



# Extension FactSheet

Veterinary Preventive Medicine, 1900 Coffey Road, Columbus, OH 43210

## What Horse Owners Should Know About West Nile Virus

### What Is West Nile Virus?

West Nile Virus (WNV) is a viral disease previously seen only in Africa, Asia, and southern Europe. This virus can cause encephalitis or meningitis, infection of the brain and the spinal cord or their protective covering. For the past six years, WNV has caused disease in the United States.

In 1999, at least 62 people became seriously ill, and seven of those died. Since then, WNV has rapidly spread throughout North America. During the year 2000, 21 human cases of WNV encephalitis were reported in the United States, with two deaths. In 2001 there were 56 cases with seven deaths.

In 2002, 4,156 human cases of WNV encephalitis or WNV fever were reported, with 284 fatalities. During 2003, almost 10,000 human cases of WNV encephalitis and fever were reported from 46 states, with 208 fatalities. In 2004, there were some 2,500 human cases with 87 deaths, with the cases occurring primarily in the western United States. In 2005, there were 2,800 cases with 105 deaths.

In Ohio in 2005, WNV was reported in birds, mosquitoes, humans, and horses. There were 61 human and 15 horse cases identified. It is expected that WNV will continue to be a disease threat in 2006.

West Nile Virus is spread to people by the bite of an infected mosquito. The principal transmitter of West Nile Virus is the Northern House Mosquito (*Culex pipiens*). Mosquitoes first become exposed to the virus when they feed on birds that are infected with WNV. Once the mosquito is infected, it may transmit the virus to people or other animals when it bites them. Many birds can be infected with WNV, but crows and blue jays are most likely to die from the infection. Horses, too, are prone to severe WNV infection. People cannot get WNV from another person or a horse that has the disease.

Prepared by:

Continued spread of this disease among wild birds and mosquitoes is anticipated. State, federal, and local agencies are working together to address the health risks of WNV to Ohio families and their animals. Public health officials found WNV in many species of birds, mosquitoes, and horses in 44 Ohio counties during 2005. Once this was known, mosquito control efforts were increased in those areas to protect people from the disease.

### *How could a horse get West Nile Virus?*

Horses become infected with WNV after being bitten by an infected mosquito. There is no evidence that horses can transmit WNV to other horses, birds, or people.

### *What are the signs and the symptoms of West Nile encephalitis in horses?*

In horses that do become clinically ill, the virus infects the central nervous system and causes symptoms of encephalitis. Clinical signs of encephalitis in horses include loss of appetite and depression, in addition to any combination of the following signs — fever, weakness or paralysis of hind limbs, muscle fasciculations or muzzle twitching, impaired vision, ataxia (incoordination), head pressing, aimless wandering, convulsions, inability to swallow, circling, hyperexcitability, or coma.

**It is important to note that not all horses with clinical signs of encephalitis have West Nile encephalitis.** Other diseases, including rabies, botulism, equine protozoal myeloencephalitis (EPM), and other mosquito-borne viral encephalitic diseases of horses caused by Eastern, Western, and Venezuelan encephalitis viruses, can cause a horse to have symptoms similar to WNV. If you are concerned your horse may be exhibiting signs of encephalitis, please contact the Ohio Department of Agriculture or your veterinarian. Only laboratory tests can confirm the diagnosis of West Nile encephalitis.



Ohio Department of Health • Ohio Department of Agriculture • Ohio Department of Natural Resources

The Ohio State University • Ohio Environmental Protection Agency • Association of Ohio Health Commissioners

Ohio Mosquito Control Association • Ohio Environmental Health Association • United States Department of Agriculture

***Is there treatment for West Nile encephalitis in horses?***

Currently, there is no specific treatment for West Nile encephalitis in horses. Supportive veterinary care is recommended.

***Is there a vaccine to protect my horse from West Nile Virus?***

Currently, there are four vaccines available against West Nile Virus. It is imperative that horses are vaccinated according to the label on the vaccine. At least one yearly booster is recommended after the initial series. Horses that are stressed, such as show and race horses, should have two boosters annually, in April and late July. Horses vaccinated against Eastern, Western, and Venezuelan equine encephalitis are **not** protected against West Nile Virus.

***How can I prevent mosquitoes from affecting my horses?***

There are some easy steps you can take to prevent mosquitoes from affecting your horses.

