



# MOSQUITO HABITAT CHECKLIST

## Container mosquitoes are the #1 mosquito problem in Bergen County!

### WATER +7 DAYS = MOSQUITOES

Use this checklist to help you find and eliminate all the places that mosquitoes breed around your home. Any container that holds water can be a home for mosquito larvae. After 7 days, larvae will emerge as adult mosquitoes. Remember to stay vigilant and to keep containers free of standing water all year long.

#### COMMON HOUSEHOLD ITEMS

- |                          |  |   |
|--------------------------|--|---|
| <input type="checkbox"/> | <b>Buckets</b>                         | Problem: Buckets are the most common mosquito habitats found at homes.<br>Solution: Empty buckets and turn them over.   |
| <input type="checkbox"/> | <b>Garbage cans and recycling bins</b> | Problem: Garbage cans, recycling bins, and recycled containers can hold water.<br>Solution: Drill drainage holes in the bottoms of garbage cans and bins, keep covered and dispose of recycling weekly. |
| <input type="checkbox"/> | <b>Tarps, plastic bags and sheets</b>  | Problem: When tarps are not fitted tightly, multiple pockets form and collect water.<br>Solution: Keep tarps tight and refit them if water collects.  |

#### BUILDING STRUCTURES

- |                          |                                      |  |
|--------------------------|--------------------------------------|--|
| <input type="checkbox"/> | <b>Gutters</b>                       | Problem: Gutters hold water when clogged with leaves or improperly pitched. Plus the leaf debris provides food for the larvae<br>Solution: Keep gutters clean and properly pitched.  |
| <input type="checkbox"/> | <b>Flexible downspout extensions</b> | Problem: Improper pitch and ridges cause these pipes to hold water.<br>Solution: Pitch downspout extensions so water drains completely after it rains or replace with a non-flexible extension that is pitched to drain fully. Keep the inside free of debris. |
| <input type="checkbox"/> | <b>Leaky hose spigots</b>            | Problem: Water can accumulate below the faucet.<br>Solution: Fix leak or call a professional plumber.  |
| <input type="checkbox"/> | <b>Decks &amp; Porches</b>           | Make sure to check under decks and porches for containers that may hold water.   |

#### AROUND THE GARDEN

- |                          |  |   |
|--------------------------|--|---|
| <input type="checkbox"/> | <b>Planter saucers</b>                 | Problem: If a plant saucer holds water for 5-7 days it will support mosquito larvae.<br>Solution: Dump the water out every 3-5 days or don't use a saucer at all.   |
| <input type="checkbox"/> | <b>Planters without drainage holes</b> | Problem: Planters fill with water after heavy rains.<br>Solution: Drill holes in the bottom of your planter – it's healthier for your plants.   |
| <input type="checkbox"/> | <b>Self-watering planters</b>          | Problem: The hole used to water the plant is also used by the female mosquito to access the water and lay eggs.<br>Solution: Tightly seal the watering hole after adding water. If this is not possible, treat the reservoir water with a Bti* product. The most effective method for preventing mosquitoes is to not use these planters.                       |
| <input type="checkbox"/> | <b>Wheelbarrows</b>                    | Problem: Water collects in the main tub or small crevices inherent in their construction.<br>Solution: Turn wheelbarrows over or store them on end. If crevices present, check weekly and move to empty any water you find.   |
| <input type="checkbox"/> | <b>Watering Cans</b>                   | Problem: Watering cans holding water for many days will attract egg laying mosquitoes.<br>Solution: Empty and store upside down or in a garage or shed.   |
| <input type="checkbox"/> | <b>Rain Barrels</b>                    | Problem: Rain barrels conserve water but can also be a perfect home for mosquito larvae.<br>Solution: Cover tops of rain barrels with tightly fitted screen. (Use nylon window screen and secure with a bungee cord or other tight elastic.) Mosquitoes will use the overflow hole to get in and lay their eggs; either plug hole or treat with a Bti* product. |
| <input type="checkbox"/> | <b>Bird Baths</b>                      | Problem: Unless water is changed regularly, mosquito larvae flourish.<br>Solution: Change water at least once a week.   |
| <input type="checkbox"/> | <b>Ornamental ponds</b>                | Problem: Ornamental ponds without fish provide a great home for mosquitoes.<br>Solution: Get fish. If that is not an option, you can use Bti* to treat for mosquito larvae.   |



☐ Behind the shed & under the shrubs

Problem: Discarded and unattended items in hard to reach spaces can collect water.  
Solution: Look under bushes and in overlooked spots in the yard and remove debris that can hold water.

