

REC'D: 03/17/2025



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HUNTERDON COUNTY DEPARTMENT OF HEALTH



Hunterdon County Department of Health Division of Mosquito & Vector Control

<https://www.co.hunterdon.nj.us/435/Mosquito-Vector-Control>

March 7, 2025

Franklin Township Board of Health
Christine Burke, Clerk
202 Sidney Road
Pittstown, NJ 08867

Dear Ms. Burke:

As per requirements of the state Pesticide Control Regulations, N.J.A.C. Title 7 Chapter 30, enclosed please find an information packet regarding our mosquito control program.

The pesticide regulations require that I provide information that outlines the scope of our work should we be involved with area-wide mosquito control in your municipality.

I have included all municipalities in our mailing this year so that should the circumstances arise where we are conducting activities in your area, you will have some insight as to the nature of our work.

Any program updates can most easily be found on our website, the address of which is included in this packet.

Sincerely,

Tadhgh Rainey
Division Head, Mosquito and Vector Control
Hunterdon County Health Department

TR: mw

Enclosures

Municipal packet Franklin 2025

Physical Address: 314 State Rt 12, County Complex, Bldg #1, 2nd Fl.
Mailing Address: P.O. Box 2900, Flemington NJ, 08822
Tel: (908) 788-1351 Fax: (908) 782-7510

Hunterdon County Department of Health

In compliance with Section 9.10 of the New Jersey Pesticide Control Code (N.J.A.C. Title 7, Chapter 30) notice is hereby given that the Hunterdon County Health Department (HCHD), Route 12 County Complex Flemington, NJ 08822 will be applying insecticides to control larval black flies in Hunterdon County during the period of April 11, 2025 through October 18, 2025. Applications will be to South Branch of the Raritan River (by calibrated bucket) from Clinton to Three Bridges. HCHD will also be applying insecticides to control adult mosquitoes and black flies on an area wide basis in Hunterdon County, as needed, during the period of April 24, 2025 through October 18, 2025. The insecticide to be used for larval black flies [with active ingredient (a.i.) *Bacillus thuringiensis israelensis*, EPA# 73049-38] will be Vectobac 12AS. The products to be used in adult mosquito and black fly control would be Fyfanon EW (a.i. malathion, EPA# 279-3622), Fyfanon ULV (a.i. malathion, EPA# 279-3539), Anvil 2+2 (a.i. sumithrin, PBO, EPA# 1021-1687-8329), Zenivex E4 (a.i. etofenprox, PBO, EPA# 2724-807), Zenivex E20 (a.i. etofenprox, PBO, EPA# 2724-791) Duet Dual Action Adulticide (a.i. prallethrin, sumithrin, PBO, EPA# 1021-1795-8329), Duet HD (a.i. prallethrin, sumithrin, PBO, EPA# 8329-105), ReMOA Tri (a.i. Fenpropathrin, Abamectin, C-8910, EPA# 73049-526) and Merus 3.0 (a.i. pyrethrins, EPA# 8329-108). Products will be applied by helicopter, truck-mounted or handheld equipment.

All persons interested in obtaining additional information regarding these activities may call the division head, Mr. Tadhg Rainey (Pesticide License # 24344B) at (908) 788-1351, Rte 12 Complex, Flemington, NJ 08822 or by visiting the Hunterdon website: www.co.hunterdon.nj.us/435/Mosquito-Vector-Control. Upon request the pesticide applicator or applicator business shall provide a resident with notification at least 12 hours prior to the application, except for Quarantine and Disease Vector Control only, when conditions necessitate pesticide applications sooner than that time. For routine health inquiries or pesticide exposure information please contact the National Pesticide Information Center at 800-858-7378. For emergencies relating to pesticides contact the New Jersey Poison Information and Education System at 800-222-1222. Contact this number for pesticide regulation information, pesticide complaints, and health referrals 609-984-6568 (NJ Pesticide Control Program).

Mosquitoes Question and Answer Sheet

**Distributed by:
Hunterdon County Mosquito and Vector Control Program**

Background

This Q&A sheet has been produced to help residents and local officials understand information pertaining to mosquito control in Hunterdon County. It was designed by personnel from the Hunterdon County Mosquito and Vector Control Program (HCMVCP) and was approved by the New Jersey Department of Environmental Protection, Pesticide Control Program as per the Pesticide Control Regulations (N.J.A.C. Title 7:30). Municipalities are encouraged to share this information with all residents in their community.

