

# MIDDLESEX COUNTY MOSQUITO EXTERMINATION COMMISSION

200 PARSONAGE ROAD • EDISON, NJ 08837-2118



Tel: (732) 549-0665  
Fax: (732) 603-0280

*Supporter of the US EPA PESP Document*



Superintendent  
Deepak Matadha, PhD

March 21, 2024

To Whom It May Concern:

Enclosed you will find New Jersey Department of Environmental Protection Agency approved information about the Middlesex County Mosquito Extermination Commission'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. Fact sheet on DeltaGuard®, Duet®, Fyfanon®, and Zenivex® Adulticides – the mosquito control products that may be used by the Commission to control the disease incidence and nuisance levels caused by adult mosquitoes.
3. An example of the "Public Notice for Adult Mosquito Control Treatment" which will appear in local papers for the period of May 1<sup>st</sup>, 2024 through October 31<sup>st</sup>, 2024.
4. Mosquito Prevention and Protection – Fact Sheet
5. Mosquito Habitat Elimination Checklist.

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 Commission to arrange for a speaker to talk about mosquito control in your municipality.

The information provided in this packet, our **Request for Service** form for Middlesex County residents and more is all available for download on our web page:

<http://middlesexmosquito.org>.

Sincerely,

Deepak Matadha, PhD  
Superintendent



Enclosures



# MIDDLESEX COUNTY MOSQUITO EXTERMINATION COMMISSION

200 Parsonage Road • Edison, NJ 08837-2118



Tel: (732) 549-0665  
Fax: (732) 603-0280

*Supporter of the US EPA PESP Document*



Superintendent  
Deepak Matadha, PhD

---

## Public Notice Adult Mosquito Control Treatment

Mosquito control is everyone's responsibility; please do your part by preventing mosquito production on your property. In compliance with section 9.10 and 9.15 of the New Jersey Pesticide Control Code (N.J.A.C. Title 7, Chapter 30), the **Middlesex County Mosquito Extermination Commission (MCMEC)** may be applying mosquito control products for the control of adult mosquito populations on an area-wide basis, as needed, throughout Middlesex County during the period of May 1<sup>st</sup> through November 30<sup>th</sup>.

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

- Malathion (Fyfanon® ULV, EPA Reg#279-3539)
- Etofenprox (Zenivex® E4 RTU, EPA Reg#2724-807; or Zenivex E20, EPA Reg#2724-791)
- Prallethrin - Sumithrin (Duet™ Dual-Action Adulticide, EPA Reg#1021-1795-8329)
- Deltamethrin (DeltaGard® EPA Reg#432-1534)

All applications will be according to product labeling. Products will be applied from the ground by truck or handheld spray equipment and/or by aircraft, all using low volume (LV) or ultra-low volume (ULV) techniques.

For routine pesticide-related health inquiries, please contact the National Pesticide Information Center, at 1-800-858-7378. For information on pesticide regulations, pesticide complaints and health referrals, contact the New Jersey Pesticide Control Program at 1-877-927-6337. In the case of any pesticide emergency, please contact the New Jersey Poison Information and Education System at 1-800-222-1222. Upon request, the pesticide applicator (MCMEC) 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 the most updated information on the time and location of adult mosquito control application(s), please visit our website at [middlesexmosquito.org](http://middlesexmosquito.org) or call the Office at 732-549-0665. For additional information on mosquitoes and mosquito control, contact the Superintendent (NJDEP CPA License #50245B), Middlesex County Mosquito Extermination Commission, 200 Parsonage Road, Edison NJ 08837, at 732-549-0665 and/or visit our website.