☐ Tires

Problem: Water left inside tires will cause mosquitoes to breed.  
Solution: Rid of old tires or you can puncture holes at the bottom of the tire so it may drain any water that is trying to collect within the tire.

#### CHILDREN'S TOYS

☐ Portable basketball hoops

Problem: The fill holes in the base of a portable basketball hoop allow mosquitoes to reach the water and lay eggs.

Solution: Make sure caps for fill holes are in place; replace if lost.

☐ Kiddie pools

Problem: Kiddie pools can become mosquito habitat if the water is not changed often.

Solution: Empty or change water in kiddie pools every 5 - 7 days. Be sure to store indoors or turned over when not in use.

☐ Sand boxes

Problem: Water accumulates in some plastic sand boxes whether covered or not.  
Solution: Drill small drainage holes in the bottom of your sand box.

☐ Big plastic toys, wagons, etc.

Problem: Wagons, dump trucks, cars, kitchen sets, and playhouses all fill with rain water when left outside and, if left unchecked, will breed mosquitoes.

Solution: Keep toys turned over or inside when not in use. If water can get inside the plastic toy so can a mosquito - drill drainage holes in the bottom.

☐ Deflated toys

Problem: Like a tarp, a deflated toy (kiddie pool, bounce house, etc.) will create multiple small pockets that fill with water and provide habitat for larvae.

Solution: Drain off water, dry out, and store indoors when not in use.

#### RECREATION

☐ Boats

Problem: There are many compartments on boats that can collect water. Even when a boat itself doesn't hold water there can be containers left on a boat that do.  
Solution: Empty all the water possible. If there is water that can't be emptied, you can treat it with a Bti\* product. Cover boats in storage with taut tarps or use boat shrink wrap.

☐ Jet skis

Problem: The foot depressions tend to hold water and provide a mosquito breeding ground.

Solution: Rinse out the foot depressions with a hose every week. Jet skis can be tightly tarped or stored indoors.

☐ Pools/pool covers

Problem: Pool covers and pool skimmer compartments filled with water breed mosquitoes.

Solution: Treat the pool or pool cover with Bti\* in the spring before you open it. If you know of an abandoned home in your neighborhood with an unkept pool, call the **Bergen County Health Dept 201-634-2600**. It may need to be treated or stocked with fish that eat mosquito larvae.

*\* A note about Bti - Ideally, keep containers dry or discard if unneeded. If you do need to treat for mosquito larvae in a container, use the low impact pesticide Bti (Bacillus thuringiensis israelensis). It is available at many hardware stores, pond supply stores and online. Bti effectively targets mosquito larvae. It can be purchased as a granule, briquette, or liquid. Be sure to choose a product that is registered with the US EPA, labeled to use for mosquito larva. Closely follow the directions on the label. You may only use these products on your property; if you see a source of standing water elsewhere, call the **Bergen County Mosquito Control Division**.*



The primary strategy for mosquito control relies on an Integrated Pest Management approach that focuses on controlling mosquito larvae versus broad control of adult mosquitoes. Much of the effort is on source control-- reducing or eliminating the standing water where mosquito larvae live. This checklist can help you do your part to control mosquitoes in your landscape.

Bergen County Executive  
James J. Tedesco III

Department of Public Works

Bergen County Mosquito Division  
Warren F. Staudinger



**COUNTY OF BERGEN  
DEPARTMENT OF PUBLIC WORKS  
MOSQUITO CONTROL DIVISION  
220 E. Ridgewood Ave., Paramus, NJ  
(201) 634-2880/2881 • Fax (201) 634-2888**

**James J. Tedesco III**  
County Executive

**Warren Staudinger**  
Mosquito Control Division Director

April 1, 2022

To Whom It May Concern: Enclosed you will find New Jersey Department of Environmental Protection Agency approved information about the Bergen County Mosquito Control Division's operations. This information is provided to be in compliance with N.J.A.C. 7:30-9.10e.

This packet contains the following enclosures:

1. A question and answer sheet on "Mosquitoes – What Everyone Should Know"
2. An example of the "Public Notice" for adult mosquito control treatment which will appear in local papers for the period of April 30, 2022 through October 31<sup>st</sup>, 2022.
3. Fact sheet on Fyfanon®, Zenivex™, and Duet® adulticide products that may be used by the Division to control the disease incidence and nuisance levels caused by adult mosquitoes.