What is the life cycle of mosquitoes?

Details of the mosquito life cycle are described in the following pages. In summary, mosquitoes spend the immature stages of their lives in water. Some adult female mosquitoes require a blood meal for the production of eggs. Females lay their eggs in a variety of aquatic environments, including both transient and permanent bodies of water. Mosquitoes are extremely diverse insects with approximately 40 species inhabiting areas of Hunterdon County alone.

What diseases do mosquitoes cause?

In the eastern United States, mosquitoes transmit a variety of diseases including West Nile virus (WNV), eastern equine encephalitis (EEE), St. Louis encephalitis, LaCrosse virus, malaria, and dog heartworm. WNV, a mosquito-borne virus causing encephalitis, was first recognized in New York City in 1999. WNV affects a variety of wildlife, horses, and humans. The primary vector of WNV is a mosquito commonly found around homes. A WNV vaccine for horses was conditionally approved by the United States Department of Agriculture in 2001 and has been in use since.

What are the functions of the Hunterdon County Mosquito and Vector Control Program?

The HCMVCP was established in 2000 and conducts surveillance/control of mosquitoes, black flies, and ticks. The focus of the program has been mosquito surveillance and control based on the statutory mandate (N.J.S.A. Title 26:9) "to perform all acts which in its opinion may be necessary for the elimination of mosquito breeding areas, or which will tend to exterminate mosquitoes within the county." The HCMVCP has incorporated tick and black fly surveillance in the past few years. The program's activities are guided through comprehensive surveillance,

which includes trapping, collecting, etc. to evaluate populations of various species. Mosquitoes are controlled by source reduction, chemical, and biological control. Emphasis is placed on the control of mosquitoes when they are in the aquatic stages of their development.

What control efforts are utilized by the HCMVCP?

The HCMVCP uses an integrated pest management (IPM) approach to controlling mosquitoes. IPM incorporates various methods of control, including the use of biological and synthetic products when needed. With an IPM strategy, control efforts focus primarily on the immature, water-borne stages of the mosquito. Larval control can be very effective because larvae are more concentrated and accessible than the adult mosquitoes, which disperse after emerging. Adult control can be effective and is used when larviciding is inappropriate. Larval control encompasses a variety of techniques and is not limited to synthetic chemicals. Most larval control in Hunterdon is conducted through the use of biologically derived agents. This includes bacterial products such as *Bacillus thuringiensis israelensis* (abbreviated “Bti”) and *Bacillus sphaericus*, and through the use of live organisms such as the mosquito fish, *Gambusia affinis*. All products used by the HCMVCP are registered and licensed by the United States Environmental Protection Agency. They are registered for use by the New Jersey Department of Environmental Protection and are approved for use by the New Jersey Agricultural Experiment Station (NJAES). Biological agents, such as fungi and nematodes, that are not recommended by NJAES for mosquito control are not part of a proper IPM program and are not used by the HCMVCP. Additional information can be obtained by visiting the Hunterdon County website: <https://www.co.hunterdon.nj.us/435/Mosquito-Vector-Control>.

What are the winter activities of the HCMVCP?

Field activities, such as tire cleanup, mapping of sites, laboratory analysis of mosquitoes, etc. are conducted year-round. Control operations generally start in February with the hatching of woodland pool mosquito species and continue through November. Inspection routes and trapping sites are revised and analyzed during the winter months. Educational presentations are made for citizen groups, etc. on mosquitoes, black flies, bed bugs ticks and other insects as well during this time. Simply contact HCMVCP for further details on these programs.

What can homeowners do to help control mosquitoes?

- Homeowners can provide effective control by eliminating standing water on their property. Any container holding water is a potential source of mosquito production. Of particular concern are clogged gutters and scattered tires. Residents should keep gutters clean and remove or overturn containers if possible. Items such as birdbaths should be emptied and refilled at least once a week.
- Small depressions in the yard can be filled to prevent the collection of water. If larger wet areas exist on the property, residents should bring them to the attention of HCMVCP personnel.