# MIDDLESEX COUNTY MOSQUITO EXTERMINATION COMMISSION



200 PARSONAGE ROAD • EDISON, NJ 08837-2118



Tel: (732) 549-0665  
Fax: (732) 603-0280

*Supporter of the US EPA PESP Document*

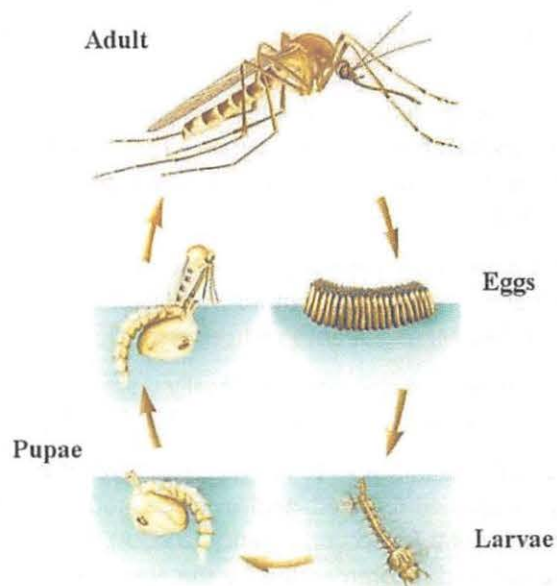
Superintendent  
Deepak Matadha, PhD

## 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, starting the life cycle. Other mosquito species lay their eggs on permanent water surfaces. Since the water source is constant, egg hatching, and larval development is an on-going 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 needed for egg development. Only 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?

In Middlesex County, there are more than 40 different mosquito species, with more than 63 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 commonly in the County during the year.

#### What human diseases do mosquitoes transmit?

West Nile virus (WNV), St. Louis encephalitis (SLE) and eastern equine encephalitis (EEE) are several diseases that can be transmitted by mosquitoes found in Middlesex County. The primary transmitter of WNV and SLE are mosquitoes commonly found around homes. These mosquitoes will deposit eggs in tires or any container holding water. Both diseases can pose a significant threat to the very young and old, as well as individuals with compromised immune systems. EEE, while rare, is a more dangerous disease and is transmitted by mosquitoes that are produced in swamps and saltwater marshes.

#### What animal diseases do mosquitoes transmit?

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

#### What is the County Mosquito Commission?

The Middlesex County Mosquito Extermination Commission (the Commission) was created in 1914 in accordance with the laws of the State of New Jersey, NJSA, Title 26, Chapter 9, Article 2, to provide quality mosquito control to the residents of



Middlesex County. Mosquito-borne disease control and quality of life assurance are the principal concerns of the Commission. The statutory mandate of the Commission 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 Commission's Board is comprised of a County Commissioner and County Commission-appointed citizens whose job it is to oversee the Commission's operations.

### **How does the Commission Control Mosquitoes?**

The Commission uses an Integrated Pest Management (IPM) approach to controlling mosquitoes. An IPM program employs a combination of methods of control including mosquito surveillance, water management, source reduction, biological control, biological and man-made insecticides, and public outreach and education. With an IPM strategy, control efforts focus primarily on the immature, aquatic stages of the mosquito. These immature stages are more concentrated and accessible than the adult mosquitoes, which disperse after emerging from their aquatic habitat. The primary insecticide used to control mosquito larvae is a bio-rational insecticide derived from the bacteria, *Bacillus thuringiensis* var. *israelensis* (Bti).

Fish are available to the Commission from the NJ Division of Fish, Game & Wildlife as part of the State Mosquito Control Commission's bio-control program. The fish available are fathead minnows, freshwater killifish, sunfish, and the mosquito fish. The Commission will supply fish, free of charge, to any county resident to control mosquitoes after fish stocking criteria are satisfied.

The Commission conducts year-round water management (source reduction) projects that control mosquitoes by eliminating, removing, or modifying larval mosquito habitats. These projects/operations are accomplished following the NJDEP Best Management Practices manual. Hand labor and excavating equipment are used for this work.

The Commission also collects illegally discarded tires to eliminate them as larval sources for mosquitoes. The Commission has collected and recycled well over 100,000 illegally discarded tires since the program's inception in 1991.