Pursuant to N.J.A.C. 7:30-9.10(e) 2iii, "Municipalities are encouraged to share this information with all residents in their community." If desired, you may contact the Division to arrange for a speaker to talk about mosquito control in your municipality.

Sincerely,

A handwritten signature in blue ink that reads "Warren Staudinger".

Warren Staudinger  
Division Director

Bergen County Mosquito Control Division  
220 East Ridgewood Ave, Paramus, NJ 07653  
Tel: 201-634-2881, Fax: 201-634-2888  
<https://www.co.bergen.nj.us/mosquito-control>



## BERGEN COUNTY DEPARTMENT OF PUBLIC WORKS-MOSQUITO CONTROL

### PUBLIC NOTICE

Mosquito Control is everyone's responsibility; please do your part by preventing mosquitoes from breeding on your property. For more information on mosquitoes and mosquito control contact The Bergen County Mosquito Control Program at 201-634-2880 or 201-634-2881 and or visit our website at <https://www.co.bergen.nj.us/mosquito-control>.

In compliance with Section 9.10 of the New Jersey Pesticide Control Code (N.J.A.C. Title 7 Chapter 30), the Bergen County Department of Public Works -Mosquito Control Division (220 East Ridgewood Ave, Paramus, New Jersey 07652) will be applying insecticides to control and reduce adult mosquito populations on an area-wide basis as needed throughout Bergen County during the period from April 30, 2022 to October 31, 2022.

The insecticides used will be those recommended by the New Jersey Agricultural Experiment Station (NJAES) for the control of adult mosquitoes which include:

- DUET/ DUET HD (Active Ingredients: Prallethrin and Resmethrin)
- Zenivex (Active Ingredient: Etofenprox)
- Fyfanon (Active Ingredient: Malathion)

These may be applied using truckmounted Ultra Low Volume (ULV) equipment or by helicopter. All products will be applied according to product labeling and NJAES recommendations.

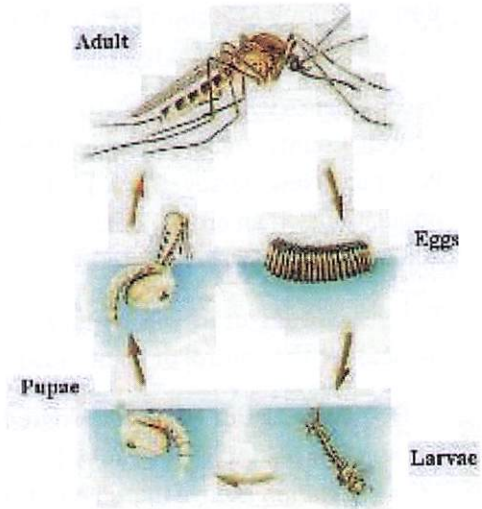
In case of pesticide emergency please contact the New Jersey Poison Control Center at 1-800-222-1222; or the National Pesticide Information Center at 1-800-858-7378 for routine pesticide-related health inquiries.

Upon request the Bergen County Mosquito Control shall provide a resident with notification at least 12 hours prior to the application, except when conditions necessitate insecticide applications sooner than 12 hours.

The phone number for updated information on time and location of applications is 201-225-7000, option 1. For information on pesticide regulations, pesticide complaints and health referrals contact the New Jersey Pesticide Control Program at 1-609-984-6568.

**MOSQUITOES...WHAT EVERYONE SHOULD KNOW****Questions & Answers****What is the life cycle of mosquito?**

Mosquitoes have four stages of development: egg, larva, pupa, and adult. They spend their larval and pupal stages in water. Female mosquitoes of most species deposit eggs on moist surfaces such as mud or fallen leaves. Rain re-floods these surfaces and stimulates the hatching of the eggs. Other mosquito species lay their eggs on permanent water surfaces. Since the water source is constant, egg hatching and larval development is an ongoing process. Mosquitoes take approximately one week to develop from egg to adult. After emerging from the aquatic stages, adult mosquitoes mate and females seek a blood meal to obtain nutrients for egg development. Only the female mosquitoes bite. Adult male mosquitoes feed on plant nectar and die shortly after mating. The average life span for adult mosquitoes is 2 - 3 weeks.

**How many kinds of mosquitoes are there?**

There are more than 63 mosquito species found in New Jersey. Fortunately, most mosquito species either do not prefer to feed on humans or do not occur in high enough numbers to cause a problem. Between 24 and 28 problematic species occur regularly throughout the County during the year.