- Keeping adult mosquitoes out of the home is an additional step residents can take. Window and door screens should be properly fitted and holes patched to prevent mosquitoes from entering the home.
- A variety of repellents are available to provide relief from mosquitoes and other insects. Historically, the most effective repellents are those containing the active ingredient DEET.

What do I do if there are mosquito problems around my home?

If mosquitoes present a problem in your area, contact the HCMVCP office at (908) 788-1351. The staff will investigate your call. Each area is inspected to verify the presence of mosquitoes. Adult mosquitoes are often collected for surveillance purposes and virus testing.

How do residents avoid exposure to pesticides?

Larvicides are most frequently applied in areas where there is no exposure to people. However, people should take the same precautions that are used when handling chemicals around the home to avoid exposure. Avoid consumption and direct exposure to any larvicide or adulticide. If residents are in a spray zone, windows can be closed to reduce drift into a home. Adulticide products are sprayed on a low-rate basis. Exposure to outdoor products is therefore minimal and there is generally no need to move items indoors. However, exposure can be avoided by covering outdoor items if needed. Higher risk individuals, particularly pregnant women, children, and those who are chronically ill should avoid direct contact with pesticides. 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>.

What are the symptoms of pesticide exposure?

Symptoms of exposure vary with each product and vary with the amount of exposure. Generally speaking, exposure to small doses may cause mild irritation to the skin and eyes. Because symptoms vary so greatly, and because symptoms of exposure can present themselves like many other illnesses, residents should contact a physician if they suspect they have been exposed to a pesticide. Residents should also contact the New Jersey Poison Information and Education System (1-800-222-1222) if they have been exposed to a pesticide. The Material Safety Data Sheets (MSDSs) provide useful first aid information for individuals who have been exposed to a concentrated material (for example, exposure during the mixing process). MSDSs for products used by the HCMVCP are available to residents upon request. Pesticide fact sheets, which are included in this packet, provide more detailed information on inadvertent and mild exposure to pesticides.

Where can I find more specific information on the activities of the mosquito program?

Current activities of the mosquito program can be found at the Hunterdon County website: <https://www.co.hunterdon.nj.us/435/Mosquito-Vector-Control> or by calling the HCMVCP office at 908-788-1351. Information on the website changes on an as needed basis over the course of the season. Items included on the web page include maps of disease activity, announcements, information on products used in mosquito control, and information pertaining to mosquito spraying. Area-wide spraying notifications are also announced in newspaper advertisements (typically in the *Hunterdon Democrat*, *Courier News*, *Easton Express Times*, or *Star Ledger*) over the course of the season. These announcements provide details on products used and appropriate contact information. An example of such an announcement is provided on the last page of this packet.

With whom do I correspond to attain more technical information on pesticide usage and exposure?

- ~ 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

Black Fly Biology and Control in Hunterdon County

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 are monitored from early April through October. In Hunterdon County these rivers include the Musconetcong, Delaware, and South Branch of the Raritan. 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.

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Products Used in Larval Black Fly Control

Vectobac® 12AS

What is Vectobac® 12AS and how is it used?

Vectobac® 12AS is a liquid formulation that contains the active ingredient *Bacillus thuringiensis israelensis* (Bti). Bti stands for the name of the bacteria of which certain components of these bacteria effectively control black fly larvae. Proteins from the bacteria are pathogenic to filter feeding black flies and these proteins comprise the active ingredient of Vectobac. Vectobac is applied to black fly larval habitat (generally rivers and streams) in either a concentrated or diluted fashion (by the use of 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 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. Because of the physical and chemical properties of Vectobac, generally the only health concern is associated with an allergic reaction to the bacteria. Residents should therefore take precautions to avoid direct eye and skin contact with Bti. Areas of the body that have come in contact with Vectobac 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 are periodically placed in newspapers in the Hunterdon region throughout the season.

What are the symptoms of exposure to Vectobac?

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>

Hunterdon County Mosquito & Vector Control 2025 Fact Sheet

Duet Dual-Action® Adulticide

This fact sheet answers some basic questions about mosquito control products in use in Hunterdon County. Municipalities are encouraged to share this information with all residents in their community. The Hunterdon County Division of Mosquito & Vector Control, along with several other resources (listed at the end of this sheet), can provide more detailed information.

