



Extension FactSheet

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

Farmers and West Nile Virus

What is West Nile Virus?

West Nile Virus (WNV) is a viral disease that can cause encephalitis or meningitis, infection of the brain and the spinal cord or their protective covering. Prior to 1999, the disease was found only in Africa, Asia, and southern Europe. Over the past several 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 66 cases with nine 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 264 fatalities. Since 2003, WNV cases and fatalities have continued to remain fairly high. The yearly number of cases and number of fatalities have fluctuated depending on the weather conditions throughout the nation. It is expected that WNV will continue to be a serious disease threat well into the future.

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

Year	United States		Ohio	
	Cases	Deaths	Cases	Deaths
1999	62	7	0	0
2000	21	2	0	0
2001	66	9	0	0
2002	4,156	284	441	31
2003	9,862	264	108	8
2004	2,539	100	12	2
2005	3,000	119	61	2
2006	4,266	177	48	4
2007	3,623	124	23	3

WNV infection. People cannot get WNV from another person or horse that has the disease.

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. Ohio public health officials test for WNV in many species of birds, mosquitoes, and horses. Once infected areas are identified, mosquito control efforts are increased in those areas to protect people from the disease.

What Farmers Should Know About West Nile Virus *Who is most at risk?*

People over 50 years of age have the highest risk of developing severe illness because, as we age, our bodies have a harder time fighting off disease. People with compromised immune systems are also at risk. However, anyone can get the virus.

Prepared by:



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

What are the symptoms?

People with mild infections may experience fever, headache, body aches, skin rash, and swollen lymph glands. People with more severe infections may experience high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, occasional convulsions, paralysis, and rarely death. If you have any of these symptoms, contact your doctor.

Is there treatment?

There is no specific treatment for WNV infection. While most people fully recover from the virus, in some severe cases hospitalization may be needed.

What is Ohio doing to prevent mosquitoes from breeding?

The state departments of Health, Environmental Protection, Agriculture, and Natural Resources have created a comprehensive statewide plan to try to prevent a virus outbreak in Ohio. One of the main objectives of the program is to reduce potential mosquito breeding sites across the state. Eliminating places for mosquitoes to breed is an important part of an integrated pest management program, and, whenever possible, is the preferred solution to mosquito control.

Is my farm a mosquito-breeding site?

Several habitats found on farms can support the production of mosquitoes. Larvae can develop in watering troughs, small ponds, irrigation ditches, rain barrels, manure lagoons, ruts where farm equipment frequently travels, and other areas where water is allowed to accumulate. Even hoof prints can accumulate water and provide a breeding habitat. The close proximity of livestock, nuisance animals (such as birds), and other animals to mosquito breeding habitats increases the risk for the transmission of animal and human disease.

What should I do about birds (both alive and dead) on my farm?

Remove all bird nests from farm buildings. Periodically look around the property for dead birds, such as crows.

Any dead birds should be reported to your local health department. Dead birds can be tested for WNV if they have been dead less than 48 hours. Use rubber gloves or an implement, such as a shovel, to handle dead birds.

How can I prevent mosquitoes from breeding?

There are many ways to eliminate mosquito breeding areas on farms. This might include improving drainage in areas that are irrigated, or using stone to fill in ruts where farming equipment frequently travels. Make sure you thoroughly clean watering troughs regularly.

Remove or frequently empty any containers that accumulate water, including discarded tires and old equipment. Where the farm uses tires to maintain the plastic on silos, the tires should be split or treated with larvicides. Aerate small ponds and stock them with fish.

In situations where eliminating mosquito breeding areas is not a practical alternative, larviciding is the most effective control technique. Several larvicides are well suited for wastewater treatment facilities, including *Bacillus sphaericus*, *B. thuringiensis israelensis* (*B.t.i.*), Temephos, growth regulators, oils, and mono-molecular films. A local pest control company can help you to determine which product would best suit your situation, and what type of control activities should be conducted.

What is the status of WNV in Ohio?

WNV has been confirmed in Ohio every year since 2001. Infected mosquitoes, birds, horses, and humans have been found in all Ohio counties. Therefore, the virus is present throughout the state. Contact your local health department in your area, or visit one of the web sites.

For the current status on WNV in Ohio and for more information, you can log on to the following web sites:

The Ohio State University:
<http://vet.osu.edu/1516.htm>

Ohio Department of Health:
<http://www.odh.ohio.gov/odhprograms/idc/zoodis/wnv/wnv1.aspx>

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