After the initial vaccinations, horses in Florida should be boostered 2-3 times yearly for maximum protection.

Mosquito Control

Communities are encouraged to eliminate areas of standing water and other potential mosquito breeding sites; reduce outdoor activity between dawn and dusk when mosquitoes are most active; wear clothing that provides more skin coverage, and/or use mosquito repellent to avoid attracting mosquitoes. Focal insecticide applications may also be implemented to reduce the number of adult mosquitoes that transmit arboviruses.

Recently, the strategy has changed from spraying populated areas for adult mosquitoes to aggressively testing for and killing virus-carrying larvae. Early stage larvicides are now thought to be much more effective in preventing virus amplification than adult-stage spraying. In addition, virtually all states have mounted aggressive surveillance of mosquitoes, birds and mammals. The Centers for Disease Control and Prevention has set up the ARBONET and West Nile surveillance guidelines through which states can track movements of WNV and other arboviruses, mostly through reporting and serological testing of dead birds.

For more information on mosquito control, pesticides or arboviruses, log onto the Florida Department of Agriculture, Division of Agricultural Environmental Services website http://www.flaes.org/, then go to the Bureau of Entomology and Pest Control, then Florida Arbovirus WNV/EEE. 7/16/01

Florida West Nile Virus Surveillance and Response Plan

This program involves the monitoring of mosquito pools, sentinel flocks of chickens and sentinel horses. Based on experience from previous years, one of the first indications that WNV might be present in an area is the unusually high death rate of birds, particularly crows or blue jays. The appearance of dead birds in an area might be an early warning that the virus is present. Dead birds should be reported to a local Fish and Wildlife Conservation Commission officer, the local county health department or the Florida Department of Agriculture and Consumer Services (FDACS). The Florida Department of Health (DOH), in conjunction with FDACS, the Florida Fish and Wildlife Conservation Commission (FWCC), local health and mosquito control agencies have developed a WNV Plan which outlines surveillance for humans, birds, mammals and mosquitoes. The plan also provides a tiered prevention, control and response program for WNV depending on the location and type of evidence indicating an outbreak has occurred.

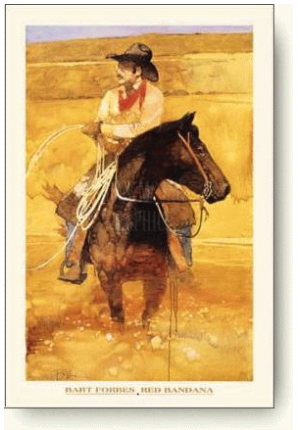
For complete updates and information on the WNV Surveillance and Response Plan, please contact: The Florida Department of Agriculture and Consumer Services, Division of Animal Industry, 407 South Calhoun Street, Mayo Building, Tallahassee, FL 32399-0800.

The Division's website can be accessed at: http://www.doacs.state.fl.us/ai/ or Division personnel can be contacted at 850/410-0900.

log onto the Florida Department of Health's website at http://www.doh.state.fl.us.

Mosquito-Borne

Encephalitis in Humans and Horses



Florida Department of Agriculture and Consumer Services

COMMISSIONER CHARLES H. BRONSON

Mosquito-Borne Encephalitis in Humans and Horses

Arthopod-borne viruses ("Arboviruses") include a group of viruses that can be transmitted to humans and horses by infected mosquitoes. These viruses may cause encephalitis (inflammation of the brain and spinal cord) and even death in some cases. Arboviruses have a worldwide distribution and several of them occur in the United States. In Florida, these viruses include: St. Louis Encephalitis (SLE), Eastern Equine Encephalitis (EEE) and, more recently, West Nile Virus Encephalitis (WNV). These viruses are maintained in nature (i.e. natural cycles) through continuous transmission between reservoir hosts (birds and rodents) and mosquitoes. This natural cycle usually remains undetected until some ecological change, such as heavy rains, disturbs the cycle and the virus escapes the natural focus. When this occurs, the chance for spread to humans and horses is enhanced. Horses and humans can develop clinical illness, but are considered to be "dead-end" hosts because they do not contribute to the disease transmission cycle; and, they do not maintain a sufficient level of the virus in their system to infect mosquitoes or other mammals.

Seasonal Activity

Most cases of arboviral encephalitis in the U.S. occur from May to September when mosquitoes are most active; however, in Florida, while most cases occur during this period, cases of SLE and EEE have been reported throughout the year. Where the virus resides or how it survives in the winter is unknown. It may be introduced by migratory birds in the spring or it may remain dormant. With the onset of spring, the virus reappears in the birds and mosquitoes and may escape the natural cycle and transmit the virus to humans, horses and other hosts.

Transmission Cycle

Mosquitoes become infected when they feed on infected birds, which may circulate the virus in their blood for a few days. Infected mosquitoes can then transmit WNV to humans and animals while biting to take blood. The virus is located in the mosquito's salivary glands. During blood feeding, the virus may be injected into the human or animal where it may multiply, causing illness. The disease is not directly transmitted between horses, from birds to horses or from horses to humans.

Signs and Symptoms in Horses

Arboviral infection can cause encephalitis that is accompanied by a variety of neurologic disorders including:

- Ataxia, characterized by stumbling, staggering, wobbly gait more often affecting the rear limbs.
- Weakness
- Lying down with difficultly and inability to rise.
- Depression and listlessness.
- Facial paralysis or twitching.
- Teeth grinding.
- Blindness, and
- Fever in 1/3 of affected horses.

Signs and Symptoms in Humans

The majority of human infections do not exhibit symptoms, or may result in a nonspecific flu-like syndrome. Onset may be sudden with fever, muscle pain and a severe headache. Infection may, however, lead to encephalitis with a fatal outcome. Fortunately, only a small proportion of infected persons progress to encephalitis.

Treatment

Because the arboviral encephalitides are viral diseases, antibiotics are not effective for treatment and no effective antiviral drugs have yet been discovered. Treatment is supportive in an attempt to deal with problems such as swelling of the brain. The key is to report any neurologic case to your veterinarian and begin treatment as soon as possible.

Prevention

Currently, prevention of arboviral infections in humans and horses relies primarily on avoidance of exposure to mosquitoes, which includes:

- Eliminating mosquito-breeding sites such as stagnant water in birdbaths, flower pots and old tires.
- Keeping away from ponds, marshes or wetlands.
- Staying indoors at dusk and dawn, the periods of greatest mosquito activity, and
- Applying insect repellents.

There are vaccines available for use in horses in protecting them against EEE, WEE, and WNV. Horse owners should contact their veterinarian about the appropriate use of these vaccines.