**What human diseases do mosquitoes transmit?**

West Nile virus (WNV), St. Louis (SLE) and Eastern Equine encephalitis (EEE) are several diseases that can be transmitted by mosquitoes found in Bergen County. WNV was first identified in the United States in New York City and surrounding areas in the fall of 1999. The primary transmitter of WNV and SLE are mosquitoes commonly found around homes. These mosquitoes will readily utilize tires or containers holding water. Both of these diseases can pose a significant threat to the very young and old, as well as individuals with compromised immune systems. EEE, while rare in Bergen County, is a more dangerous disease and is transmitted by mosquitoes that are produced in permanent swamps and saltwater marshes.

**What animal diseases do mosquitoes transmit?**

Dogs and horses are also susceptible to mosquito-transmitted diseases. Dog heartworm is a serious threat to your pet's life and is costly to treat once it is contracted through the bite of an infected mosquito. Fortunately, preventative medicines are available to protect your dog from contracting heartworm. WNV and EEE are threats to horses as well as to humans. Vaccines are also readily available to protect your horse against EEE and WNV. Contact your local veterinarian for more information. WNV has also been responsible for the death of numerous birds, mostly in the wild bird population.

**What does the Division do?**

Bergen County has been performing mosquito control since 1914. Mosquito-borne disease control and quality of life assurance are the principal concerns of the Division. The statutory mandate of the Division is "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 key to the Division's activities is a comprehensive surveillance program. The presence of a mosquito problem must be documented before any control measures can be initiated. Emphasis is placed on the elimination of mosquito production habitat and the control of mosquitoes while they are still in the aquatic stages of their development.

**What control efforts does the Division utilize?**

The Division uses an Integrated Pest Management (IPM) approach to controlling mosquitoes. An IPM program employs various methods of control including, but not limited to: surveillance, water management, source reduction, biological control, biological and man-made pesticides, and education. With an IPM strategy, control efforts focus primarily on the immature, water-borne stages of the mosquito. These immature stages are more concentrated and accessible than the adult mosquitoes, which disperse after emerging. The primary insecticide applied from the ground is a bio-rational insecticide derived from the bacteria, *Bacillus thuringiensis* var. *israelensis* (Bti), which is specific to the mosquito's metabolism. Fish are available to the Division from the NJ Division of Fish & Wildlife as part of the State Mosquito Control Commission's bio-control program. The fish available are fathead minnows, banded killifish, sunfish, and mosquitofish. The Division will supply fish free of charge to any county resident to control mosquitoes after NJ Department of Environmental Protection (NJDEP) fish stocking criteria are satisfied. The Division conducts year round water management (source reduction) projects that control mosquitoes by eliminating mosquito habitat water. These operations are accomplished following the NJDEP Best Management Practices manual. Hand labor and excavating equipment are utilized for this work. If surveillance indicates that a nuisance level of mosquitoes is reached or disease is detected, a spray for adult mosquitoes may be applied by hand-held sprayers, truck-mounted sprayers, or from the air. All pesticides used are registered for use in New Jersey with the US Environmental Protection Agency (EPA) and the NJDEP. These products are also reviewed and recommended by the New Jersey Agricultural Experiment Station, School of Environmental and Biological Sciences/Rutgers University.

**What are the winter activities of the Mosquito Control Division?**

Pesticides are not used to control mosquitoes during the winter when they are inactive. However, many other activities are continued throughout the year. These include water management, necessary repairs and maintenance, and record keeping on the past season's mosquito control activities. The inspection routes are revised to include new larval sources and remove sources that no longer exist. Brush is removed to enable easy access to treat larval habitats during the following mosquito season. Site evaluation is conducted on potential areas for fish stocking or for water management projects. Beehives are located to prevent accidental pesticide exposure to honey bees during spray operations. Presentations are made at public events on mosquitoes and mosquito control. Employees attend training classes to fulfill NJDEP pesticide licensing requirements.