- House horses indoors during peak periods of mosquito activity (dusk and dawn).
- Avoid turning on lights inside the stable during the evening and overnight. Mosquitoes are attracted to lights.
- Place incandescent bulbs around the perimeter of the stable to attract mosquitoes away from the horses. Black lights do **not** attract mosquitoes well.
- Remove all birds, including chickens, that are in or close to the stable.
- Look around the property periodically for dead birds, such as crows. Any dead birds should be reported to the local health department. Use rubber gloves to handle dead birds or use an implement, such as a shovel.
- Eliminate areas of standing water on your property. Shallow standing water, used tires, manure storage pits, and drainage areas with stagnant water are ideal mosquito breeding places.
- Topical preparations containing mosquito repellents are available for horses. Read the product label before using and follow all instructions.
- Use fans on the horses while in the stable to help deter mosquitoes.
- Fog stable premises with a pesticide in the evening to reduce mosquitoes. Read directions carefully before using.

For help in assessing mosquito exposure risks on your property and for suggested control practices, please contact your county Extension office, county Department of Environmental Protection, local Department of Health, local veterinarian, or a mosquito and pest control company.

***How can I reduce the number of mosquitoes around my home and neighborhood?***

You can reduce the number of mosquitoes around your home and neighborhood by reducing the amount of standing water available for mosquito breeding. Here are some simple steps

you can take.

- Dispose of tin cans, plastic containers, ceramic pots, or similar water-holding containers on your property.
- Pay special attention to discarded tires. That's where lots of mosquitoes breed.
- Clean clogged roof gutters every year, particularly if the leaves from surrounding trees have a tendency to plug up the drains. Millions of mosquitoes can breed in roof gutters each season.
- Turn over plastic wading pools when not in use. A wading pool becomes a place for mosquitoes to breed.
- Turn over wheelbarrows and do not let water stagnate in birdbaths. Both provide breeding habitats for domestic mosquitoes.
- Aerate ornamental pools or stock them with fish. Water gardens can become major mosquito producers if they are allowed to stagnate.
- Clean and chlorinate swimming pools when not in use. A swimming pool left untended by a family on vacation for a month can produce enough mosquitoes to infest an entire neighborhood. Mosquitoes may even breed in the water that collects on pool covers.
- Use landscaping to eliminate standing water that collects on your property. Mosquitoes may breed in any puddle that lasts for more than four days.

***Can a horse with West Nile Virus infect horses in neighboring stalls?***

No. There is no documented evidence that West Nile Virus is transmitted from horse-to-horse. However, if at all possible, horses with suspected West Nile Virus should be isolated from mosquitoes and tested for the virus.

***What is Ohio doing to prevent a West Nile Virus outbreak?***

In response to the finding of WNV in the United States, state agencies, local governments, and health professionals have launched a plan to find and control the mosquitoes known to carry the virus. We are testing certain animal populations for the virus and monitoring public health to provide early warnings.

***What is the incubation period?***

The incubation period for a West Nile Virus infection is usually five to 15 days.

***Do birds infected with the virus die or become ill?***

Large numbers of North American crows and other birds have died of WNV infection.

***What about ticks?***

Some ticks in Europe and Asia have been found to be infected with the virus. Therefore, infected ticks could prove to be a carrier and transmitter of the virus in the future. The U.S. Centers

for Disease Control and Prevention also tested ticks in the 1999 outbreak area, but none were infected.

***Where can I get more information about West Nile Virus?***

For more information, call the United States Department of Agriculture at 614-469-5602 or the Ohio Department of Agriculture at 614-728-6220.

**What Is the Status of WNV in Ohio?**

WNV was confirmed in Ohio in 2005. Infected mosquitoes, birds, horses, and humans were found in 44 Ohio counties. Therefore, the virus is present throughout the state. Contact your local

health department or log on to the web sites listed here for the current status on WNV in Ohio and for more information.

Ohio State University:

**<http://prevmed.vet.ohio-state.edu/Extension/WestNile/WNV.htm>**

Ohio Department of Health:

**<http://www.odh.state.oh.us/ODHPrograms/ZOODIS/Zoo-Main1.htm>**

National Pesticide Telecommunication Network website:

**<http://ace.orst.edu/info/nptn/>**

Visit Ohio State University Extension's web site "Ohioline" at <http://ohioline.osu.edu>

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