What is Duet Dual-Action® adulticide and how is it used?

Duet Dual-Action® contains two pesticides called prallethrin and sumithrin and a synergistic compound called piperonyl butoxide (PBO). PBO increases the effectiveness of Duet, although it does not kill mosquitoes by itself. Prallethrin and sumithrin are members of a family of pesticides called pyrethroids, which are synthetic versions of pesticides produced by plants called pyrethrins. The U.S. Environmental Protection Agency's (EPA) current evaluation considers pyrethroid-containing products to be slightly toxic with minimal potential risk to people when used properly as part of an integrated mosquito control program.

This pyrethroid-containing product is used for the control of adult mosquitoes. While habitat management and measures to control immature mosquitoes in water are preferred and most used, the spraying of adult mosquitoes is appropriate when biting populations reach critical levels or when a disease organism is present in adult mosquitoes. Duet works by contacting adult mosquitoes while they are in flight.

How can I reduce my exposure to Duet Dual-Action®?

Because of the small amounts of active ingredients released per acre, the risk to the general public from the use of pyrethroid-containing products is minimal. Avoiding exposure is always the safest course of action. Any possible exposure risk can be reduced by following these actions:

- Pay attention to notices about spraying found through newspapers, websites, automated telephone messages or distributed by municipal, county, or state agencies.
- Plan activities to limit time spent outside during times of possible pesticide treatments.
- Move pets, their food and water dishes inside during ULV application. Also bring clothing and children's toys inside.
- Stay away from application equipment, whether in use or not.
- Whenever possible, remain indoors with windows closed and with window air conditioners on non-vent (closed to the outside air) and window fans turned off during spraying.
- Avoid direct contact with surfaces that are still wet from pesticide spraying. Do not allow children to play in areas that have been sprayed until they have completely dried (approximately one hour).

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- If you must remain outdoors, avoid eye and skin contact with the spray. If you get spray in your eyes or on your skin, immediately flush and rinse with water.

What are the symptoms of exposure to Duet Dual-Action®?

Symptoms of over-exposure can include irritation to skin and eyes, respiratory and nasal irritation, irritability to sound or touch, abnormal facial sensation, sensation of prickling, tingling or creeping of skin, numbness, headache, dizziness, nausea, and vomiting. You should contact your physician, other medical providers, or the New Jersey Poison Information and Education System (NJPIES) at 1-800-222-1222 if you experience these symptoms following a pesticide spraying.

How long will Duet Dual-Action® last in the environment?

Pyrethroids generally have a soil half-life of about 12 days. They have an extremely low pesticide movement rating because they bind tightly to the soil. Pyrethroids are unstable in light. They rapidly degrade in sunlight and at the soil surface.

Where can I get more information on this adulticide?

The following are resources for more information regarding Duet Dual-Action® and mosquito control in your area (unless otherwise noted, available during normal business hours):

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

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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 Duet 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>

Hunterdon County Mosquito & Vector Control 2025 Fact Sheet

Malathion

(Including Fyfanon ULV and Fyfanon EW)

This sheet answers some basic questions about a mosquito control product in use in your county. The Hunterdon County Division of Mosquito Control, along with several other resources (listed at the end of this sheet), can provide more detailed information.

What is Fyfanon and how is it used?

Fyfanon is an insecticide product that is recommended for mosquito control in New Jersey by Rutgers, The State University of New Jersey. It contains the active ingredient called malathion. The U.S. Environmental Protection Agency's (EPA) current evaluation considers malathion-containing products to be slightly toxic with minimal potential risk to people when used properly as part of a complete mosquito control program.

Fyfanon is used for the control of adult mosquitoes, and it is sold in several different formulations. Two Fyfanon products are used by Hunterdon's mosquito control program: Fyfanon ULV and Fyfanon EW. Fyfanon ULV is an oil-based formulation while Fyfanon EW is a water-based product. Both function and are applied in a similar fashion. A fine mist (known as an ultra-low volume – ULV – application) is sprayed into the air must contact flying mosquitoes must directly contact to be effective. While habitat management and measures to control immature mosquitoes in water are the preferred routine approaches, spraying of adult mosquitoes is appropriate when biting populations reach critical levels or when a disease organism is present in adult mosquitoes.

