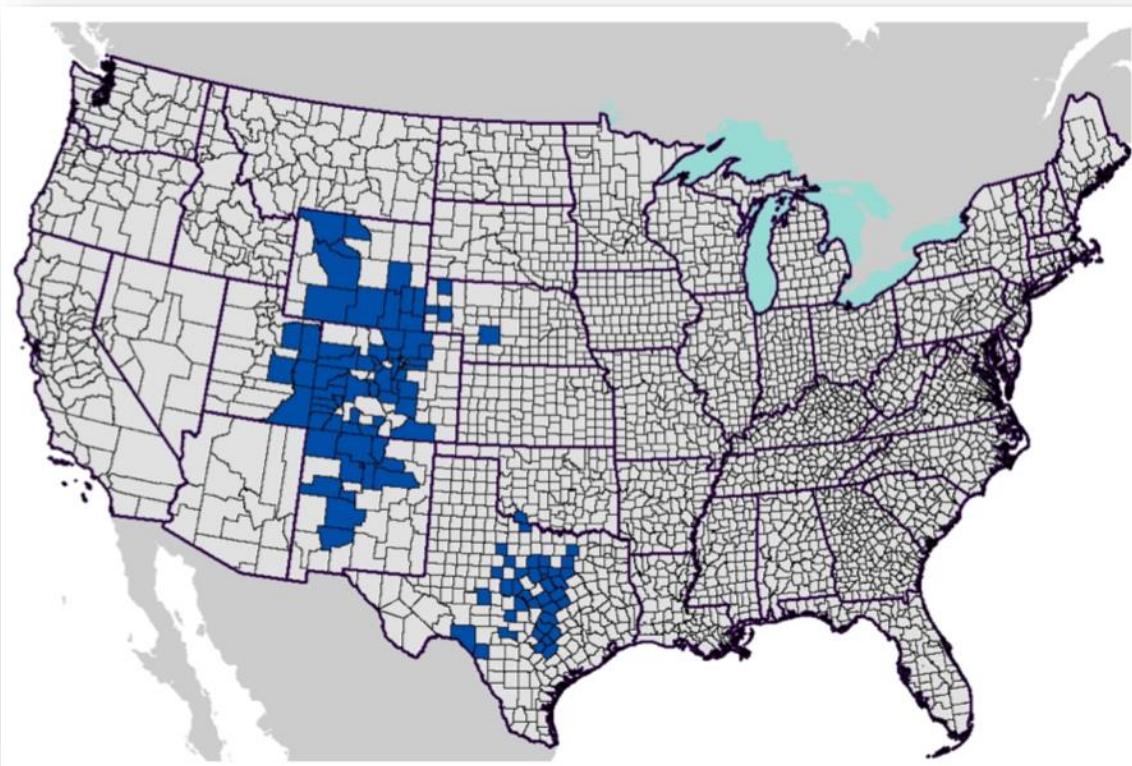




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# 2019 VSV Outbreak

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





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# 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



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# Vesicular Stomatitis (VS)

- Classification of other Livestock Cases:
  - All cattle, pigs, sheep, goats with lesions are tested by a regulatory veterinarian