

# Brazos Valley Equine Hospital

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## VESICULAR STOMATITIS

With the ongoing 2014 outbreak of vesicular stomatitis in Texas, BVEH would like to help answer your questions about VS. Please direct any questions or comments about this information to Dr. Ben Buchanan, DACVIM, DACVECC, one of our infectious disease specialists.

### **As of July 11, 2014**

#### GENERAL INFORMATION

- Vesicular stomatitis also known as VS, is a very contagious viral disease affecting horses, livestock (cattle, goats, sheep, llamas, swine), wildlife (deer, feral hogs), and humans caused by the vesicular stomatitis virus (VSV).
- VSV is an arbovirus and causes ulcerations of the oral mucus membranes and junction of the mucosa and skin areas. VSV is in the *Vesiculovirus* genus.
- Two strains of VS are of interest in the US; *VSV-New Jersey* and *VSV-Indiana*. They are distinctly different virus that do not generate cross protecting immunity.

#### CURRENT OUTBREAK

- On May 8, 2014, VS was detected on a premise in Kinney county.
- **Since that time cases have been reported in cattle and horses in Jim Wells, Kinney, Hidalgo, San Patricio, Nueces, Bastrop, and Travis counties.**
- Because of the current outbreak, **several states have enhanced entry requirements** and Canada has an entry embargo to horses from Texas. All cases have been of the New Jersey (VSV-NJ) serotype. See [http://www.tahc.texas.gov/news/2014StateRestrictionsOnTX\\_VS.pdf](http://www.tahc.texas.gov/news/2014StateRestrictionsOnTX_VS.pdf) for state and some international entry requirements.

#### HISTORICAL OUTBREAKS

- Occasional outbreaks in the southwest have occurred with cases noted in Colorado, Arizona, Wyoming, Texas and New Mexico.
- In 1995, a multiple state outbreak occurred, which affected >350 premises in 6 different states.
- Similar outbreaks affecting multiple states occurred in 1997, 1998, 2004, and 2005.
- Recent outbreaks affecting only a single state occurred in 2006, 2009, 2010, and 2012.
- The last confirmed case of VS in a horse in Texas occurred in 2009.
- The last confirmed case of VS in cattle in any state occurred in 2006.
- See [aphis.usda.gov](http://aphis.usda.gov) for information on previous outbreaks and current updates. [www.tahc.texas.gov](http://www.tahc.texas.gov) will also have recent and ongoing updates.

#### SYMPTOMS

- Vesicles (or blisters) develop and become ulcers after rupturing. The vesicles develop in the oral cavity, on the coronary bands, on the teats and external genitalia, and on the udders.
- Fever is uncommon, but may be seen at the initial stages of the infection.
- Because of the oral ulcers, horses will salivate, not eat well and may lose weight. If they are not drinking additional complications, such as intestinal impactions, may occur.

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- Lameness may be noted secondary to the ulcers on the coronary band. In extreme cases this can lead to sloughing of the foot.
- Ulcers may be seen in the nasal cavity and bleeding from the nose may be noted, or just edema of the nasal passage. This may be noted as simply a crusty nose.
- Ulcers may occur on the larynx and pharynx leading to pharyngitis.
- Symptoms develop within 3 to 7 days of exposure.

## TRANSMISSION

- VSV is a very contagious virus. It is transmitted in secretions and can be aerosolized. It is not absorbed across intact skin, but rather through wounds and mucous membranes.
- While it is most frequently contracted by exposure to insects, it is possible to get infected by direct exposure to another infected horse with visible lesions.
- Animals are considered highly contagious for the first 48 to 72 hours clinical signs are present and must be isolated.
- The method of transmission of VS is not well understood but data is convincing for an insect vector. New cases occur with warmer weather and insect hatching and stop with cooler weather. Sandflies and blackflies are thought to be the most likely culprit.
- The frequent large geographical area affected by VS cases is thought to be related to wind patterns and movement of insects by wind.
- Increased numbers of cases have been noted in animals grazing wooded pastures in the summer and fall.
- The transmission of cases across states and large areas is also related to the movement of livestock and horses.
- A definitive reservoir has not been identified, but many mammals including bats have been identified as possibilities.

