



# MOSQUITO CONTROL

## 4 - Simple Steps To Reduce Backyard Mosquitoes

Reclaiming your back yard is as easy as 1-2-3-4.

1. Eliminate breeding habitat. Anything that holds water for up to seven days can produce mosquitoes. Get rid of the water!
2. Make your property unattractive for mosquitoes. Keep your grass cut short, hedges trimmed, etc. Mosquitoes like cool, shaded areas during hot sunny days.
3. Apply effective insect repellent and wear protective clothing. There are several new repellents that are odorless and leave your skin feeling dry instead of oily. Repellents are the best way to avoid mosquitoes.
4. Apply a barrier treatment to kill and fend off those pesky critters. Barrier sprays can give you one - three weeks of control from a single application.

## LARVICIDES

**VectoLex** - a biological mosquito larvicide based on the naturally occurring active ingredient *Bacillus sphaericus*. VectoLex offers extended control of many mosquito species. VectoLex provides extended mosquito control that is cost-effective and environmentally sound.



Larvicides are available for purchase at many local retail stores. The common name may be BTI Donuts, Mosquito Dunks, or Pre-Strike.

## FIGHT the BITE!



Join the Grand Forks West Nile Virus Prevention Team... and learn to defend yourself

## MOSQUITO CONTROL INSECTICIDES - ARE THEY SAFE?

Citizens like to know if the products being used for controlling mosquitoes are safe for the public and the environment. There are several factors that determine which products are used and how they will be used in Grand Forks. The Grand Forks Mosquito Control program was designed utilizing the guiding principles of an integrated pest management (IPM) program. Our goal is to reduce the risk of mosquito-borne diseases and reduce the nuisance level of mosquitoes while maintaining the integrity of our ecosystem. Environmental awareness is at the forefront of our program. All products used in the Grand Forks program are registered and approved by the EPA and the North Dakota Dept. of Agriculture and our staff employs best management practices when using these products. The Grand Forks Mosquito Control program was developed to improve the health and quality of life for the citizens in our community. At no time do we want to put anybody's health at risk because of the products we use to control mosquitoes. Following the guidelines of an IPM program permit us to use products that are safe to humans and the environment while reducing the risk of mosquito-borne diseases.

## WEST NILE VIRUS IN NORTH DAKOTA

West Nile Virus arrived in New York in 1999. By 2004, it had spread from coast-to-coast, affecting thousands of birds, horses and humans. This virus has killed people in 44 out of the lower 48 states. The Dakotas are a hotspot for WNV because of the species of mosquito that is most efficient for transmitting this disease.

### NORTH DAKOTA WNV DATA

<u>Year</u>	<u>Human Cases</u>	<u>Deaths</u>
2002	17	2
2003	617	5
2004	20	2
2005	86	0
2006	137	1
2007	369	3
2008	37	0
<b>TOTAL</b>	<b>1,283</b>	<b>13</b>

## LARVICIDES

**Altosid** - is an insect growth regulator (IRG) that contains Methoprene as the active ingredient. Methoprene stops mosquitoes from becoming breeding, biting adults. This product is target specific, and will not affect fish, waterfowl, mammals or beneficial predatory insects. It has the industry's lowest toxicity rating and is environmentally friendly.





Surveillance - Testing Chickens

## COMPREHENSIVE MOSQUITO CONTROL

There are five components to the mosquito control program in Grand Forks. Surveillance; Public Education; Source Reduction; Larviciding; and Adulticiding. Each component plays an important roll in reducing mosquito-borne diseases and reducing the number of nuisance mosquitoes. For more information about the Grand Forks Mosquito Control program visit our website at [www.gfmosquito.com](http://www.gfmosquito.com)



Larviciding



Public Education - Teaching Children



Source Reduction - Recycling Old Tires



Adulticiding

## FACTS AND MYTHS ABOUT MOSQUITO CONTROL PRODUCTS

There are many products on the market that claim to be effective at controlling mosquitoes. The Grand Forks Public Health Department wants you to know the facts about which products or control measures are effective at reducing mosquito bites.

- Here's a FACT - Repellents containing DEET, Picaritin, Oil of Lemon Eucalyptus, and IR3535 are effective at reducing mosquito bites – that's true. These products have been extensively tested and have been proven to be safe and effective at preventing bites. Repellents are one of the best ways to prevent mosquito bites and reduce your risk of getting West Nile virus.
- Here's a FACT - Barrier sprays (i.e. – Malathion, Tempo, Ortho Mosquito-be-gone, Terro mosquito killer, Suspend, etc.) Products with the following active ingredient PERMETHRIN, MALATHION, and CYFLUTHRIN, and DELTAMETHRIN have shown very good results for providing mosquito-free areas for an extended amount of time. To find out the best way to use barrier sprays visit our website at [www.gfmosquito.com](http://www.gfmosquito.com)
- Here's a MYTH - Electric Bug Zappers - Absolutely do not work. If you own one of these, you may notice the majority of dead bugs are not mosquitoes. Although they may attract and kill many insects, most of them are harmless; in fact, most of the dead insects are beneficial to our ecosystem.
- Here's a MYTH – Purple Martins, and many other natural predators of insects are not effective at controlling mosquitoes. Although there is no doubt that Purple Martins eat mosquitoes, they are opportunistic feeders and they do not fly at night when mosquitoes are most active. However, they are fun to watch, so feel free to install a Purple Martin house. They'll eat some mosquitoes but don't expect to notice a difference because this bird is in your yard.
- Here's a MYTH - Mosquito Traps (light traps/carbon dioxide traps). Although they catch a lot of mosquitoes, they are not effective at controlling the mosquito population. If these devices were effective at control mosquitoes, the City would invest in them. Scientific studies have concluded these traps do not reduce the average number of mosquito bites.

## DO BATS CONTROL MOSQUITOES?



Bats are not effective at controlling mosquitoes. Although there is no doubt that bats eat mosquitoes, they are opportunistic feeders. Many scientific studies have been conducted and in all cases to date, less than 1% of the gut contents of wild caught bats consist of mosquitoes. M.D. Tuttle, a world authority on bats, cites an experiment in which bats are released in a laboratory room filled with mosquitoes. The bats caught up to 10 mosquitoes per minute. Tuttle extrapolates this value to 600 mosquitoes per hour. Thus, a colony of 500 bats could consume more than a quarter of a million mosquitoes per hour. However, this is unrealistic when based upon a study where bats were confined in a room with no other food source.

For information about daily trap counts and ground spraying, call the Mosquito Control Information line at 787-8144.