

## Bucks County Department of Health (BCDH) Mosquito Disease Control Program Overview

There are approximately 60 species of mosquitoes in PA. The main species that we are concerned with are the *Culex pipiens/restuans* species, which predominately carry the West Nile Virus, and are most active at dawn and dusk.



House Mosquito (*Culex* sp.)

<http://www.idph.state.il.us/envhealth/pcmosquitoes.htm>

**How do we treat breeding areas?** We treat areas of standing water that are breeding mosquitoes with products called larvicides. The larvicide stops the mosquito larvae from becoming pupae or emerging as adults. Depending on which type of larvicide and the environment it is used in, the larvicide can be effective from 7 days to 180 days. Some of our commonly used Larvicides are:

Altosid XR Briquets <https://www.centralmosquitocontrol.com/all-products/altosid/altosid-xr-briquets>

Natular XRT Briquets <https://www.clarke.com/product/natular-larvicide/>

Fourstar Granules and Briquets <https://www.centralmosquitocontrol.com/labels>

VectoPrime <https://azelisaes-us.com/product/vectoprime-fg/>

We take great care and caution in the proper application of these products.

### How do we conduct surveillance?

**Gravid traps:** black basin with smelly water attracts adult mosquitoes looking to lay their eggs. The box on top contains a fan and a net that traps the mosquitoes. This is the trap that primarily attracts and catches the species that carry WNV.

**BG traps:** Black plastic cylinder with a cooler of dry ice above it. The adult mosquitoes are attracted to the CO<sub>2</sub> emanating from the dry ice and the lure in the trap that mimics human scent. The fan traps the mosquitoes in the net.



[The picture on the left is a Gravid Trap, and the picture on the right is a BG Trap.](#)

**How do we handle adult mosquitoes, particularly those that test positive for WNV?** When we set a trap, the collected adult mosquitoes are sent to the Department of Environmental Protection lab in Harrisburg, where they are counted, identified, and tested for West Nile Virus (WNV). If a trap yields a high number of mosquitoes, we first investigate for standing water in the area, which may serve as breeding grounds, and take steps to remove or treat it. If mosquitoes from a trap test positive for WNV, we evaluate the need for an ultra-low volume (ULV) truck spray. Our department only conducts adult mosquito sprays when the risk of WNV poses a substantial public health threat. To ensure effective and precise application, our Clarke Cougar ULV mosquito sprayer is calibrated annually. We currently use Clarke Duet, a product specifically designed for adult mosquito control.

[\(https://www.clarke.com/mosquito-products/adulticides/duet-adulticide/\)](https://www.clarke.com/mosquito-products/adulticides/duet-adulticide/) at an application rate of 0.75 oz of product sprayed per acre of land. **The BCDH always gives at least two days notice to all municipalities and the public prior to conducting any sprays on public property, and we also contact all hypersensitive individuals and beekeepers in the spray area.**

## Lyme Disease Overview

Lyme disease as well as other tick-borne diseases are a very serious problem not only in Bucks County, but throughout the state. Bucks County averages about 400 cases per year. However, tick populations are extremely difficult to control because they live and breed throughout nature and unlike mosquitoes, do not breed in standing water. Therefore, the best tactic to avoid contracting Lyme disease is to avoid getting bit.

The blacklegged tick, also known as the deer tick, transmits the Lyme disease bacterium through its bite. Certain precautions can be taken to prevent tick bites along with being aware of what areas and conditions ticks are most likely to be found.

### Tick Info:

The blacklegged tick, or deer tick, is often found in wooded and grassy areas.

Most humans are infected with the Lyme disease bacterium through the bites of immature ticks, called nymphs, which feed in the spring and summer months.

Ticks are often found attached to humans in the groin, armpits, and scalp areas, however they can attach anywhere on the body. In most cases the tick must be attached for 36-48 hours or more before the Lyme disease bacterium can be transmitted.

**Ticks can be avoided** by wearing long sleeved light colored clothing, pants tucked into socks, and using insect repellent. Clothing can be treated with 0.5% permethrin which is effective in repelling ticks. See the websites listed on the bottom of the following page to find the best repellent(s) for you.

The Trexler Game Preserve in Lehigh County has an informational sign at their trail entrances which is an excellent example of the measures that can be taken to educate the community. Other measures that can be taken by local agencies to prevent tick bites are cutting back foliage on paths and maintaining wider trails. This is important as ticks primarily attach onto people by using a questing technique, as shown in the picture below, whereby ticks climb to the top of foliage and attach to people or animals as they brush past. Having wide trails that are well maintained to keep brush back from the trails can safeguard the public and their pets against ticks!



Blacklegged Tick (*Ixodes scapularis*)



[https://www.cdc.gov/lyme/causes/?CDC\\_AAref\\_Val=https://www.cdc.gov/lyme/transmission/index.html](https://www.cdc.gov/lyme/causes/?CDC_AAref_Val=https://www.cdc.gov/lyme/transmission/index.html)

## Please Join our Spring Clean Up Day!

**Help Beautify Bucks County as well as Help Eliminate Nuisance and Disease Carrying Mosquitoes!**

**When: Weekend of April 19<sup>th</sup> or specify your own date!**

**Where: Your Property, help a neighbor or at a public area!**



Clean up leaves, refuse, and make sure all containers, boats etc. are properly stored with covers or inverted so as not to allow standing water. Trash need lids! Get rid of old tires! Clean out rain gutters~ Don't give mosquitoes a place to breed on your property!