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 or truck-mounted sprayers or from the air. All pesticides used are registered with the US Environmental Protection Agency (USEPA), and the NJDEP, and are legal for use in New Jersey. 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 Commission?**

Generally insecticidal control operations are not employed when mosquitoes are not active during winter months (November through March). However, all other control activities continue throughout the year. Permits are pursued for the water management projects. Necessary repairs and maintenance are performed on excavation and pesticide application equipment. The inspection routes are reviewed and revised as necessary to record new larval sources and remove sources that no longer exist. Larval production sources that were difficult to access due to the presence of dense vegetation are inspected after the foliage falls for a clearer view of the areas. These sources then may have paths cleared to allow easier access during the next mosquito production season, and debris dams are cleared from drainage structures. Site evaluation is conducted on potential areas for fish stocking or for water management projects. Illegally discarded tires are picked and recycled. Presentations are made at schools, civic organizations and interested groups on mosquitoes and mosquito control. Commission employees attend training classes to maintain their NJDEP-issued Certified Pesticide Applicators licenses.

### **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. All tend to collect leaves and water and provide very attractive larval sources for mosquitoes. These containers dry out very slowly. 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. 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 and any openings 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.
- Natural depressions in your yard can hold water. However, they will not be a problem, if the water dries out within 4 to 5 days. Depressions or low areas 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 Commission personnel.
- Make sure windows and door screens are properly fitted and holes are patched to prevent mosquitoes from entering your home.
- 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 a problem in your area, contact the Commission's office at (732) 549-0665 or use the "**Request for Inspection/Service**" feature on our web page. Each area is inspected to locate mosquito 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 insecticides used are mainly to control immature mosquitoes in the water (known as a larvicide). 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 by Commission personnel for adult mosquito control, please refer to the accompanying NJDEP approved pesticide fact sheets or visit our website.

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

All spraying for adult mosquitoes on a community or area wide basis (more than 3 acres aggregate), whether conducted from the ground or air, will be advertised in the Home News Tribune and the Star Ledger. The advertisements will contain information such as intended application dates or range of application dates, location, contact name, and phone number. This information is also available by accessing the **Commission's web page on the Middlesex County website** (<http://MiddlesexMosquito.org>). Individual homeowners can request to be notified prior to an adulticide application near their home. Contact the Commission for details on the procedure to request notification.

### **Are there precautions I should take if the Commission is treating for adult mosquitoes in my area?**

Adult mosquito treatments will not harm people, pets, animals, or the environment when conducted according to the insecticide label. If you would like to take precautions, you can:

- Plan your activities to limit time spent outside during times of insecticide treatments. Move your pets, their food, and water dishes inside during applications.
- Whenever possible, remain indoors with windows closed and with window air conditioners on non-vent (closed to the outside air) or window fans turned off during spraying.
- Wait one hour before children play in areas that have been sprayed.
- If you must remain outdoors, avoid eye and skin contact with the spray. Stay back from application equipment. If you get spray in your eyes or on your skin, immediately flush and rinse with water. If you believe that you have been exposed to pesticide spray and have health-related questions, contact your physician.

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

# MIDDLESEX COUNTY MOSQUITO EXTERMINATION COMMISSION

200 Parsonage Road • Edison, NJ 08837-2118



Tel: (732) 549-0665

Fax: (732) 603-0280

*Supporter of the US EPA PESP Document*



Superintendent  
Deepak Matadha, PhD

---

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

### "Zenivex"

This Fact Sheet answers some basic questions about mosquito control products in use in your County. The Middlesex County Mosquito Commission, 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*<sup>TM</sup> 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*<sup>TM</sup> 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*<sup>TM</sup> 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:

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

For New Jersey pesticide regulation & misuse complaints – 24 hours:

**NJDEP Pesticide Control Program** 877-927-6337

For Federal pesticide regulation:

**US EPA Region 2 Office of Pesticide Programs** 877-251-4575

For statewide mosquito control information:

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

For local mosquito control information:

