

WEST NILE VIRUS: A RISK TO APPLICATORS OR A BUSINESS OPPORTUNITY

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West Nile Virus first appeared in the United States in 1999 in the New York City area, and has spread rapidly across the United States. Last year saw the first confirmed deaths in Wisconsin from infections caused by West Nile Virus. West Nile virus is an arbovirus (arthropod-borne virus) transmitted to birds and mammals by the bite of an infected mosquito. The virus cycles in nature between birds and mosquitoes, but can infect humans and domestic animals. Horses are particularly sensitive to the virus.

Even in areas where the virus has been found, very few mosquitoes (less than one percent) become infected. Entomologists at the University of Wisconsin also are investigating which breeds of mosquitoes may be more likely to carry the infection. Some southern species may be more involved in virus transmission. This may explain why confirmed deaths from the virus are higher in the areas south of Wisconsin.

Less than 1% of humans whom are bitten by infected mosquitoes will become sick. If illness does occur from a West Nile infection it will take from 3 to 15 days after being bitten for symptoms to occur. Mild symptoms can include headache, fever, muscle pains, skin rash or swollen lymph nodes. In rare cases West Nile causes more serious symptoms of high fever, neck stiffness, disorientation, coma, tremors, convulsions, muscle weakness and in some cases death. Severe cases have occurred most commonly in the elderly.

There is no specific treatment for West Nile infections, physicians treat to minimize the symptoms of the infection. There also are no vaccines for humans. There are vaccines for horses, actually a series of shots, and horse owners are encouraged to have horses treated. To reduce your risk of infection you need to take personal protective measures to prevent mosquito bites.

Reducing Your Risk of Getting West Nile Virus

To prevent mosquito bites, especially during the period from dusk to dawn when mosquitoes are most active, or during the day in areas where weeds, tall grasses or brush where mosquitoes may be resting you should take the following steps:

- Wear protective clothing such as long pants, loose-fitting long-sleeved shirts and socks and boots (which is required by most agricultural pesticide labels)

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- Consider using an insect repellent containing DEET
- Use DEET products according to the label directions. DEET products remain effective for around four hours.
- Apply enough repellent to cover exposed skin and clothing. Wear a hat that has been treated with the repellent.

DEET use is recommended by both the Centers for Disease Control and EPA. Some persons have reported skin sensitization, but the most often reported problem from DEET use is from persons getting the product in their eyes. In applying to your face it is best to either spray the product in to your hands and then rub it on your face, or cover your eyes while someone else applies the spray to your face.

Should Our Business Consider Adding Mosquito Treatment to Our Services?

Controlling mosquito populations by using pesticide applications is a very difficult business. Pesticides designed to kill adult mosquitoes are effective for only a short time. Mosquitoes can and do move very large distances in one night (up to 20 miles). You may achieve a quick knock down of local mosquitoes, but mosquitoes that were outside of the treatment area will soon invade the area treated.

There are some sophisticated mosquito control districts in other states, but all agree that pesticide applications are only one part of a control effort. A major part of municipal efforts is aimed at eliminating breeding areas. Eliminating areas of standing water or removing tires and other containers that collect precipitation are critical to control efforts.

When pesticides are used to treat broad areas, the applications must begin with the use of larvicides or growth regulators to minimize the number of larvae that make it to adulthood. This means treating of surface waters, and in Wisconsin you will need a permit from the Department of Natural Resources for aquatic treatment. Last year, only two cities, Milwaukee and Brookfield conducted larvicide applications. Both worked closely with a commercial application firm from Illinois (Clark Environmental) to survey and trap mosquitoes, and ultimately to begin treating for mosquitoes. Using pesticides that kill adults is conducted only as a final clean up for any adults that emerge. Again surveying for adults is conducted to determine if levels of populations justify treatment.

