

## **Black fly biology and control in areas of Hunterdon and Warren counties**

### **Larval/Pupal Surveillance**

Some rivers in the northwest portion of New Jersey produce the pest black fly species, *Simulium jenningsi* (Diptera: Simuliidae). Rivers that have been identified as producing the target species, and this includes the Musconetcong River, are monitored from early April through October. Sampling for black fly larvae and pupae occurs in riffle areas or areas of fast flowing water where black fly immature stages are found. Collectors remove larvae from the habitat and preserve the specimens for identification in the laboratory. The samples are identified to the species level, and these results are used to assess the need for black fly control.

### **Treatment Decision Making**

An integrated pest management (IPM) approach is used to evaluate the need for treatment. Hunterdon County staff examine a combination of factors before any river is treated with *Bti*. The species, number and age of the black fly larvae present, presence or absence of adult black flies in the area, the affected human population, the time of the season and the results of river monitoring are all part of the decision-making process. The overall intent is to keep adult populations of *S. jenningsi* below pest levels.

### **Location of Treatments**

The specific location of river treatments will change depending on larval monitoring and river flows. If the population of black flies is sufficient to warrant control, treatments will occur. The point of application will vary based on the water velocity at the site. When river velocities are faster, the point of application is often as much a quarter of a mile upstream of the actual production area. At low velocities, the point of application is often within feet of the production area. This is necessary to achieve proper mixing and suspension of *Bti* in the water column. In very high flow conditions, treatment operations are suspended.

### **Timing of Treatments**

The specific timing of applications considers several factors. These include larval populations, weather conditions, water flow and impact on river users. Every effort is made to limit the overall number of applications while still providing service to the public.

## Hunterdon County Mosquito &amp; Vector Control 2026 Fact Sheet

**Products Used in Larval Black Fly Control**

## Vectobac® 12AS &amp; Aquabac® XT

**What are Vectobac® 12AS and Aquabac XT®, and how are they used?**

Vectobac® 12AS and Aquabac® XT are liquid formulations that contains the active ingredient *Bacillus thuringiensis israelensis* (Bti). Bti stands for the name of the bacteria of which components of these bacteria control black fly larvae. Proteins from the bacteria are pathogenic to filter-feeding black flies, and these proteins comprise the active ingredient of Vectobac and Aquabac. Either product can be applied to black fly larval habitat (generally rivers and streams) in a concentrated or diluted fashion (diluted with water). The US Environmental Protection Agency's current evaluation considers Bti containing products to be practically non-toxic when used according to label instructions. Method of application is either by hand or truck mounted equipment.

**How can exposure to Vectobac and Aquabac be avoided?**

Although risk to the general public from use of this of this product is minimal, avoiding exposure is always the safest course of action. Residents should take precautions to avoid direct eye and skin contact with Bti. Areas of the body that have come in contact with Vectobac/Aquabac can be washed with water. There are no specific categories of individuals who are more susceptible to problems associated with Bti; however, residents who perceive themselves at a higher risk for exposure to other products should take extra care to avoid direct contact with Bti. Such residents might include those who have general allergic reactions to a variety of other products, young children, and chronically ill individuals. Exposure can be reduced by keeping a distance from application equipment and avoiding immediate and direct contact with habitat that has been treated. Treatment information is routinely updated during the field season on the Hunterdon County website: <https://www.co.hunterdon.nj.us/478/West-Nile-Mosquito-Spray-Schedule> . In addition, notices containing information about the use of Vectobac/Aquabac are periodically placed in newspapers in the Hunterdon region throughout the season.

**What are the symptoms of exposure to Vectobac/Aquabac?**

Direct exposure could cause mild irritation from eye and skin contact. These conditions could be aggravated by pre-existing skin or eye lesions and hypersensitivity. The chance of experiencing symptoms with diluted material when properly used is low. First aid procedure includes flushing exposed areas with copious amounts of water and seeking medical attention if irritation persists. Should symptoms persist, immediate medical attention is advised by either contacting a physician or by contacting the New Jersey Poison Information and Education System (NJPIES) at 1-800-222-1222.

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**How long does Bti last in the environment?**

Bti tends to breakdown quickly in the environment, primarily due to its susceptibility to heat and sunlight. Breakdown in water generally occurs within hours of use.

**Where can more information on these products be found?**

Numerous publications exist on the efficacy and environmental fate of Bti. Staff of the HCMVCP can provide examples of these upon request. The following resources can also be used to attain more information on Bti as it pertains to black fly control:

For Overall Pesticide-Specific Information – 8:00AM to 12:00PM PST, Mon-Fri:

- **National Pesticide Information Center** 800-858-7378

For Federal Pesticide Regulation - 8:00AM to 4:30PM EST, Mon-Fri:

- **US EPA - Region 2 Office** 877-251-4575

For Pesticide Health Information & Possible Exposures – 24 hours:

- **New Jersey Poison Information & Education System** 800-222-1222

For New Jersey Pesticide Regulation & Misuse Complaints:

- **Bureau of Pesticide Compliance and Enforcement** 609-984-6568

For Statewide Mosquito Control Information:

- **NJDEP Office of Mosquito Control Coordination** 609-292-3649

For Mosquito Control Recommendations:

- **Rutgers University, Department of Entomology** 848-932-9774

For Pesticide Health Information:

- **Hunterdon County Health Department** 908-788-1351

If residents have questions about Bti or any other mosquito control related products or practices, please feel free to call the Hunterdon County Division of Mosquito & Vector Control (908) 788-1351 or visit the program's website: <https://www.co.hunterdon.nj.us/435/Mosquito-Vector-Control>