**Middlesex County Mosquito Commission** 732-549-0665

For mosquito control recommendations:

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

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 Zenivex or any other mosquito control related products or practices, please feel free to call the Middlesex County Mosquito Commission at (732) 549-0665 (Mon-Fri; 7:00 AM – 3:30 PM), or visit our web page at: <http://middlesexmosquito.org>



# MIDDLESEX COUNTY MOSQUITO EXTERMINATION COMMISSION

200 Parsonage Road • Edison, NJ 08837-2118



Tel: (732) 549-0665  
Fax: (732) 603-0280

*Supporter of the US EPA PESP Document*



Superintendent  
Deepak Matadha, PhD

**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 Middlesex County Mosquito Extermination Commission, 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 pesticide-specific information – 9:30am to 7:30pm EST:

**National Pesticide Information Center**

**800-858-7378**

**<http://npic.orst.edu/>**

For pesticide health information and possible exposures – 24 hours:

**New Jersey Poison Information and Education System**

**800-222-1222**

For New Jersey pesticide regulations and misuse complaints – 24 hours:

**NJDEP Pesticide Control Program**

**877-927-6337**

**<http://www.nj.gov/dep/enforcement/pcp/bpo.htm>**

For Federal pesticide regulations:

**USEPA Region 2 Office of Pesticide Programs**

**877-251-4575**

**<http://www.epa.gov/pesticides>**

For state-wide mosquito control information:

**NJDEP Office of Mosquito Control Coordination**

**609-292-3649**

For local health information:

**Your Municipal Health Department-Check your telephone book for the number.**

For local mosquito control information:

**The Middlesex County Mosquito Commission**

**732-549-0665**

**<http://middlesexmosquito.org>**

For mosquito control recommendations:

**Rutgers University, Department of Entomology**

**848-932-9774**

**<http://vectorbio.rutgers.edu/outreach/>**



# MIDDLESEX COUNTY MOSQUITO EXTERMINATION COMMISSION

200 Parsonage Road • Edison, NJ 08837-2118



Tel: (732) 549-0665

Fax: (732) 603-0280

*Supporter of the US EPA PESP Document*



Superintendent  
Deepak Matadha, PhD

---

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

## **"DeltaGard"**

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

### **What is DeltaGard and how is it used?**

DeltaGard contains a pesticide called deltamethrin, a member of the category of pesticides called Type II 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. Deltamethrin is a Type II pyrethroid, and therefore does not require a synergist such as piperonyl butoxide. The U.S. Environmental Protection Agency (EPA) has classified deltamethrin 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 DeltaGard™ adulticide, deltamethrin is considered a non-carcinogen, non-teratogen and non-mutagen.

This Type II 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 commonly used, the spraying of adult mosquitoes is necessary when biting populations reach critical levels or when a disease-causing agent is present in adult mosquitoes. A very fine mist is sprayed into the air since flying mosquitoes must directly contact the pesticide for effective control.

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

Because of the very small amounts of active ingredients released per acre, the risk to the general public from the use of Type II 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 deltamethrin?

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 deltamethrin last in the environment?

The Type II pyrethroid deltamethrin has a half-life of 1-2 weeks in soil and is rapidly adsorbed by sediment in surface water. It is insoluble in water and is immobile in the environment. Deltamethrin is nontoxic to plants and residues are not present after 10 days.

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

The following are resources for more information regarding deltamethrin 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:

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

For New Jersey pesticide regulation & misuse complaints – 24 hours:

**NJDEP Pesticide Control Program** **877-927-6337**

For Federal pesticide regulation:

**USEPA Region 2 Office of Pesticide Programs** **877-251-4575**

For statewide mosquito control information:

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

For local mosquito control information:

**Middlesex County Mosquito Commission** **732-549-0665**

For mosquito control recommendations:

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

Spraying for adult mosquitoes is a last resort. Most mosquito control work goes on "behind the scenes", using water management, fish, and other 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 deltamethrin or any other mosquito control related products or practices, please feel free to call the Middlesex County Mosquito Commission at (732) 549-0665 (Mon-Fri; 7:00 AM – 3:30 PM), or visit our web site at <http://middlesexmosquito.org>.