How can I avoid exposure to Fyfanon?

Risk to the general public from the use of Fyfanon is minimal. Avoiding exposure is always the safest course of action, particularly for populations that may be at higher risk such as pregnant women, children, the elderly, and those with chronic illnesses. Any possible exposure risk can be reduced by following these actions:

- Pay attention to notices about spraying found through newspapers, websites, automated telephone messages or distributed by municipal, county, or state agencies.
- Plan activities to limit time spent outside during times of possible pesticide treatments.
- Move children's toys out of application areas.
- Move animals and their food and water dishes out of application areas.
- Stay away from application equipment, whether in use or not.
- Whenever possible, remain indoors with windows closed and with window air conditioners on non-vent (closed to the outside air) and window fans turned off during spraying.
- Avoid direct contact with surfaces that are still wet from pesticide spraying. Do not allow children to play in areas that have been sprayed until they have completely dried (approximately one hour).
- If you must remain outdoors, avoid eye and skin contact with the spray. If you get spray in your eyes or on your skin, immediately flush and rinse with water.

What are the symptoms of exposure to Fyfanon?

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Symptoms of exposure can include headache, nausea, dizziness, excessive sweating, salivation, excessive tearing, and a runny nose. The chance of experiencing these symptoms of exposure with proper use is low. You should contact your physician, other medical providers or the New Jersey Poison Information and Education System (NJPIES) at 1-800-222-1222 if you experience these symptoms following a pesticide spraying. Bring this sheet with you if you visit a physician or other medical provider.

How long will Fyfanon last in the environment?

Fyfanon spray stays in the air for a short time until it lands on surfaces. Malathion has a low persistence and lasts no longer than 25 days in water and soil. Malathion breaks down faster in sunlight.

Where can I get more information on Fyfanon?

The following are resources for more information regarding Fyfanon and mosquito control in your area (unless otherwise noted, available during normal business hours):

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 Fyfanon 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>

Hunterdon County Mosquito & Vector Control 2025 Fact Sheet

Lambda-cyhalothrin

(Including liquid formulation Lambda 9.7 CS & LambdaStar Ultra Cap 9.7)

This fact sheet answers some basic questions about mosquito control products in use in Hunterdon County. The Hunterdon County Division of Mosquito Control, along with several other resources (listed at the end of this sheet), can provide more detailed information. Municipalities are encouraged to share this information with all residents in their community.

What is Lambda and how is it used?

Lambda 9.7 CS features the active ingredient lambda-cyhalothrin, a synthetic pyrethroid insecticide, that is similar to naturally occurring pyrethrin insecticide compounds found in chrysanthemum flowers. It is used to control a wide range of flying and crawling insects that threaten public health. The primary site of action for both pyrethrins and pyrethroids is the voltage-gated membrane sodium channel of nerve cells. The basic function of nerve cells involves repeated polarization and depolarization associated with neural activation or firing. These processes are controlled by channels which allow for the influx of ions into nerve cells. Both pyrethroids and pyrethrins inhibit the closing of sodium channels and thus disrupt normal nerve function.

The insecticide is applied with either a hand or powered application equipment as a residual treatment to ornamental plants next to foundations of buildings and to surfaces of buildings, porches, screens, window frames, eaves, patios, garages, refuse pumps, and other similar areas where these insect pests are active.

How can exposure to these products be avoided?

- Use adequate ventilation to remove vapors.
- Wear chemical splash safety goggles.
- Wear chemical resistant gloves.
- Long sleeve shirt, long pants, shoes, and socks should be worn.
- Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.
- Let treated surfaces dry before allowing humans and pets to contact surfaces.

What are the symptoms of exposure to Lambda-cyhalothrin?

This insecticide is harmful if swallowed and contact with skin, eyes and clothing should be avoided. It causes moderate eye irritation. Prolonged or frequently repeated skin contact may

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cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling, and before eating, drinking, chewing gum, or using tobacco, or using the toilet.

How long does Lambda-cyhalothrin last in the environment?