### **What can homeowners do?**

- Homeowners can control mosquitoes by eliminating standing water on their property. Any container holding water is a potential source of mosquitoes and is likely to cause problems around your home. Of particular concern are clogged gutters, scattered tires and unopened swimming pools. These tend to collect leaves and water and provide very attractive habitats for mosquito larvae. Keep gutters clean and free-flowing. Remove or overturn containers that may collect water.
- Remove water from swimming pool covers. If pools are not covered, make sure the water is clean so it is not attractive to mosquitoes. Natural depressions in your yard can hold water. They will not be a problem, however, if the water disappears within 4 to 5 days. Artificial containers will remain wet for a much longer period of time. If you wish to collect rainwater, tightly screen the tops of the containers to prevent mosquitoes from depositing their eggs on the water surface. Items such as pet water bowls and birdbaths should be emptied and refilled at least once a week.
- Small depressions in your yard can be filled to prevent the collection of water. If larger wet areas exist on your property, bring them to the attention of the Mosquito Control Division.
- Make sure windows and door screens are properly fitted and holes are patched to prevent mosquitoes from entering the house.
- A wide variety of repellents are available to provide relief from mosquitoes and other insects. Always **read and follow the label** before using any repellent.

### **What can I do if there are adult mosquitoes around my home?**

If mosquitoes are causing a problem in your area, contact the Division office at (201) 634-2881. Staff will investigate your call promptly. Each area is inspected to locate mosquito-production sources and to verify the presence of adult mosquitoes. If an adult or larval mosquito problem is identified, insecticides may be applied for their control.

### **What pesticides are used to control mosquitoes?**

The majority of the pesticides (insecticides) used are to control immature mosquitoes in the water. These insecticides may be applied either by ground equipment or aircraft. If a major adult mosquito problem is identified, or if disease-carrying mosquitoes are detected, an adulticide may be applied throughout the area of infestation. For more information regarding the pesticides used for adult mosquito control, please refer to the accompanying NJDEP approved pesticide fact sheets. Some of the insecticides used to control mosquitoes are also used to control other pests. However, the dosage rates for mosquitoes are usually much lower, as low as 5/8ths of an ounce per acre to control mosquito larvae.

### **Where can I find more specific information on spraying for adult mosquitoes in Bergen County and will I be notified of the spraying?**

All spraying for adult mosquitoes on more than 3 acres aggregate, whether conducted from the ground or air, will be advertised in The Record and The Herald News. The advertisements will contain information such as intended application dates, locations, contacts, and phone numbers. This information is also available by accessing the Bergen Bites Back web page (<https://www.co.bergen.nj.us/health-promotions/bergen-bites-back>). Individual homeowners can request to be notified prior to an adulticide application near their home. Contact the Division for details on the procedure to request notification.

3-2022

MUNICIPALITIES ARE ENCOURAGED TO SHARE THIS INFORMATION WITH ALL RESIDENTS IN THEIR COMMUNITY

**Municipalities are encouraged to share this information with all residents in their community**

## **Adult Mosquito Control Product**

### **Fyfanon**

This **fact sheet** answers some basic questions about a mosquito control product used in your county. The Bergen County Mosquito Control Division, 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 pesticide malathion. The U.S. Environmental Protection Agency (EPA) "evaluates and registers (licenses) pesticides to ensure they can be used safely", and their current evaluation of products containing malathion shows them to be slightly toxic with minimal potential risk to people when used properly as part of a complete mosquito control program.

Malathion is used for the control of adult mosquitoes in an integrated pest management (IPM) approach to mosquito control. IPM strategy includes habitat management, source reduction, biological control and other measures to control immature mosquitoes, augmented by adult mosquito control when needed. The spraying of adult mosquitoes is called for when biting populations reach critical annoyance levels or when a disease organism is present in adult mosquitoes. A fine mist of malathion is applied during times of peak mosquito activity, since flying mosquitoes must directly contact the pesticide in order for it to be effective.

#### **How can I avoid exposure to Fyfanon?**

Risk to the public from the use of Fyfanon is minimal. Avoiding exposure is always the safest course of action, particularly for those 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 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 potential pesticide treatments, usually at sunset and sunrise.
- 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 during spraying, remain indoors with windows closed, window air conditioners set on non-vent (closed to the outside air), and window fans turned off.
- Avoid direct contact with surfaces that are 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, flush and rinse with water.