# MIDDLESEX COUNTY MOSQUITO EXTERMINATION COMMISSION

200 Parsonage Road • Edison, NJ 08837-2118



Tel: (732) 549-0665  
Fax: (732) 603-0280

*Supporter of the US EPA PESP Document*



Superintendent  
Deepak Matadha, PhD

---

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

## ***"Duet Dual-Action"® Adulicide***

This **fact sheet** answers some basic questions about mosquito control products in use in your county. Middlesex County Mosquito Commission, along with several other resources (listed at the end of this sheet), can provide more detailed information.

### **What is *Duet Dual-Action*® adulicide and how is it used?**

*Duet Dual-Action*® contains two pesticides called ***Prallethrin*** and ***Sumithrin***, and a synergistic compound called ***piperonyl butoxide*** which increases the effectiveness of the pesticides. 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*® adulicide more effective against hard-to-control species like *Aedes albopictus*, which typically rest during the evening hours when aduliciding usually takes place.

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

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 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, 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 (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 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 Dual-Action*® 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 – 24 hours:

**NJDEP Pesticide Control Program** **877-927-6337**

For pesticide regulation:

**USEPA Region 2 Office of Pesticide Programs** **877-251-4575**

For pesticide health information:

**Middlesex County Public Health Department** **732-745-3100**

For mosquito control insecticide recommendations:

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

Where can I get more information about local mosquito control?

**Middlesex County Mosquito Commission** **732-549-0665**

(Mon-Fri; 7:00 AM – 3:30 PM)

<http://middlesexmosquito.org>

For state-wide mosquito control information:

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





# Mosquito Prevention and Protection



**Always remember the 3 D's of protection from mosquitoes**



## Drain

Many mosquito problems in your neighborhood are likely to come from water-filled containers that you, the resident, can help to eliminate. All mosquitoes require water in which to breed. Be sure to drain any standing water around your house.

- Dispose of any tires. Tires can breed thousands of mosquitoes.
- Drill holes in the bottom of recycling containers.
- Clear roof gutters of debris.
- Clean pet water dishes regularly.
- Check and empty children's toys.
- Repair leaky outdoor faucets.
- Change the water in bird baths at least once a week.
- Canoes and other boats should be turned over.
- Avoid water collecting on pool covers.
- Empty water collected in tarps around the yard or on woodpiles.
- Plug tree holes.
- Even the smallest of containers that can collect water can breed hundreds to thousands of mosquitoes. They don't need much water to lay their eggs. (bottles, barrels, buckets, overturned garbage can lids, etc.)



## Dress

Wear light colored, loose fitting clothing. Studies have shown that some of the 174 mosquito species in the United States are more attracted to dark clothing and most can readily bite through tight-fitting clothing of loose weave. When practical, wear long sleeves and pants.



## Defend

Choose a mosquito repellent that has been registered by the Environmental Protection Agency. Registered products have been reviewed, approved, and pose minimal risk for human safety when used according to label directions. Three repellents that are approved and recommended are:

- DEET (N,N-diethyl-m-toluamide)
- Picaridin (KBR 3023)
- Oil of lemon eucalyptus (p-methane 3,8-diol, or PMD)

### Here are some rules to follow when using repellents:

- Read the directions on the label carefully before applying.
- Apply repellent sparingly, only to exposed skin (not on clothing).
- Keep repellents away from eyes, nostrils and lips: do not inhale or ingest repellents or get them into the eyes.
- The American Academy of Pediatrics (AAP) suggests that DEET-based repellents can be used on children as young as two months of age. Generally, the AAP recommends concentrations of 10% or less, unless disease risk is imminent, then concentration can be increased to 30% or less.
- Avoid applying repellents to portions of children's hands that are likely to have contact with eyes or mouth.
- Pregnant and nursing women should minimize use of repellents.
- Never use repellents on wounds or irritated skin.
- Use repellent sparingly and reapply as needed. Saturation does not increase efficacy.
- Wash repellent-treated skin after coming indoors.
- If a suspected reaction to insect repellents occurs, wash treated skin, and call a physician. Take the repellent container to the physician.



