

2003
West Nile Virus (WNV) Vaccination
Fact Sheet for Horses

Cornell University

*New York State Animal Health Diagnostic Laboratory/The NYS College of Veterinary Medicine
and
The Department of Animal Science*

Introduction

In the three years since its discovery in NY, in 1999, WNV has increased its geographic range in the western hemisphere to include nearly all of North America. Each year, during the active mosquito season, the number of clinical WNV encephalitis cases in people, horses, birds, and other mammals has increased exponentially. Increased resources provided by government and private agencies to study the natural biology of WNV in our ecosystem have led to advances in our ability to detect the presence of the virus and to monitor the extent of transmission in different animal populations. Aggressive actions by some health departments to reduce local mosquito populations may have helped prevent human and animal infections in

the targeted areas. In spite of these efforts, WNV has continued to surprise those responsible for tracking, monitoring and preventing WNV transmission with the increasing magnitude and scope of virus activity seen yearly since 1999.

The impact on horses has been especially severe, with over 14,000 encephalitis cases confirmed during 2002. The mortality due to WNV infection in horses has continued to remain at approximately 3% of those infected, with 7–8% experiencing a neurological illness from which they recover. The majority of horses infected (90%) have no signs of illness and just develop an antibody response. Three years of experience dealing with this new immigrant virus has established a pattern of escalating transmission and

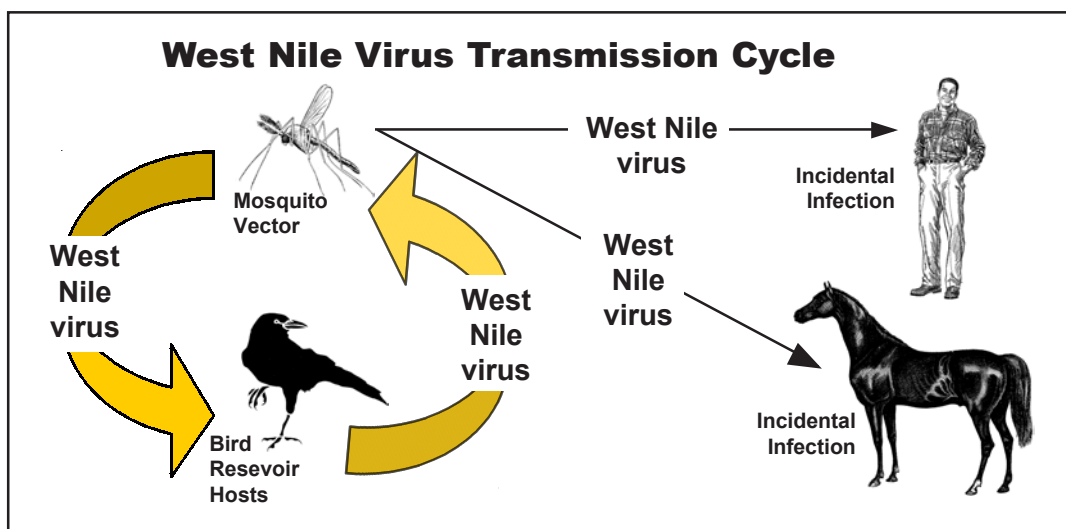


Diagram adapted from the Centers for Disease Control Website -- February, 2003

unpredictable emergence in select geographic areas with very intensive local transmission.

As a response to the uncertainty of what is possible in the next transmission season, it would be prudent for horse owners to adopt a conservative approach to protect their equines. A summary of information regarding equine vaccination and mosquito control is provided below to help you make your management decisions.

What We Do Know About the Vaccine

After more than one year of conditional licensure of the only equine WNV vaccine, information and statistics have been gathered that allow an educated recommendation to be made to the horse community about the safety and efficacy of the WNV vaccine for horses. We now know:

- The vaccine is relatively safe.
- The vaccine must be given in 2 initial, separate doses.
- The 2 initial, separate doses should be given 3-6 weeks apart.
- Both doses need to be administered prior to the onset of mosquito season.
- The vaccine is usually effective, but not in 100% of horses.
- The vaccine is now fully licensed.
- Immunity may not last a full year. Horses that will be in areas with mosquito seasons longer than about 6 months may need additional booster vaccinations.
- Additional boosters should be at the discretion of the veterinarian and the client.

