

## Protecting Your Horse from WNV

A vaccine is available as an aid in control of WNV in horses. The vaccine has been shown safe for use in horses. Effectiveness has not yet been proven; the vaccine has been approved for release under a provisional license until effectiveness is shown, due to the rapidly emerging nature of this disease. The WNV vaccine is a killed, adjuvanted product similar to vaccines against Eastern Equine Encephalitis and Western Equine Encephalitis and is only available through licensed veterinarians. Horses vaccinated against Eastern, Western, and Venezuelan equine encephalitis are not protected against infection with West Nile Virus. Horse owners are advised to consult their veterinarian concerning West Nile Virus vaccination of their horses. Vaccinated horses will test positive on WNV tests.

In addition to the vaccine for horses, simple insect control measures should be utilized. Consider the use of insect repellents, and place horses in barns/stables under fans during dusk, dawn, and other times when mosquitoes are present. Eliminate opportunities for mosquito breeding by draining wet areas of pasture, filling puddles, repairing eave troughs, gutters, etc., clearing any containers that might hold even small pools of water, and draining water tanks once or twice weekly.

## Reporting WNV and Other Reportable Animal Diseases

West Nile Virus is a reportable animal disease. If you suspect that an animal may have WNV, you must immediately contact your veterinarian, state veterinarian, or federal veterinarian.

## Contact Information:

*To report a suspected case of WNV, EEE, WEE, or rabies:*

**Michigan Department of Agriculture**  
Animal Industry Division  
P.O. Box 30017, Lansing, MI 48909  
[www.michigan.gov/mda](http://www.michigan.gov/mda)

Monday-Friday, 8:00 A.M. – 5:00 P.M.  
(517) 373-1077

*or:*

**United States Department of Agriculture**  
**Animal and Plant Health Inspection**  
**Service, Veterinary Services**

Monday-Friday, 8:00 A.M. – 5:00 P.M.  
(517) 324-5290

*Veterinarians may submit blood samples for WNV testing to:*

**National Veterinary Services Laboratory**  
1800 Dayton Road  
Ames, Iowa 50017  
515-663-7357

**Animal Health Diagnostic Laboratory**  
B629 West Fee Hall  
Michigan State University  
East Lansing, MI 48824-1316  
517-353-5275

**For more information,** visit the Michigan Department of Agriculture Web site at [www.michigan.gov/mda](http://www.michigan.gov/mda)

# West Nile Virus in Horses



## Diagnosis and Prevention Tips

prepared by the

**Michigan Department of Agriculture  
& Michigan State University,  
College of Veterinary Medicine and  
Department of Animal Science**

## What is West Nile Virus?

West Nile Virus (WNV) is a mosquito-borne virus that causes encephalitis (inflammation of the brain) and/or meningitis (inflammation of the lining of the brain and spinal cord). Outbreaks of WNV have occurred in Egypt, Asia, Israel, Africa, and some parts of Europe and Australia. The virus was first found in the U.S. in the fall of 1999 in New York City, and has since spread to southern and midwestern states, including Michigan.

## Birds: the Primary Reservoir Species for WNV

WNV infects and multiplies in birds, which then serve as the reservoir species for the virus. At least 76 types of birds are capable of carrying the virus. The impact of the disease in birds varies, with American Crows frequently dying from the infection. Many other bird species survive infection with mild or no indication of disease.

WNV is spread from bird to bird by mosquitoes, when they bite, or take a blood meal, from birds that are infected with the virus. Mosquitoes are also capable of spreading the virus to horses, humans, and other mammals. Migrating birds may have a significant impact on the spread of the virus across the U.S.

Birds that are infected with WNV may show signs such as the inability to fly, incoordination, abnormal movements, and death.

## WNV in Horses

Most horses bitten by carrier mosquitoes do not develop disease. Of those that do, approximately one-third develop severe disease and die or are so affected that euthanasia is required. The incubation

period, or the time between the bite of an infected mosquito and when clinical signs appear, ranges from seven to 14 days.

Although horses do not usually develop clinical symptoms of WNV, horses that do become ill may show symptoms ranging from very mild signs to deadly illness. Typical signs include ataxia (incoordination, stumbling, limb weakness) that either appears suddenly or appears gradually and worsens, sleepiness, dullness, listlessness, facial paralysis (droopy eyelids, lower lip), and an inability to rise. Some horses may develop mild fevers, blindness, muscle trembling, seizures, and other signs.

Horses can not spread the disease to humans, but humans are susceptible to the disease if bitten by a carrier mosquito.

## WNV in Other Mammals

WNV may be capable of infecting mammals other than horses or humans. Antibody has been found in blood samples from bats, cats, chipmunks, gray squirrels, domestic rabbits, eastern striped skunks, cows, sheep, and pigs. Although some of these animals may become ill, unlike horses and humans, they do not show signs of or develop encephalitis.

There is no evidence that infected horses, humans, or other animals are able to transmit the virus to other animals, people, or mosquitoes. Only a wild bird/mosquito transmission cycle has been proven as a means of transmitting WNV.

## Diagnosis of WNV in Horses

Diagnosis of WNV infection in horses involves testing the blood serum for antibodies against the virus.

Since horses vaccinated for WNV and foals of positive-testing mares are likely to have a positive blood test for the virus, veterinarians consider blood test results, clinical symptoms and the possibility of other neurological diseases, including rabies, Eastern Equine Encephalitis (EEE), Western Equine Encephalitis (WEE), and Equine Protozoal Myeloencephalitis (EPM), before making a diagnosis.

Blood samples should be collected by a veterinarian and sent to the National Veterinary Services Laboratory or to the Animal Health Diagnostic Laboratory (AHDL) at Michigan State University. The heads of horses that die or are euthanized due to neurological disease should be submitted for testing to the AHDL. The Michigan Department of Agriculture may provide transportation of the specimen to the AHDL, and may also cover the laboratory expenses. Addresses and contact information are listed on the back of this brochure.

## Treatment and Long-term Effects of WNV

Currently, there is no specific treatment for the disease caused by WNV. Supportive therapy should be administered by the horse owner's veterinarian to reduce clinical signs and the possibility for secondary infections. When a horse becomes infected, with or without clinical disease, that horse develops antibodies in response to the infection. Infected horses can acquire long lasting immunity to WNV after recovery due to these antibodies. If the horse develops encephalitis, there may not be full recovery and the horse may possibly have permanent CNS damage.