

West Nile Virus (WNV) is one of several arboviruses that is transmitted by mosquitoes to birds, horses, and humans.

The virus maintains itself in nature through a complex transmission cycle involving birds and mosquitoes. Wild birds serve as reservoir hosts for the virus while mosquitoes serve as the vectors for transmission. The virus maintains itself in nature through continuous transmission between the reservoir host and mosquitoes. When environmental conditions are favorable for an overabundance of mosquitoes, the virus may “spill over” into the horse and human population. In horses and humans, the virus may cause clinical disease ranging from mild flu-like symptoms to a severe encephalomyelitis (inflammation of the brain and/or spinal cord) and in some cases, death. Scientists believe that the virus survives through the winter by hibernating in adult mosquito populations.

WNV was identified for the first time in the Western Hemisphere in New York City during the late summer of 1999. It then spread south along the Eastern Seaboard and was detected in Florida in July of 2001. Since that time, WNV has spread rapidly across the United States infecting many species of animals including birds, horses, and humans. It has been detected in almost every state in America.



TRANSMISSION

The only vectors involved in the spread of WNV are mosquitoes. Mosquitoes become infected when they feed on infected wild birds (i.e., reservoir hosts). The virus travels to and replicates in the mosquito's salivary glands. Infected mosquitoes can then transmit WNV to other birds, humans, and mammals while biting to take a blood meal. The virus is primarily circulated in nature through the mosquito-bird-mosquito cycle. However, under certain conditions, the virus spills into human and animal populations. Research has proven that horses and humans are not involved in the transmission cycle of WNV. Therefore, horses and people infected with WNV are not considered a threat to other horses or humans, and they are referred to as “dead-end hosts”.

CLINICAL SIGNS

Horses infected with WNV can demonstrate a variety of clinical signs. Initially, they may show mild flu-like symptoms such as a low-grade fever, depression and listlessness. If the virus reaches the brain, it can cause encephalitis that is accompanied by a variety of neurologic signs. The most commonly observed clinical signs are:

- ataxia, characterized by stumbling, staggering, wobbly gait or incoordination, is the most common clinical sign and affects the rear legs most often; generalized weakness
- going down with difficulty or inability to rise
- muscle twitching on body, especially around the head
- head tilt
- teeth grinding
- fever

Even when encephalitis signs occur, more than 75 percent of the affected horses recover. Recovery is complete, in most cases, and the animal shows no permanent neurological impairment after 4-6 weeks.

DIAGNOSIS

If a horse shows signs suggestive of WNV, contact a veterinarian to examine, test and attend to the horse immediately. A definitive diagnosis is required to rule out other equine diseases with similar signs, i.e., rabies, equine protozoal myeloencephalitis (EPM), eastern equine encephalitis (EEE), botulism, tetanus, and equine herpes virus (EHV-1). A positive diagnosis can be confirmed by testing the blood serum of an infected horse for virus or antibody. Testing nervous tissues (brain/spinal cord) which may be collected during postmortem examination of the deceased animal can confirm the presence of the virus.

TREATMENT

There is no definitive treatment for WNV infection. Like all other viruses, there are no specific medications that will destroy the virus. However, with early intervention and aggressive supportive treatment initiated by a veterinarian, most horses will recover fully within 4-6 weeks. The key is to report neurologic cases to a veterinarian and begin treatment as soon as possible.



PREVENTION

Horse owners should vaccinate their horses for eastern equine encephalomyelitis (EEE) and WNV according to their veterinarian's recommendations. It is important to know that the EEE vaccine will not protect horses against WNV. Also note, the use of vaccines to protect horses against these diseases is only a tool and should be used in conjunction with good mosquito reduction/avoidance measures implemented to protect yourself and your horse. One of the most important measures for prevention of WNV in people and horses relies on avoidance of exposure to mosquitoes by:

- Eliminate mosquito-breeding sites, such as stagnant water contained in birdbaths, flowerpots, old tires, wading pools, etc.
- Keep horses indoors at dusk and dawn, the periods of greatest mosquito activity, and use fans or screens in stalls and barns.
- Apply insect repellents per manufacturer's recommendation.



WNV RISK FOR HORSES

Florida's warm tropical environment and year-round population of mosquitoes increases the risk of human and animal exposure to WNV. However, the percentage of human and equine populations considered at risk is low. When humans and horses are exposed to the virus, only a small percentage are at risk for developing clinical disease. Among horses that develop clinical disease, the outcome is generally favorable with a 20-22% mortality rate.

Humans cannot contract WNV from horses nor can horses transmit the virus to other horses or to humans. Owners should take appropriate measures to protect their horses from the disease by implementing sound mosquito control measures and consulting with their veterinarians about the use of the WNV vaccine.

SURVEILLANCE

Florida has an excellent WNV surveillance program that involves monitoring mosquito pools, sentinel chickens, and equine cases. Based on experience from previous years, one of the first indicators that WNV might be present in an area is the unusually high death rate in birds, especially crows and blue jays. Anyone discovering a dead bird is encouraged to report it on Florida's bird mortality website at www.myfwc.com/bird, or contact the local county health office.

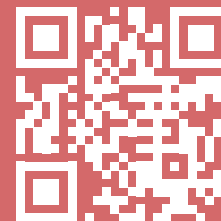


For more information contact:

Florida Department of Agriculture and
Consumer Services
Division of Animal Industry
State Veterinarian's Office

Telephone: (850) 410-0900
24 Hour Reporting: 1-800-342-5869
Email: RAD@FDACS.gov

www.FDACS.gov/AI



WEST NILE VIRUS

Disease Risk and Prevention for Equine

