

West Nile Virus Infection Threatens Horses

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West Nile Virus (WNV) primarily causes disease in birds and is usually spread by a mosquito, but it occasionally causes disease in horses.

Horses become infected with WNV by the bite of a mosquito which previously (at least six to 10 days earlier) fed on a bird infected with WNV. Infection does not always cause clinical disease in horses.

In the recent outbreak of WNV on Long Island, N.Y., as many as a third of the horses on the outbreak farms may have been infected but only 14 percent developed disease.

When horses have clinical signs, the disease can be very serious. Half of the clinically affected horses on Long Island died or were euthanized. This is the only outbreak of WNV in horses ever reported in North America, but the disease in horses has been frequently reported in Europe and Africa with similar results.

Horses with West Nile Fever can have a variety of clinical signs. They may have a mild flu-like syndrome with fever, depression, listlessness, and occasionally somnolence. When fever occurs, it may be biphasic, with the early fever associated with mild flu-like signs and a second fever a week later associated with the onset of more serious neurologic signs.

Some cases will develop muscle fasciculations and an unusual muzzle twitching. They may show more serious neurologic signs including incoordination and ataxia (stumbling), circling, aimless wandering, head pressing, and hyperexcitability followed by convulsions, coma, and death.

In some outbreaks a progressive hind limb paresis (incoordination, ataxia, stumbling) progressing to complete hind limb paralysis (inability to rise behind) and finally front leg involvement is reported as typical.

Simultaneously, brain signs will be progressive (depression, somnolence or hyperexcitability, convulsions, coma). Death may occur within five to 10 days of development of serious signs in half of the cases. The other half will recover with the most dramatic improvement within three weeks.

West Nile virus is primarily transmitted between birds by mosquitoes. Occasionally virus-carrying mosquitoes will bite mammals exposing them.

The Veterinary Services section of Animal and Plant Health Inspection Service (APHIS)/USDA has concluded, based on experimental inoculations carried out on horses, that horses are not involved in the transmission cycle on WNV. That is, horses are terminal hosts because they do not maintain a sufficient viremia to infect mosquitoes or other mammals (see the USDA Website at <http://www.aphis.usda.gov/vs/ep/WNV/>).

Previous studies in horses support this conclusion. This means, as stated by the Centers for Disease Control and Prevention, (see the CDC Website at <http://www.cdc.gov/ncidod/dvbid/arb/West-Nile-QA.htm>) that infected horses will not transmit WNV to other horses or to people. So an infected horse is not a threat to other horses in contact with it and people cannot contract West Nile Fever by caring for an infected horse. However, special care should be taken when handling blood, spinal fluid, or nervous tissue from suspect animals, since these may contain virus.

The virus has not yet been identified in Pennsylvania or Delaware; however it has been found in birds in New York, Connecticut, New Jersey, and in one bird in Maryland (see USDA Website for a map). The virus is introduced into an area through infected birds.

In the outbreak last fall, some infected birds developed neurologic signs such as ataxia (loss of coordination), tremors, abnormal head posture, circling, and

convulsions followed by death. The appearance of dead birds in an area may be an early warning that the virus is present. When handling dead birds that may have died from WNV infection, care should be taken.

There is no evidence that people can catch this disease from dead birds, but the Center for Disease Control and Prevention recommends that no one should ever touch any dead animal barehanded. Call your local health department for proper procedures for handling of dead birds.

How can horses be protected from WNV infection if the virus enters the area? The key is mosquito control to stop the bird-mosquito infection cycle. The primary mosquito vector is *Culex* spp. This mosquito spends its entire life within a range of about 1,000 yards. Thus local control can be very effective in stopping WNV transmission.

The most effective method of mosquito control is to destroy the mosquito larval habitat. *Culex* mosquitoes can breed in any puddle that lasts more than four days. So it is important to reduce the amount of standing water available for breeding such as water troughs (should be cleaned at least once or twice a week), water buckets not in use, plastic wading pools, bird baths, wheelbarrows, clogged roof gutters, discarded tires, tin cans, plastic containers, ceramic pots, or any water-holding container.

Although less effective than preventing mosquito breeding, efforts to limit the horse's exposure to adult mosquitoes can also be attempted. Horses should be stabled inside during peak mosquito feeding times which are dusk and dawn. Also, insect repellent approved for horses can be used (always follow label instructions).



CASHS Team Participates In Pa. Envirothon

CHAMBERSBURG (Franklin Co.) — Penncrest High School, Delaware County, has won the 17th Annual Envirothon and will represent Pennsylvania at the National Envirothon in Nova Scotia, Canada, July 31-Aug. 6.

The 13th National Canon Envirothon will be at Acadia University in Wolfville, Nova Scotia, Canada. Pennsylvania has won the national event in 1988, 1989, 1994, and 1997.

"The Pennsylvania Envirothon program is an essential part of our students' environmental education," Department of Environmental Protection Secretary James Seif said. "Pennsylvania students learn about the environment, ways to care for it, what to do to protect it, and, ultimately, gain respect for nature."

More than 300 high school students from 62 counties participated in this year's Envirothon, representing more than 500 school districts, 61 conservation districts, and Philadelphia County. The annual event was May 25 at Shawnee State Park, Bedford County.

Placing 17th overall in the competition from Franklin County, the team members from

Chambersburg Area Senior High School (CASHS) include Tyler Black, Greg Hershey, Seamus Suders, Matt Booher, and Tom Harwood. The team's faculty adviser is Eddie Parsons.

This team won first place at the local Envirothon competition at Cowans Gap State Park on April 26 sponsored by the Franklin County Conservation District. The District's Environmental Education Coordinator Donna Hays plans the event locally with Fulton County Conservation District's Coordinator Karen Kelly.

The Envirothon tests students' knowledge of environmental resources and their relation to each other and human activities. Students in grades nine through 12 complete exercises in aquatics, forestry, soils, wildlife, and a current environmental issue. The 2000 current issue was wetlands management.

Technical expertise for the Envirothon is provided by the Department of Environmental Protection, the Department of Conservation and Natural Resources, the Pennsylvania Game Commission, the Pennsylvania Fish and Boat Commission, and the USDA's Natural Resources Conservation Service.

Tobacco Board

Awards Scholarships

LANCASTER (Lancaster Co.) — The Tobacco Board of Trade was founded in 1905 to promote equitable principles and foster trade and commerce for the tobacco industry in Lancaster County.

The board is trying a new endeavor this year by offering scholarships for students furthering their education in an agricultural field. This is to

encourage a new generation to preserve our agricultural heritage.

The board has awarded three scholarships for the year 2000. The winners are Audrey Nissly of Penn Manor High School, \$2,000; Russell Howard of Lampeter-Strasburg High School, \$1,500; and Melinda Morrison, runner-up of Ephrata High School, \$1,000.

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