**AMCA**  
THE AMERICAN MOSQUITO CONTROL ASSOCIATION

**mosquito.org**

**@AMCAupdates**

**facebook.com/AmericanMosquitoControl**





# Mosquito Habitat Elimination Checklist

Use this checklist to find and get rid of all the standing water around your home where immature mosquitoes may live.

Immature mosquitoes live and grow in standing water.

It takes them about **7 days** to grow and become adult mosquitoes that are ready to fly and bite.

## COMMON HOUSEHOLD ITEMS

- ☐ **Buckets:** Empty water from buckets and turn them over.
- ☐ **Garbage cans and recycling bins:** Drill drainage holes in the bottoms of garbage cans and bins, keep covered and dispose of recycling weekly if possible.
- ☐ **Tarps, plastic bags and sheets:** Keep tarps tight and refit them if water collects.

## BUILDING STRUCTURES

- ☐ **Gutters:** Keep gutters clean and properly pitched.
- ☐ **Flexible downspout extensions:** Pitch downspout extensions so water drains completely after it rains or replace them with a metal, non-flexible extension that is pitched to drain fully. Keep the inside free of debris.
- ☐ **Leaky hose spigots:** Fix leak or have it fixed by a professional plumber.

## AROUND THE GARDEN

- ☐ **Planter saucers:** Dump the water out every 5-7 days or don't use a saucer at all.
- ☐ **Planters without drainage holes:** Drill holes in the bottom of your planter – it's healthier for your plants.
- ☐ **Self-watering planters:** Tightly seal the watering hole after adding water or use traditional planters with drainage holes.
- ☐ **Wheelbarrows:** Turn wheelbarrows over or store them on end.
- ☐ **Watering Cans:** Empty and store upside down or in a garage or shed.
- ☐ **Rain Barrels:** Cover tops of rain barrels and any overflow holes with tightly fitted screen.
- ☐ **Bird Baths:** Change water at least once a week and brush the inside of the bowl to remove any mosquito eggs.
- ☐ **Ornamental ponds:** Get fish. If that is not an option, you can get a pond fountain to stop the water from being stagnant.

## CHILDREN'S TOYS

- ☐ **Portable basketball hoops:** Make sure caps for fill holes are in place; replace if lost.
- ☐ **Kiddie pools:** Empty or change water in kiddie pools every 5 - 7 days. Be sure to store indoors or turned over when empty.
- ☐ **Sand boxes:** Drill small drainage holes in the bottom of your sand box.
- ☐ **Big plastic toys, wagons, etc.:** Keep toys turned over or inside when not in use. If water can get inside the toy, so can a mosquito - drill drainage holes in the bottom.

## RECREATION

- ☐ **Boats:** Empty all the water possible. Cover boats in storage with tight tarps or use boat shrink wrap.
- ☐ **Jet skis:** Rinse out the foot depressions with a hose every week. Jet skis can be tightly tarped or stored indoors.
- ☐ **Pools/pool covers:** Keep the top of pool covers free of standing water. If you know of an abandoned home in your neighborhood with an unkempt pool, call the Middlesex County Mosquito Extermination Commission. It may need to be treated or stocked with fish that eat immature mosquitoes.

**Don't forget to check behind sheds, under shrubs, decks & porches where containers may hide.**



Still have a mosquito problem? Contact us.

200 Parsonage Road, Edison NJ 08837  
732-549-0665 • [MiddlesexMosquito.org](http://MiddlesexMosquito.org)

**MIDDLESEX**  
COUNTY • NJ