If your business thinks they want to get into mosquito control work, then you will need to comply with the following:

Licensing Requirements:

Pesticide application businesses that offer mosquito control must meet the following requirements:

- The commercial business must have a current commercial pesticide application business license from the Department of Agriculture, Trade and Consumer Protection (DATCP).
- All pesticide applicators employed by the business must be currently licensed as an individual commercial pesticide applicator.
- All pesticide applicators must be currently certified in Category 5.0 - Aquatic and Mosquito Pest Control or have an approved reciprocal certification from another state. Certification in Category 3.0 - Turf and Ornamental is not acceptable for mosquito control.

The University of Wisconsin Extension Pesticide Applicator Training program provides the training and training materials for pesticide applicator certification. Visit the PAT web site at ipcm.wisc.edu/pat/ for information on ordering training materials and training sessions or call 608-262-7588.

Landscape Rule Requirements:

If your company is hired by a municipality or government agency to control mosquitoes for public health purposes, you are exempt from landscape rule requirements found in Wisconsin's pesticide rule, s. ATCP 29.56, Wis. Admin. Code.

If your company is hired by a homeowner or other non-governmental entity to control mosquitoes, you are not exempt and are required to follow the landscape rule in s. ATCP 29.56, Wis. Admin. Code:

- Post landscape warning signs.
- Notify neighbors who are listed on the Landscape Pesticide Advance Notification Registry.
- Provide information to the customer, both before and after a pesticide application.
- Maintain records of pesticides applied and the application dates.
- See ATCP 29 - Pesticide Use and Control for the complete rule.

Pesticide Drift:

Your applicators can only apply pesticides to the property you are hired to treat. It is against the law to drift or to over apply sprays or granules onto other properties.

Pesticides Applied to Water:

Pesticides used to control mosquitoes must target the different life stages from larva to adult. Larval control requires that pesticides be applied to water, the larval habitat.

Pesticides applied to waters of the state have special requirements:

- Before pesticides can be applied to waters of the state, a permit from the Department of Natural Resources may be required. Contact your local DNR office or visit <http://www.dnr.state.wi.us> for permit information.
- Waters of the state means nearly any water body in the state including private lakes and ponds, public lakes, ponds and rivers, streams, marshes and wetlands
- Larvacides may be liquid, granular or a solid like a briquette.

- Biological larvacides are available such as different varieties of *Bacillus thuringiensis* (Bt) or insect growth regulators.

Resources

There are many excellent web sites that can help answer questions about West Nile Virus. We have links to a number of those sites on our website. You also can print off information sheets from our site for distribution to your customers. At a minimum make sure you order and have available plenty of repellent for your employees and customers. The good news is that for persons in good health, a mild case of West Nile Virus provides a lifetime of immunity. We expect that West Nile is here to stay, but in the long term cases that result in deaths will decline in the next several years as immunity is acquired by a large part of the population. Then we can go back to just being annoyed by mosquitoes. Places to visit for more information include:

Wisconsin West Nile Virus Hotline: 1-800-433-1610

Information clearinghouse for WNV in Wisconsin.

Pesticide Rules and Requirement - DATCP <http://datcp.state.wi.us>

Pesticide licenses, permits, certification information.

Chemical Control of Aquatic Plants and Vegetation - DNR

www.dnr.state.wi.us/org/water/fhp/waterway/aquaticplantcontrol.shtml

Permit information to apply pesticides to water for aquatic plant or mosquito control.

American Mosquito Control Association www.mosquito.org

A scientific/educational, not-for-profit public service association for mosquito control. Phone 732-932-0667 or e-mail amca@mosquito.org.

National Pesticide Information Center www.npic.orst.edu

Provides objective, science-based information about pesticides, including mosquito repellents and insecticides, 1-800-858-7378 or e-mail npic@ace.orst.edu.

Pesticides and Mosquito Control - EPA www.epa.gov/pesticides/factsheets/skeeters.htm

Information on mosquito control methods, pesticides, repellents, other resources.

Centers for Disease Control and Prevention www.cdc.gov/ncidod/dvbid/westnile/index.htm

Extensive information on WNV including prevention, surveillance and health.