Lambda-cyhalothrin is an extremely hydrophobic compound and has rapid and strong adsorption to soils and sediments. Lambda-cyhalothrin residues dissolved in water decrease rapidly if suspended solids and/or organic materials are present because lambda-cyhalothrin molecules are strongly adsorbed by particulates and plants. Primary degradation pathways include photolysis and aerobic metabolism.

This product is extremely toxic to fish. In order to protect the environment, Lambda is not allowed to enter or run off into storm drains, drainage ditches, gutters, or surface waters. This product should be applied in calm weather when rain is not predicted for the next 24 hours which will help ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid runoff to water bodies or drainage systems.

Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. This product should only be used as specified on the label. When making applications, care should be used to avoid household pets, particularly fish and reptile pets. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds.

Treatment for mosquitoes and ticks can be applied in seven-day intervals in outdoor settings.

Where can more information on Lambda be found?

The following resources can be used to attain more information on Lambda as it pertains to mosquito control in Hunterdon County:

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

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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 Lambda 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>

Hunterdon County Mosquito & Vector Control 2025 Fact Sheet

Pyrethrins

(Merus 3.0)

This sheet answers some basic questions about a mosquito control product in use in your county. The Hunterdon County Division of Mosquito Control, along with several other resources (listed at the end of this sheet), can provide more detailed information.

What is *Merus 3.0*™ and how is it used?

Merus 3.0™ contains botanical insecticides called **pyrethrins**, a class of organic compounds extracted from *Chrysanthemum* flowers. Unlike most pyrethroids (the synthetic equivalent of pyrethrins that are more commercially available), *Merus 3.0*™ does not contain additional chemical synergists such as piperonyl butoxide. *Merus 3.0*™ is Organic Materials Review Institute (OMRI) listed and meets National Organic Program (NOP) standards for adult mosquito control in and around organic gardens, farms and crops. It poses a low risk to human health and the environment when used properly as part of an integrated mosquito control program. Pyrethrins are considered non-carcinogenic at exposure relevant to human use, and no data is available to indicate the product or any components present at greater than 0.1% are mutagenic or teratogenic.

Merus 3.0™ is used for the control of adult mosquitoes. While habitat management and measures to control immature mosquitoes in water are preferred and most used, the spraying of adult mosquitoes is necessary when biting populations reach critical levels or when a disease organism is present in adult mosquitoes. A very fine mist is sprayed into the air since flying mosquitoes must directly contact the pesticide in order for it to be effective.

How can I reduce my exposure to *Merus 3.0*™?

Because of the very small amounts of active ingredients released per acre, the risk to the general public from the use of pyrethrin-containing products is minimal. Avoiding exposure is always the safest course of action. Any possible exposure risk can be reduced by following some common sense actions:

- Pay attention to notices about spraying found through newspapers, websites, automated telephone messages or distributed by municipal, county or state agencies.
- Plan your activities to limit time spent outside during times of possible pesticide treatments.
- Move your pets, their food, and water dishes inside during ULV application. Also bring clothing and children's toys inside.
- Stay away from application equipment, whether in use or not.

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- Whenever possible, remain indoors with windows closed and with window air conditioners on non-vent (closed to the outside air) and window fans turned off during spraying.
- Avoid direct contact with surfaces that are still wet from pesticide spraying. Do not allow children to play in areas that have been sprayed until they have completely dried (approximately one hour).
- If you must remain outdoors, avoid eye and skin contact with the spray. If you get spray in your eyes or on your skin, immediately flush and rinse with water.

What are the symptoms of exposure to *Merus 3.0*™?

Symptoms of over-exposure to pyrethrins can include irritation to skin and eyes, asthma-like symptoms, nausea, and vomiting. The chance of experiencing these symptoms of over-exposure with proper use is low. You should contact your physician, other medical providers, or the New Jersey Poison Information and Education System (NJPIES) at 1-800-222-1222 if you experience these symptoms following a pesticide spraying.

How long will *Merus 3.0*™ last in the environment?

In the presence of sunlight, pyrethrin 1 (a component of pyrethrins) has a half-life of 11.8 hours in water and 12.9 hours on soil surfaces. In the absence of light, pyrethrin 1 breaks down more slowly in water. Half-lives of 14 to 17 days have been reported. When water was more acidic, pyrethrin 1 did not readily break down. Pyrethrins that enter the water do not dissolve well but tend to bind to sediment. Half-lives of pyrethrin 1 in sediment are 10.5 to 86 days.

