



Department
of Agriculture
STATE OF HAWAII

Hawaii Department of Agriculture
Animal Industry Division
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ADVISORY
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West Nile Virus

General Information, Horses and Poultry

West Nile virus, introduced into the vicinity of New York City in 1999, has now been identified in 41 states, the District of Columbia and three Canadian provinces. The pattern of advance across North America is consistent with the movement of migratory and wild birds.

The transmission of West Nile virus requires a competent mosquito vector and species of wild birds that are capable of amplifying the amount of virus in an area. Hawaii has a competent mosquito vector (*Culex*) and reinforces the need for homeowners to institute mosquito control measures on their properties similar to those recommended during the recent outbreak of Dengue virus. Although the normal transmission cycle involves mosquitoes and birds, horses and humans may be infected as incidental “dead end” hosts. Birds, horses and humans can not directly transmit infection to other persons, birds or mammals – transmission is by mosquitoes.

Primarily a wild-bird disease, West Nile virus generally causes either no symptoms or mild symptoms that mimic the flu in people. In rare instances, however, West Nile virus can cause encephalitis (inflammation of the brain) or meningitis (inflammation of the lining of the brain and spinal cord) in humans. This happens in less than one percent of people bitten by an infected mosquito. Those over age 50 and those with compromised immune systems are most susceptible to the serious complications related to the virus. Of the 41 States reporting West Nile virus activity since 1999, 20 have reported the disease in people.

Currently, plans to monitor dead wild birds as a method of surveillance are being formulated by several government agencies and methods to lessen the likelihood of West Nile virus entering the State are being explored. Avenues of virus introduction include infected migratory or imported birds, infectious mosquitoes, and the movement of infected people or other mammals. The risk of introduction through infected humans, horses or other mammals may be considered negligible since the high levels of virus in the blood required for efficient transmission to mosquitoes is not achieved.

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Horses can be infected with West Nile virus and serve as “sentinels” of the disease rather than carriers; that is, people and other animals can't contract West Nile virus from an infected horse and mosquitoes don't pick up the virus from biting an infected horse. Horse owners should watch for signs of infection in their animals and should consult a veterinarian if those signs are present. Symptoms in an infected horse include ataxia (stumbling, staggering, wobbly gait or lack of coordination), inability to stand, multiple limb paralysis, coma or death. Most infected horses will not show clinical signs of disease however of the horses that show serious clinical disease, one in three will die.

The State agriculture department and Federal field veterinarians will assist in collecting samples and testing horses that demonstrate disease signs consistent with West Nile virus such as meningitis and/or encephalitis. Three other common mosquito-transmitted viral diseases in the U.S., Eastern and Western equine encephalitis and St. Louis encephalitis, that also pose a health risk to horses and humans, have not been identified in Hawaii.

The Department of Agriculture is recommending that horse owners contact their veterinarians to discuss West Nile virus and the merits of vaccination. A killed West Nile vaccine, developed by Fort Dodge Laboratories, Fort Dodge, Iowa, was conditionally approved for use by U.S. Department of Agriculture and approved for sale and distribution in Hawaii in August 2001. Veterinarians are advised to contact Fort Dodge in advance to complete forms required to use the vaccine. The vaccine can only be sold and administered by veterinarians and a series of two vaccinations three to six weeks apart are recommended.

Although wild birds have been killed by the virus, the disease has not proved to be a significant disease in poultry; therefore, it is unlikely to have an impact the state's poultry industry.

Although there are only a few reports of West Nile virus infection of pet birds, all bird species should be considered susceptible until proven otherwise. Environmental mosquito control and mosquito-proofing aviaries are measures that bird owners may employ should the virus be introduced into Hawaii.

Cases of West Nile fever in dogs or cats would be expected to be rare.

The discovery of Dengue virus in Hawaii, which is closely related to West Nile virus, was a good opportunity to stress mosquito control around the home and farm. It is a good practice to get rid of standing water where mosquitoes lay their eggs. Removing old tires, cans, bottles or any containers that hold water as well as inspecting gutters to make sure they are not clogged, and checking watering troughs, plant pots, drip trays, wading pools, pet dishes and other containers at least once a week, are ways of eliminating breeding sites.