

West Nile Virus

Although West Nile virus does not affect cattle, it is a zoonotic disease which means it affects people and animals. Many in our industry have horses or are exposed to mosquitoes and, therefore, should be well informed. Weld County is now considered a “hot bed” for the disease in the state with the most confirmed affected horses.

On August 15, 2002, three horses and a crow in the state of Colorado tested positive for West Nile Virus. Two of the horses and the crow were found in Weld County and the other horse was in Pueblo County. The following are a few facts about West Nile Virus. For more information see the websites at the bottom of this fact sheet.

What is West Nile Virus?

West Nile was first identified in the United States in 1999. This is a mosquito-borne virus that causes an inflammation in the brain called encephalitis. The mosquitoes obtain the virus from birds and pass it along to other birds, humans, and other animals. The virus tends to follow closely with migratory patterns of birds. Birds are the only known source for disease transmission. Humans and other animals do not carry enough virus in their blood to be transmitted to other animals or humans.

What are the symptoms of the disease?

Horses – listlessness, stumbling, incoordination, weakness of the limbs, partial paralysis, and death. Usually there is not a fever. Of the horses affected in the United States, only 32% have been euthanized or died from the infection. It is likely that most horses recover from the infection without showing any signs of illness.

Birds – The virus has been detected in at least 110 species of birds, however it affects the Corvids (crows, magpies, ravens, and jays) the most severely, causing illness and death.

Cats and Dogs – West Nile does not appear to cause extensive illness in the dog or cat. Although one dog in Illinois has died of WNV, the dog was immunocompromised due to another illness.

Other animals may be exposed to the virus but do not seem to become ill from it.

Humans – Most people who are infected with the virus do not become ill or do not have any symptoms. If symptoms do arise they usually occur 5-15 days after being bitten by a mosquito.

There are two clinical types of disease that occur in humans

1. viral fever syndrome causing fever, headache, and malaise. These symptoms last for about 2-7 days.
2. encephalitis, an inflammation of the brain. Symptoms are a sudden onset of fever and a headache, and then may progress to a stiff neck, disorientation, tremors, and coma. Severe infections can result in brain damage or death. This form tends to occur in adults 50 years of age or older.

Is there any treatment?

No. There is not a specific treatment for the infection except for supportive care.

How can I prevent infection?

The best way to prevent infection is to control the mosquito population.

Humans – (these guidelines are taken from the Colorado Department of Public Health and Environment)

- Limit outside activity around dawn and dusk when the mosquitoes feed.
- Wear protective clothing such as light-weight pants and long sleeved shirts when outside
- Apply insect repellent to exposed skin. Repellents with DEET are effective but should be used sparingly. Those with less than 10% DEET should be used in children
- Drain all standing water on private property
- Stock permanent ponds with fish that eat mosquitoes and/or their larvae
- Change water in birdbaths, wading pools, or other standing water at least once a week
- Do not over water lawns and gardens to prevent standing water

- Make sure that doors and windows have tight fitting screens. Repair or replace screens that have tears or holes in them.

Horses –

- Remove any potential water sources in which mosquitoes can breed (i.e. standing water).
- Thoroughly clean livestock water troughs on a monthly basis.
- Use mosquito repellents and sheets or light blankets to decrease your horse's exposure.
- Stable horses during peak hours of mosquito activity (dawn and dusk).
- Vaccination – there is a vaccination available for your horse. The first time immunization takes two doses 3 to 6 weeks apart. An annual booster is required every year thereafter. The vaccine is only available through a licensed veterinarian.

Diagnosis:

The disease is diagnosed through either IgM ELISA or PCR. Samples can be sent in Monday through Wednesday. The fee is \$4.75 per sample and the results can be obtained within 48 hours.

Serum samples from suspected cases can be sent to:

The Colorado Department of Agriculture's Rocky Mountain Regional
Animal Health Laboratory
2331 W. 31st Ave.
Denver, CO 80211
303-844-3185

Serum from genuine encephalitis cases for IgM ELISA can be sent to:

Weld County Department of Public Health and Environment
Attn: Laboratory
1555 North 17th St.
Greeley, CO 80631
970-304-6415 x 2275

The cost is free, but you will need a request form for laboratory testing.

Brain or other CNS tissues for PCR goes to

National Veterinary Services Laboratory
13th St. and Dayton Rd
Ames, IA 50010
510-663-7200

Dead Birds:

Send chilled fresh or frozen corvid only carcasses for PCR to:

Colorado Department of Public Health and Environment
Attn: Virus Laboratory
8100 Lowry Blvd.
Denver, CO 80230-6928
303-692-2700

The cost is free but you need to have a submission form.

The Colorado State University Diagnostic Laboratory does not take samples for testing.

For more information please see the following websites:

Center for Disease Control – <http://www.cdc.gov/ncidod/dvbid/westnile/>

USDA APHIS – <http://www.aphis.usda.gov/oa/wnv/>

Colorado Department of Public Health and Environment – (updated daily)

<http://www.cdphe.state.co.us/dc/zoonosis/zoonosis.asp>

Colorado Department of Agriculture – (updated daily)

http://www.ag.state.co.us/animals/Animal_Diseases/Andislinks.html

American Veterinary Medical Association – <http://www.avma.org>

Information on Mosquito Control – <http://npic.orst.edu/wnv/>

Insect Repellent Safety – <http://www.epa.gov/pesticides/citizens/insectrp.htm>