Where can I get more information on this adulticide?

The following are resources for more information regarding Merus 3.0 and mosquito control in your area (unless otherwise noted, available during normal business hours):

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

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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 Merus 3.0 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>

Hunterdon County Mosquito & Vector Control 2025 Fact Sheet

Abamectin, Fenpropathrin, & C8910

(ReMoa Tri)

This Fact Sheet answers some basic questions about mosquito control products in use in your county. The Hunterdon Country Mosquito & Vector Control, along with several other resources (listed at the end of this sheet), can provide more detailed information.

What is ReMoa Tri mosquito space spray and how is it used?

ReMoa Tri is an oil-based insecticide registered for use in controlling susceptible and permethrin resistant adult mosquitoes. It contains three active ingredients: abamectin, fenpropathrin, and C8910. This unique combination makes ReMoa Tri especially good at controlling mosquitoes resistant to other pesticides. Abamectin is a macrocyclic lactone fermented from a naturally occurring soil bacterium and is used as an antiparasitic by veterinarians. It interferes with a specific set of transmembrane proteins which are only found in invertebrates increasing their margin of safety for mammals. Fenpropathrin is a Type 2 pyrethroid insecticide (a synthetic version of pesticides produced by plants called pyrethrins) which is neurotoxic to insects. Pyrethroid insecticides have been recommended for Ultra-Low-Volume (ULV) mosquito control in New Jersey by Rutgers, The State University of New Jersey. The U.S. Environmental Protection Agency's (EPA) current evaluation considers pyrethroid-containing products to be slightly toxic with minimal potential risk to people when used properly as part of an integrated mosquito control program. C8910 is a patented fatty acid made from palm oil, coconut oil, and tallow that breaks down the insect cuticle and increases the efficacy of abamectin and fenpropathrin.

This product is used for the control of adult mosquitoes. While habitat management and measures to control immature mosquitoes in water are preferred and most used, the spraying of adult mosquitoes is called for when biting populations reach critical levels or when a disease organism is present in adult mosquitoes. A very fine mist is sprayed into the air since flying mosquitoes must directly contact the pesticide for it to be effective. The three active ingredients in ReMoa Tri each have different modes of action in the mosquito, making ReMoa Tri effective against mosquitoes that have developed resistance to other insecticides.

How can I reduce my exposure to ReMoa Tri?

Because of the very small amounts of active ingredients released per acre, the risk to the public from the use of this product is minimal. Avoiding exposure is always the safest course of action.

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Any possible exposure risk can be reduced by following some common-sense actions for **any** mosquito insecticide spray:

- Pay attention to notices about spraying found through newspapers, websites, social media, automated telephone messages or distributed by municipal, county, or state agencies.
- Plan your activities to limit time spent outside during times of possible pesticide treatments.
- Move your pets, their food, and water dishes inside during ULV application. Also bring clothing and children's toys inside.
- Stay away from application equipment, whether in use or not.
- Whenever possible, remain indoors with windows closed and with window air conditioners on non-vent (closed to the outside air) and window fans turned off during spraying.
- Avoid direct contact with surfaces that are still wet from pesticide spraying. Do not allow children to play in areas that have been sprayed until they have completely dried.
- If you must remain outdoors, avoid eye and skin contact with the spray. If you get spray in your eyes or on your skin, immediately flush and rinse with water.

What are the symptoms of over-exposure to ReMoa Tri?

Symptoms of over-exposure can include allergic reactions in some individuals, irritation to skin and eyes, respiratory and nasal irritation, dilated pupils, unsteadiness, and muscle tremors. The chance of experiencing these symptoms of over-exposure with proper use is low. You should contact your physician, other medical providers, or the New Jersey Poison Information and Education System at 1-800-222-1222 if you experience these symptoms following a pesticide spraying.

How long will ReMoa Tri last in the environment?

Pyrethroids have a soil half-life of 12 days. They have an extremely low pesticide movement rating because they bind tightly to the soil. Pyrethroids are unstable in light and air. They rapidly degrade in sunlight, at the soil surface and in water.

Where can I get more information on this insecticide?