**What are the symptoms of exposure to Fyfanon?**

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 extremely 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?**

The Fyfanon spray stays in the air for a short time until it settles out and lands on surfaces. Fyfanon has a low persistence and lasts no longer than 25 days in water and soil. Fyfanon breaks down quickly 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 – 9:30am to 7:30pm:  
**National Pesticide Information Center**                      **800-858-7378**

For pesticide health information & possible exposures – 24 hours:  
**NJ Poison Information & Education System**                      **800-222-1222**

For pesticide regulation & misuse complaints:  
**NJDEP Pesticide Control Program**                      **609-984-6568**

For pesticide regulation:  
**USEPA Region 2 Office of Pesticide Programs**                      **732-906-6803**

For pesticide health information:  
**Bergen County Department of Health Services**                      **201-634-2600**

For mosquito control insecticide recommendations:  
**Rutgers University, Department of Entomology**                      **732-932-9774**

Where can I get more information about local mosquito control?  
**Bergen County Mosquito Control**                      **201-634-2880**

For state-wide mosquito control information:  
**NJDEP Office of Mosquito Control Coordination**                      **609-292-3649**

**Municipalities are encouraged to share this information with all residents in their community**

## **Adult Mosquito Control Product**

### **Zenivex**

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

#### **What is Etofenprox 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. 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 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 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 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 applications. Also bring clothing and children's toys inside.
- Stay away from application equipment, whether or not it is in use.
- 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 – 9:30am to 7:30pm:  
**National Pesticide Information Center**                      **800-858-7378**

For pesticide health information & possible exposures – 24 hours:  
**NJ Poison Information & Education System**                      **800-222-1222**

For pesticide regulation & misuse complaints:  
**NJDEP Pesticide Control Program**                      **609-984-6568**

For pesticide regulation:  
**USEPA Region 2 Office of Pesticide Programs**                      **732-906-6803**

For pesticide health information:  
**Bergen County Department of Health Services**                      **201-634-2600**

For mosquito control insecticide recommendations:  
**Rutgers University, Department of Entomology**                      **732-932-9774**

Where can I get more information about local mosquito control?  
**Bergen County Mosquito Control**                      **201-634-2880**

For state-wide mosquito control information:  
**NJDEP Office of Mosquito Control Coordination**                      **609-292-3649**

Municipalities are encouraged to share this information with all residents in their community

### **Duet/AquaDuet/Duet HD**

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

#### **What is Duet adulticide and how is it used?**

Duet contains two pesticides called prallethrin and sumithrin, and a synergistic compound called piperonyl butoxide which increases the effectiveness of the pesticides. AquaDuet is a water-based formulation of Duet. Duet HD is a heavier formulation developed for aerial applications. Prallethrin and sumithrin are members of a category of pesticides called pyrethroids, which in turn are synthetic versions of pesticides produced by plants called pyrethrins. Pyrethroid/piperonyl butoxide mixtures 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.

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 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 in order for it to be effective. The combination of the two pesticides has been shown to produce what the manufacturer calls 'benign agitation'. In other words, mosquitoes are agitated from a resting state to a non-biting flying state where they are more vulnerable to pesticide exposure. This makes Duet Dual-Action® adulticide more effective against hard-to-control species like *Aedes albopictus* which typically rest during the evening hours when adulticiding usually takes place.

#### **How can I reduce my exposure to Duet?**

Because of the very 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 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.
- 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 Duet?**

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, vomiting, diarrhea, excessive salivation, and fatigue. 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 Duet 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. Piperonyl butoxide has a soil half-life of approximately 4 days.

**Where can I get more information on this adulticide?**

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

For overall pesticide-specific information – 9:30am to 7:30pm:  
**National Pesticide Information Center**                      **800-858-7378**

For pesticide health information & possible exposures – 24 hours:  
**NJ Poison Information & Education System**                      **800-222-1222**

For pesticide regulation & misuse complaints:  
**NJDEP Pesticide Control Program**                      **609-984-6568**

For pesticide regulation:  
**USEPA Region 2 Office of Pesticide Programs**                      **732-906-6803**

For pesticide health information:  
**Bergen County Department of Health Services**                      **201-634-2600**

For mosquito control insecticide recommendations:  
**Rutgers University, Department of Entomology**                      **732-932-9774**

Where can I get more information about local mosquito control?  
**Bergen County Mosquito Control**                      **201-634-2880**

For state-wide mosquito control information:  
**NJDEP Office of Mosquito Control Coordination**                      **609-292-3649**

Spraying for adult mosquitoes is a last resort. Most mosquito control work goes on behind the scenes, using water management, fish, and products to control immature mosquitoes in the water where they begin their life cycle. Controlling adult mosquitoes is more difficult because they are spread out and moving.

If you have questions about Duet or any other mosquito control related products or practices, please feel free to call the Bergen County Mosquito Control Division at (201) 634-2880 (Mon-Fri 7:00 AM – 3:30 PM), or visit our web site at <https://www.co.bergen.nj.us/mosquito-control>.