

FACTSHEET

Veterinary Services

United States
Department of
Agriculture

Animal and
Plant Health
Inspection
Service

April 2000

West Nile Virus

West Nile is a type of virus that causes encephalitis, or inflammation of the brain. The virus has been found in Africa, western Asia, the Middle East, the Mediterranean region of Europe, and most recently in the New York City area.

The virus is transmitted by mosquitoes that acquire it from infected birds. Humans and horses may be infected by the virus, but there is no documentation that infected horses can spread the virus to uninfected horses or other animals. Migrating birds may play a role in spreading the disease.

West Nile Virus in the United States

On September 14, 1999, the National Veterinary Services Laboratories (NVSL) of the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) isolated a virus from neurological and other tissues of flamingos and tragopans (pheasants) from the Bronx Zoo and crows from the New York City area.

Samples of the isolated virus were sent to the Department of Health and Human Services' Centers for Disease Control and Prevention (CDC) for identification. On September 27, CDC officials announced that the isolated virus was very similar to that of the West Nile virus, previously unseen in the Western Hemisphere. CDC later confirmed the virus as West Nile and connected it to an encephalitis outbreak that killed 7 people and infected at least 55 others in the New York City area. It was also identified in crows and wild birds in Connecticut, New Jersey, and one county in Maryland.

Because this virus is transmitted by mosquitoes, it has the potential to affect livestock and poultry. A total of 25 horses were diagnosed with encephalitis caused by West Nile virus. All the horses were located on Long Island, NY, with 22 found in the Riverhead area of eastern Suffolk County. Of these 22 horses, 9 died or were euthanatized. No horses outside the Riverhead area died due to West Nile virus.

Clinical signs of West Nile virus infection in the New York horses included listlessness, stumbling and incoordination, weakness of limbs, ataxia, partial paralysis, or death. Fever was not generally observed.

The role of commercial poultry in maintaining or transmitting the virus is not thoroughly understood. According to scientific literature, chickens can develop a short-lived infection, but clinical signs are not seen.

Federal Actions to Protect Agriculture

Any horses showing clinical signs of encephalitis, in which other common causes such as rabies can be ruled out, will be investigated by APHIS' Veterinary Services (VS) program as a potential foreign animal disease. VS developed a good diagnostic test for West Nile virus and is on the lookout for virus activity along the Atlantic seaboard. APHIS' Wildlife Services (WS) program will carry out wild bird specimen collection, initially focused on East Coast States from Connecticut to Florida, for West Nile virus testing.

USDA's Agricultural Research Service has conducted inoculation studies with turkeys. NVSL did the same with chickens and NVSL's Foreign Animal Disease Diagnostic Laboratories conducted studies with horses. Only chickens showed the likely potential to produce enough virus in their blood to infect mosquitoes. Each species developed antibodies after being inoculated, and encephalitis was not observed in any of the animals.

Although no clinical signs of the virus have been reported in U.S. poultry, VS will treat all situations where birds show neurological signs as a potential for foreign animal disease. This will allow NVSL to rule out exotic poultry diseases, such as Newcastle disease and highly pathogenic avian influenza, before testing for West Nile.

The CDC, the U.S. Geological Survey's National Wildlife Health Center, and USDA are cooperating to survey for the virus in a wide range of wild birds. This Federal working group, in conjunction with relevant State agencies, will gather and analyze surveillance data to define the extent to which the

virus may be distributed in mosquito and bird populations in States along the Atlantic and Gulf Coasts.

How You Can Protect Your Animals

You can decrease the chances of your animals being exposed to the virus. Preventing exposure of animals to mosquitoes is essential. The best way to do this is by removing any potential sources of water in which mosquitoes can breed. Dispose of any water-holding containers, including discarded tires. Drill holes in the bottom of containers that are left out-of-doors. Clean clogged roof gutters on an annual basis. Turn over plastic wading pools or wheelbarrows when not in use, and do not allow water to stagnate in bird baths. Aerate ornamental pools or stock them with fish. Clean and chlorinate swimming pools that are not in use and be aware that mosquitoes can breed in the water that collects on swimming pool covers. Use landscaping to eliminate standing water that collects on your property; mosquitoes can breed in any puddle that lasts more than 4 days. Thoroughly clean livestock-watering troughs on a monthly basis. Local mosquito-control authorities can help in assessing the mosquito breeding risks associated with your property.

No vaccine or treatment is currently available for the virus, however, VS is working to assist all companies interested in producing a vaccine.

Additional Information

For more information about West Nile virus, contact

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For more information about human health issues related to West Nile virus, check the CDC Website (www.cdc.gov).

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