The following are resources for more information regarding ReMoa Tri and mosquito control in your area (unless otherwise noted, available during normal business hours):

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

➤ **National Pesticide Information Center**

800-858-7378

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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 ReMoa Tri 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>

Hunterdon County Mosquito & Vector Control 2025 Fact Sheet

Etofenprox

(Including formulations Zenivex E4, Aqua Zenivex E20 and Zenivex E20)

This fact sheet answers some basic questions about mosquito control products in use in Hunterdon County. The Hunterdon County Division of Mosquito Control, along with several other resources (listed at the end of this sheet), can provide more detailed information. Municipalities are encouraged to share this information with all residents in their community.

What is Zenivex and how is it used?

Zenivex contains a pesticide called etofenprox, a member of the category of pesticides called non-ester pyrethroids, which are synthetic versions of pesticides produced by plants called pyrethrins. “Zenivex E4,” “Zenivex E20” and “Aqua Zenivex E20” make reference to three different formulations and concentrations of the product. Aqua Zenivex E20 formulation is a water-based product, whereas the Zenivex E4 and Zenivex E20 products are different concentrations oil-based formulations (containing 4% and 20% active ingredient, respectively). Traditional pyrethroid/piperonyl butoxide mixtures are recommended for ultra-low-volume (ULV) mosquito control in New Jersey by Rutgers, The State University of New Jersey. Zenivex is a non-ester pyrethroid, and therefore does not require a synergist such as piperonyl butoxide. The U.S. Environmental Protection Agency (EPA) has classified etofenprox as a reduced risk molecule. It poses a low risk to human health and the environment when used properly as part of an integrated mosquito control program. As formulated in Zenivex adulticide, etofenprox is considered a non-carcinogen, non-teratogen, and non-mutagen.

This non-ester pyrethroid-containing product is used for the control of adult mosquitoes. While habitat management and measures to control immature mosquitoes in water are preferred and most used, the spraying of adult mosquitoes is necessary when biting populations reach critical levels or when a disease organism is present in adult mosquitoes. A fine mist is sprayed into the air since flying mosquitoes must directly contact the pesticide for it to be effective.

How can I reduce my exposure to Etofenprox?

Because of the very small amounts of active ingredients released per acre, the risk to the general public from the use of non-ester pyrethroid-containing products is minimal. Avoiding exposure is always the safest course of action. Any possible exposure risk can be reduced by following these actions:

- Pay attention to notices about spraying found through newspapers, websites, automated telephone messages, or distributed by municipal, county, or state agencies.
- Plan your activities to limit time spent outside during times of possible pesticide treatments.
- Move your pets, their food, and water dishes inside during ULV applications. Also bring clothing and children’s toys inside.
- Stay away from application equipment, whether or not it is in use.

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- Whenever possible, remain indoors with windows closed, window air conditioners on non-vent (closed to the outside air), and window fans turned off during spraying.
- Avoid direct contact with surfaces still wet from pesticide spraying. Do not allow children to play in areas that have been sprayed until they have completely dried (approximately one hour).
- If you must remain outdoors, avoid eye and skin contact with the spray. If you get spray in your eyes or on your skin, immediately flush and rinse with water.

What are the symptoms of exposure to etofenprox?

Symptoms of over-exposure can include irritation to skin and eyes. The chance of experiencing these symptoms of over-exposure with proper use is low. You should contact your physician, other medical providers, or the New Jersey Poison Information and Education System (NJPIES) at 1-800-222-1222 if you experience these symptoms following a pesticide spraying.

How long will Etofenprox last in the environment?

The non-ester pyrethroid in etofenprox has a half-life of 1.7 days in water and 4.4 days in soil. The etofenprox molecule rapidly degrades in sunlight at the soil and water surface into its constituent elements carbon, hydrogen, and oxygen.

Where can I get more information on this adulticide?

The following are resources for more information regarding etofenprox and mosquito control in your area (unless otherwise noted, available during normal business hours):

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

Hunterdon County Mosquito & Vector Control 2025 Fact Sheet

For Mosquito Control Recommendations:

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

For Pesticide Health Information:

- **Hunterdon County Health Department** 908-788-1351
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If residents have questions about Zenivex 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>.