

Mosquito Control

By Mary Wilson

As much as we look forward to warmer weather, we know that mosquitoes will be reappearing soon in our yards and public spaces. Since mosquitoes are a nuisance as well as a carrier of some diseases such as West Nile Virus (WNV) and Eastern Equine Encephalitis (EEE), homeowners and public officials are now in a position to make choices about mosquito control strategies.



Targeting Adults

Most choices will center on either reducing the adult mosquito or the mosquito larvae. It is important to know that studies have shown that spraying pesticides for killing adult mosquitoes (flying, mobile insects) is not an effective, sustainable strategy, but a risky response which can pose some health risks to humans and the environment.

It is particularly ironic that the pesticides used for mosquito control can have negative respiratory and immune impacts – *increasing risks for everyone but particularly for the many people already at higher risk for Covid-19*. Certainly aerial spraying should never be done near nursing homes, age-limited housing units, clinics, hospitals, parks, etc.

Children as well as older residents may be affected. While addressing concerns for West Nile Virus, the New York State Department of Health found that more people were reported to have become sick from pesticide spraying than from exposure to the virus. An unfortunate incident occurred when 37 young ball players in upstate New York were hospitalized after exposure to aerial spraying of malathion near the ball fields.



The two types of pesticides used in spraying adult mosquitoes include pyrethroids and organophosphates. They include malathion (Fyfanon), naled (Dibrom) and chlorpyrifos (Mosquitomist). These pesticides can affect the nervous, cardiovascular and respiratory systems in humans, making them *particularly dangerous to vulnerable populations*.

It should be noted that wildlife, birds, fish, shellfish, and beneficial insects, bees, butterflies, and dragonflies, and fish are all negatively affected by these adulticides. An article in the *Journal of the American Mosquito Control Association* showed that long-range effects of pesticide spraying can actually increase the number of mosquitoes

by destroying their natural predators. Furthermore, mosquitoes that survive the spraying may become resistant to the pesticide.

One study from the Harvard School of Public Health found that aerosol plumes fail to contact the target mosquitoes, and concludes that such insecticidal aerosols may not effectively reduce mosquito populations and the potential for disease transmission. This means that the vast majority of the chemical is allowed to enter the air and environment.

Targeting Larvae

The most effective and safest way to reduce mosquito populations is by targeting the larval stage where the targets are concentrated, immobile and accessible. Thus, the focus can be on habitat management and controlling the immature stages before the mosquitoes emerge as adults.

The philosophy of controlling mosquitoes is much like the philosophies we have developed for controlling other nuisances. First, do no harm. Second, chose a strategy that is consistent with sustainability of the ecosystem. Third, be vigilant about maintaining the tactics. Fourth, support efforts to maintain these goals at the town, state and federal levels.

Because many types of mosquitoes do not travel far from where they hatch, homeowners can have a dramatic impact on local mosquito populations by eliminating any standing water on the property, such as clogged rain gutters, garden containers, wading pools, old tires, bird baths, recycling bins, etc.

If the source cannot be eliminated, then using a product which contains Bti (*Bacillus thuringiensis* var. *israelensis*), like mosquito “dunk,” is recommended, especially in storm drains and sewer treatment plants. Bti is proven effective and has low levels of toxicity to humans and wildlife, with minimal effect on non-target species.

Public land should be cleared of all standing water that could serve as a potential breeding habitat . Businesses should be advised of the hazards of old tires behind gas stations and garages, and asked to recycle the tires or cut them in half. Gutters and ditches in public areas also need regular maintenance to prevent standing water.

Personal Protection

For personal protection [Beyond Pesticides](#) recommends the following as safe mosquito repellents: Oil of Lemon Eucalyptus, Picardin, IR3535, and essential oils such as lemongrass oil, peppermint oil, clove oil, etc. Certain plants such as basil, lavender, rosemary, lemongrass, lemon thyme, mint, rosemary, lemon balm, marigolds and other have natural mosquito repelling properties. Growing these either in the ground or in pots near porches or walkways will provide some repellency.

Mary Wilson is a member of the Pollinator Pathway steering committee and is co-founder of Protect Our Pollinators and the Newtown CT Pollinator Pathway.

Bibliography

“Public Health Mosquito Management Strategy for Decision Makers and Communities,” Beyond Pesticides, revised August 2012, web site.

“Proposed Legislation to Allow Massachusetts to Blanket State with Mosquito Pesticides that Attack the Immune and Respiratory Systems, During a Pandemic that Attacks the Same Systems,” Beyond Pesticides, May 8, 2020, web site.