What Is Being Recommended for 2003

No one can predict the severity of the upcoming mosquito season or the prevalence

of WNV in the wild bird population. For maximum protection against WNV:

- Horses in *New York State and vicinity* should be vaccinated for WNV.
- The first year that a horse is vaccinated, 2 initial, separate doses must be given to ensure proper immunity.
- These first 2 initial doses should be given at least 3, but not more than 6, weeks apart.
- Both doses of vaccine should be given prior to the onset of mosquito season.
- If a horse was vaccinated for WNV the year prior with the recommended 2 initial doses, then in subsequent, consecutive years only a booster vaccination is needed.
- The booster vaccination should be given every year.
- The booster vaccination should be given prior to the expected onset of mosquito season.
- If the WNV vaccination history of the horse is not known, give the 2 initial doses and annual vaccinations thereafter.
- Preliminary data suggests that the vaccine has been used safely in pregnant mares and foals.
- The timing of foal vaccinations will depend on the vaccination status of their mothers.
- **Always** talk with your veterinarian about your vaccination needs and schedule.
- The special health requirements of an individual horse may need to be considered by your veterinarian for planning and scheduling a safe and effective vaccination regimen.

General Mosquito Control is still Important to Protect People and Horses

- Keep horses in during dusk and dawn (prime feeding time for mosquitoes).
- Eliminate any standing water on the property.
- Fill in low spots where standing water can accumulate.
- Remove tires, cans, plastic containers, ceramic pots and similar items that can hold water; drill holes in the bottom of recycling bins/containers.
- Turn over wheelbarrows, wading pools, etc. when not in use.
- Clean out clogged rain gutters.
- Dump and clean water troughs daily that are used for animals on your farm; most health departments recommend at least every four days.
- Barn or outside lights tend to attract mosquitoes – limit use during dark hours.
- Use commercially prepared equine insecticides/repellents.
- Remember that insecticides are only effective for short periods of time.
- Use all insecticides according to manufacturer label instructions.
- Horse barns can be screened.
- Do not allow birds to roost or nest in barns, indoor arenas, or hay lofts.
- Keep grass and weeds trimmed, including around buildings, paddocks and fences.

Dead birds

If you find a dead bird, the health department in most counties requests that you contact them. Remove any dead bird from pastures, paddocks, barns, etc. (where horses would have contact with the dead bird). Wear plastic gloves and place the dead bird in a

plastic garbage bag. Immediately wash your hands with soap and water. Dispose of the bird by health department instructions for your county and state.

Once WNV has been identified in an area, there is no advantage to testing every dead bird; the presence of the risk to horses and humans is established with the first confirmed case.

Contact your local health department for current instructions.

Be Aware

Be aware that there are other infectious diseases or conditions that may look similar to WNV clinical cases in horses. Some of these include Rabies, Equine Protozoal Myeloencephalitis (EPM), Equine Rhinopneumonitis (EHV1), Eastern Equine Encephalomyelitis (EEE), Western Equine Encephalomyelitis (WEE), Venezuelan Equine Encephalomyelitis (VEE), many toxins, injuries or other neurological conditions.

Use caution with any case of a sick horse showing neurological signs until rabies or other contagious conditions have been ruled out. In addition, weak or wobbly horses can suddenly fall, making them dangerous to people.

Signs of WNV in Horses

Horses that are infected with WNV many not show signs of illness, may suffer mild illness with a fever but no other signs, or could become very ill with encephalitis that could lead to death.

Some or all of the following signs may be associated with encephalitis due to WNV:

- fever
- listlessness or disorientation
- weakness or paralysis of legs

- incoordination (ataxia)
- inability to stand
- inability to swallow
- facial paralysis
- convulsions
- aimless wandering
- head pressing
- hyperexcitability
- coma
- or death.

Evidence of the virus has also been seen in spontaneously aborted fetuses. The implications of this are still unknown.

Horses and people can not naturally transmit WNV to another horse or person.

For Additional Information or Research Studies

USDA, APHIS, Veterinary Services
4700 River Road, Unit 41
Riverdale, MD 20737-1231
www.aphis.usda.gov

Additional NYS Contacts

Millicent Edison, MA, DVM
State Public Health Veterinarian and Director
New York State Department of Health

Sue Trock, DVM
Infectious Disease Epidemiologist
New York State Dept. of Animal Industry

Websites with More Information

- www.aphis.usda.gov
click “hot issues” then “WNV”
- www.cfe.cornell.edu
“What’s going on with the WNV”

- www.health.state.ny.us/nysdoh/westnile/index.htm
- www.cdc.gov/ncidod/dvbid/westnile/index.htm
- www.pested.psu.edu/spWestNile.html

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