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VEE

of HORSES

...a disease on the move

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VEE

of HORSES

...a disease on the move

Horses in the United States are threatened by the deadly horse sleeping sickness known as Venezuelan equine encephalomyelitis, or VEE. Fortunately, they can be protected by vaccination.

VEE invaded this country in the summer of 1971, crossing the U.S.-Mexico border into southern Texas. The virus-caused disease is carried by mosquitoes, and it is fatal to about 60 percent of the horses, mules and other equine animals affected. Other warm-blooded animals are subject to low-grade infection. Although VEE attacks humans, usually producing flu-like symptoms, it is rarely fatal.

VEE is similar to but more deadly than Eastern and Western forms of equine encephalomyelitis (EEE and WEE) that have occurred regularly for decades in this country.

The 1971 VEE outbreak in Texas was quickly controlled but not before hundreds of horses died and dozens of people were hospitalized. Emergency measures, including mass vaccination of horses, were credited with stopping the epidemic in a few months.

Fortunately, no VEE cases occurred in the United States during 1972. However, horses in the Southwest were threatened in 1972 by outbreaks that appeared on Mexico's west coast.

DISEASE on the Move

VEE was first identified in Colombia and Venezuela in 1935 and 1936. Later outbreaks occurred mainly in northern South America until 1969 when a major epidemic erupted in Guatemala. The disease then swept through Central America and Mexico leaving thousands of dead horses in its wake.

Once on the move, VEE covered 2,500 miles in 2 years despite efforts to create buffer zones of vaccinated horses around outbreak areas.

Vaccination efforts in South and Central America and Mexico, with U.S. assistance, helped reduce losses but did not halt the northward spread of epidemic-causing VEE virus. By late June 1971, the first Texas horse to contract VEE was showing characteristic signs of the disease. VEE was confirmed on July 9.

VEE in Texas

The 1971 VEE outbreak in Texas—confined to 26 southern counties—was brought under control through the swift action of an emergency program supported by State and Federal agencies, practicing veterinarians, and the horse-owning public. The last case that year was in November in Starr County.

Key emergency measures used to stop VEE included: Quarantines to restrict movements of horses; aerial spraying of the Rio Grande Valley and coastal areas along the Gulf Coast to reduce the number of disease-bearing mosquitoes; and mass vaccination of horses—aimed at vaccinating 90 percent or more of the horses in high risk areas.

Beginning in Texas and neighboring States, the vaccination drive was eventually extended to 19 States and the District of Columbia. Before year's end, 95 percent of the horses—over

2.8 million of them—had been vaccinated in Alabama, Arizona, Arkansas, California, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, New Jersey, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

VEE Surveillance

No one knows if the epidemic-causing VEE virus can survive indefinitely in the temperate climate of the United States or if mass vaccination of horses eliminated the virus by disrupting the cyclic nature of the disease.

But even if the virus were eliminated, it could re-enter this country after wintering over in a tropical zone. In 1971, VEE moved up Mexico's east coast to enter Texas; in 1972, it moved up Mexico's west coast threatening southern California, Arizona, New Mexico, and Texas.

The U.S. Department of Agriculture's (USDA's) Animal and Plant Health Inspection Service (APHIS) is coordinating a surveillance system to detect VEE virus activity and to give early warning of possible outbreaks. A number of Federal and State agencies and universities are assisting.

A key feature of the nationwide detection system is prompt investigation of horses with suspicious symptoms. Special detection efforts are concentrated in the Southwest where VEE is considered high risk during the spring and summer months.

To detect VEE virus activity, mosquitoes and blood samples from animals are collected in high-risk areas for testing at the Veterinary Services Diagnostic Laboratory (VSDL) in Ames, Iowa. The blood samples are taken from both wild and domestic animals selected for testing because of susceptibility to VEE.

Also, "sentinel" animals, known to be susceptible to VEE, are dispersed along the U.S.-

Mexico border and carefully checked for disease signs.

Surveillance is concerned with virulent, disease-causing virus. Several VEE virus subtypes have been identified—some relatively harmless. But Subtype 1-B that invaded Texas by way of Central America and Mexico is highly infectious and deadly to horses.



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The SIGNS of VEE

The signs of VEE closely resemble those of Eastern and Western types of encephalomyelitis. All three diseases attack the brain and central nervous system of horses. But laboratory tests are required to determine which virus is involved. Some horses infected with VEE show no signs. Most show symptoms of varying severity within 2 to 3 days after being infected. The signs will appear in approximately this order:

- High temperature (102-106 degrees F.) is usually the first sign of VEE.
- Depression and drowsiness are usually next. The horse will lack energy and may hang its head. Eyelids may droop.
- Difficulty in eating. Soon lips may become droopy. Paralysis of the pharynx may occur causing inability to swallow.

- Incoordination. The horse will begin to have difficulty in moving about and will stagger or stumble. He may assume a "saw-horse" stance, circle continuously, or press against objects.
- General paralysis. In the final acute stages, the horse will often become completely paralyzed.
- Convulsions. Death is usually preceded by violent convulsions.



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VEE Vaccine

VEE vaccine is administered by licensed veterinarians. This is the same vaccine used in South and Central America, Mexico, and in the 1971 VEE outbreak in Texas.

Before being licensed for commercial production, the vaccine—a modified live virus product called TC-83—was subjected to extensive testing for safety and effectiveness.

Results of studies revealed no adverse effect from vaccine administered to pregnant mares in 1971 or to their 1972 foals.

Studies on the duration of immunity provided by the vaccine have been underway since 1971. Results so far show vaccinated horses are amply protected for 18 months.

PROTECTING Horses Against VEE

Vaccination for VEE is now voluntary and must be done at horse owner's expense. Horse owners should consult their veterinarians for advice and service. A certificate of vaccination should be obtained for each horse to meet possible requirements for movements.

The time to vaccinate for VEE is now—before exposure occurs. If a horse has not been vaccinated against VEE, exposure will likely lead to disease. Once this happens, it's too late to vaccinate the infected horse. Vaccination is prevention—not treatment.

All horses in the 48 contiguous States should be vaccinated for VEE. Foals vaccinated when under 6 months of age should be revaccinated to assure immunity. Horses in the Southwest which were vaccinated during the 1971 emergency should be revaccinated as a special precaution since they are near areas of recent known infection.

Vaccinating for EEE and WEE will not protect against VEE, and vaccinating for VEE will not protect against the other two.

Horse owners and veterinarians throughout the Nation should report sick horses with signs suggesting central nervous system involvement to State or Federal animal health officials.



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Veterinary Services
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