

# NEBRASKA TECHNICAL NOTE



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## WEST NILE VIRUS General Information

As you head out into the fields for another season, you should be aware of a fairly new disease possibly moving into the area. West Nile virus, classified as a *Flavivirus*, a relative of the encephalitis virus, is a mosquito-borne virus that is spreading westward across the country.

Migratory birds are the most common hosts of the virus and spread it to mosquitoes, which act as the vector. The mosquitoes acquire the virus when they feed on a bird that is carrying the virus. Infected mosquitoes can then transmit West Nile virus to humans and animals while biting to take blood. Following transmission by an infected mosquito, West Nile virus multiplies in the person's blood system and crosses the blood-brain barrier to reach the brain. The virus interferes with normal central nervous system functioning and causes inflammation of brain tissue. There is no information to suggest that West Nile virus is transmitted through human-human or human-animal contact. Mosquitoes are the only species known to transmit the disease to either humans or animals.

West Nile virus was first isolated from an adult woman in the West Nile District of Uganda in 1937. The first known human case of West Nile virus infection recorded in the Western Hemisphere was reported in August 1999, in New York City. During this outbreak there were 62 confirmed cases of the disease, resulting in seven deaths. Through the end of 2001, West Nile virus has been documented in 27 states, plus the District of Columbia, killing a total of 18 people along the east coast.

### Summary of National West Nile virus Statistics

Year	States	Human Cases	Deaths
1999	4	62	7
2000	12	21	2
2001	27	66	9
	<i>Totals</i>	<i>149</i>	<i>18</i>

Most infections are mild, and symptoms include fever, headache, and body aches, occasionally with skin rash and swollen lymph glands. These symptoms usually occur within three to 15 days after being exposed to the virus. More severe infection may be marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and in rare cases, death. Among those with severe illness, case-fatality rates ranged from 3%-15% and are highest among persons over the age of 50. A vaccine is not yet available for treatment of the virus, although several companies are working on creating one.

There is no specific treatment therapy for West Nile virus. In more severe cases, intensive supportive therapy is indicated, for example, hospitalization, nutrition and airway management, prevention of secondary infections (such as pneumonia) and good nursing care. If you think you have been infected with the virus you should contact your local health care provider.

The amount of West Nile virus activity has grown steadily in the last three years. The virus originally surfaced in New York and remains predominantly along the East Coast. Although each year the documentation of virus activity continues to move west, most recently activity has been documented in Illinois, Indiana, Iowa and Missouri. Most of the activity has occurred in birds and horses. Activity can be monitored by observing the number of dead birds found and reporting dead bird sightings to the Nebraska Health and Human Services. Crows, sparrows and blue jays are the most commonly affected birds. Dead birds should not be handled with bare hands.

There are numerous steps that can be taken to prevent the spread of West Nile virus. During the times when mosquitoes are most active, from April to October, the following precautions should be taken. If outside during the evening, nighttime and dawn hours be sure to wear protective clothing (long pants, long-sleeved shirts, and socks) and consider the use of an insect repellent.

Additional information is available on the Internet and can be found at these sites:

Center for Disease Control

<http://www.cdc.gov/ncidod/dvbid/westnile/>

Nebraska Health and Human Services

<http://www.hhs.state.ne.us/epi/wnv.htm>

<http://www.hhs.state.ne.us/epi/wnv/wnvindex.htm>