



*Culex mosquito laying eggs on a pond

West Nile Virus in Arizona: Vaccinating for Spring

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As the mosquitoes return to the Valley they bring with them the concern for arboviral (insect-spread) infections. Mosquitoes, gnats, and other types of biting flies are the source of many different infectious diseases in the horse and can even be the source of allergies. Perhaps the most commonly known mosquito spread viruses include West Nile Virus (WNV), Eastern Encephalomyelitis (EEE), Western Encephalomyelitis (WEE), and Venezuelan Encephalomyelitis (VEE).

The West Nile Virus has been well recognized since it made its debut in the Eastern United States in 1999. The virus swept westward across the United States, maintained in our bird population (especially sparrows, jays, finches, and even raptors) over the following years. As a new virus in our naïve population (naïve meaning that we had not been exposed previously and therefore, had no antibodies to defend us) it was very effectively infecting horses and humans from the bird reservoir. Fortunately, this virus is not spread from horse-to-horse or from human-to-human after being bitten by a mosquito; the mosquito must bite an infected bird before infecting the other species. As we have begun to immunize our horse population we have greatly decreased the numbers of horses infected and affected. Vaccines are designed to stimulate our own immune system to make antibodies to the virus without us having to endure the illness of natural infection. No vaccine is 100% protective; however, the vaccination for West Nile virus has been shown to reduce the severity of illness (morbidity), as well as the number of horses that die from infection (mortality). There is currently not a West Nile Virus vaccine that is approved for use in humans.

Signs of West Nile Virus in horses can include a variety of signs from general lethargy, to lameness, and neurological signs such as: twitching, hypersensitivity, head pressing, ataxia (wobbliness), dog sitting or praying, and death. In people, it can begin as a general flu-like malady that progresses to neurologic signs and patients may or may not have a fever. Treatment is supportive, and is best given early in the disease progression.

Although the case numbers in Arizona continue to decline, it is important that we keep our horse population protected and that we continue to monitor and control sources of

mosquito breeding grounds to prevent resurgence of disease. Surveillance is conducted by the state veterinary lab in each state and reported to the national Center for Disease Control so that we will have an idea of the prevalence of West Nile Virus in each area.

Our state office reports that 137 of 287 tested horses were positive for West Nile Virus in 2003, 109 of 330 in 2004, and 43 of 192 (22.4% of horses tested were positive) in 2005. The highest numbers of cases were consistently seen in: Maricopa, Pima, and Pinal counties; however cases were reported in several other counties. Cases have been reported in nearly every state in the country, and all horses should be considered susceptible, even if vaccinated.

Horses are first given a series of two vaccinations and then vaccinated bi-annually depending on the mosquito prevalence in your area. Pregnant mares and young horses are also vaccinated. There are now two options for vaccination, a killed virus vaccine made by Fort Dodge, and a live recombinant vaccine (a piece of the WNV is incorporated into a live canary pox virus) from Merial. These vaccines can be given at the same time as your regular spring series of Tetanus, WEE, EEE, and VEE. Speak to your veterinarian about when to vaccinate and which vaccine they prefer to use. In general, you should allow two weeks for a horse to generate protective antibodies and horses are best protected in the early spring before mosquitoes become a problem, it is however, never too late.

Please report any suspected cases of infection to your veterinarian. Because birds are very sensitive to infection with this virus, they make a good sentinel (animal used for prediction of prevalence of infection in an area). If you should find a dead bird on your property, please contact your county health department to have it evaluated within 24 hours. Contact numbers are listed at: www.westnileaz.com/wnv_deadbird.htm.

The above statistics were provided by the Arizona Department of Agriculture, Office of the State Veterinarian with permission.