## RISK FACTORS

- Animals with access to a shelter or a barn have a reduced risk of developing VS.
- Access to pasture increases the risk of VS.
- Proximity (1/4 mile) to running water also increases the risk of developing VS.

## DIAGNOSIS

- Ideally the virus is isolated from saliva or fluid collected from a vesicle/ulcer.
- Other tests include some cultures of the tissue and testing of the blood for antibodies against VS. Animals may be positive on blood testing despite never showing any clinical signs. A complement fixation (CF) test is the confirming test, although several other serologic tests are run at the same time.
- Sometimes a biopsy of the tissue is necessary to rule out other causes of ulcers on the skin and mucous membranes.

## TREATMENT/MANAGEMENT

- Treatment is supportive and involves soft mashes, pain medication, bandages, and oral mouth rinses.

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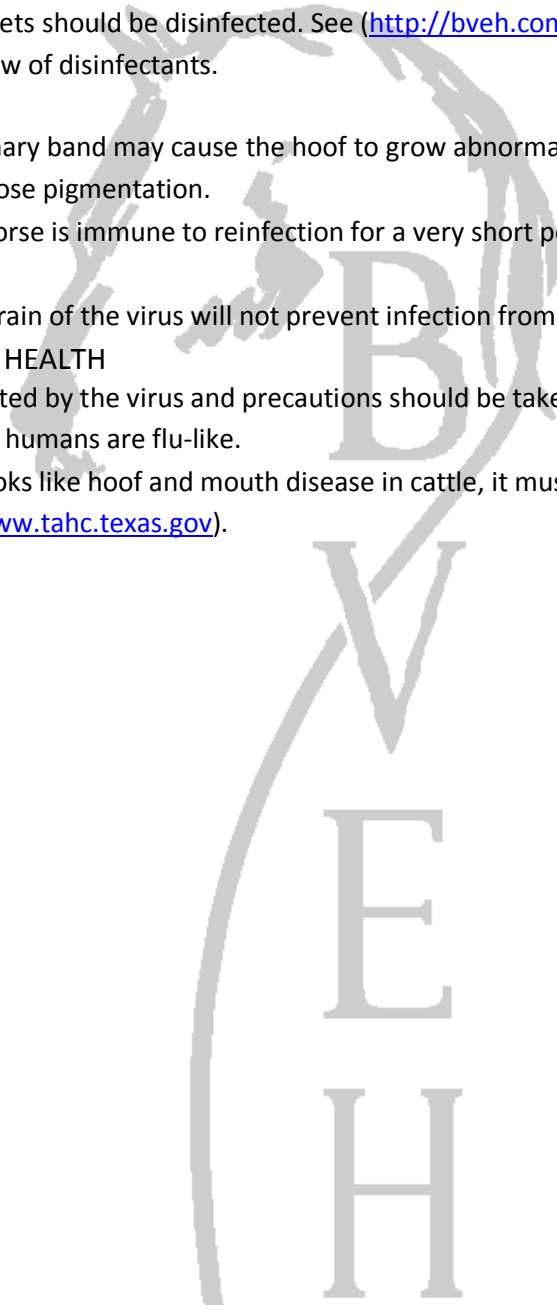
- The ulcers typically heal in 1 to 5 weeks.
- Significant infection of the coronary bands may take several months to grow out.
- Animals must be isolated from all other livestock.
- Premise with active cases will be quarantined by regulatory agencies for a minimum of 21 days.
- Feed and water buckets should be disinfected. See (<http://bveh.com/pdfs/Biosecurity.pdf>) for a comprehensive review of disinfectants.

## RECOVERY

- Damage to the coronary band may cause the hoof to grow abnormally for a period of time.
- Skin infections may lose pigmentation.
- Once infected, the horse is immune to reinfection for a very short period of time (less than 6 months).
- Infection with one strain of the virus will not prevent infection from another.

## REGULATORY AND PUBLIC HEALTH

- Humans can be infected by the virus and precautions should be taken when treating infected horses. Symptoms in humans are flu-like.
- Because this virus looks like hoof and mouth disease in cattle, it must be reported to the State Veterinary Office ([www.tahc.texas.gov](http://www.tahc.texas.gov)).



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