

# Ocean County Mosquito Extermination Commission

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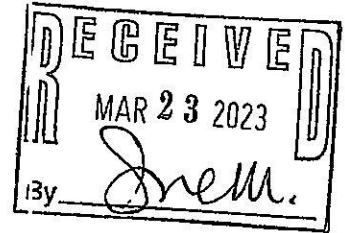


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March 17, 2023

To: Mayors and Clerks of all Townships and Municipalities in the County of Ocean

As you are aware, the Ocean County Mosquito Commission performs mosquito control applications throughout Ocean County in response to mosquito breeding and possibly adult mosquito populations from May 15<sup>th</sup> through November 30<sup>th</sup> of each season. Pesticide Regulations (N.J.A.C. 7:30-9.10e) requires us to supply a packet of information, including **N.J.D.E.P. approved fact sheets** for each adulticide we **might** use, and a Question-and-Answer sheet explaining the aspects of our program to all municipalities. **Municipalities are encouraged to share this information with all residents in their community.**

Keep in mind that our primary mission is to accomplish larval mosquito control by performing water management, fish stocking, and applying larvicides to stagnant water breeding sites. The use of an adult mosquito insecticide would be necessitated **only** by extremely high populations or upon evidence of mosquito borne disease in your municipality. This may or, most likely, may not occur in your municipality, however this packet contains information on those products and the methods that would be available to use should the need arise later in the season.

If you have any further questions on mosquito control in your municipality, please feel free to contact this office or go onto our website at [www.oceancountymosquito.org](http://www.oceancountymosquito.org).

Sincerely,

*Michael G. Senyk*

Michael Senyk  
Superintendent  
Cert.# 26494B

# OCEAN COUNTY MOSQUITO EXTERMINATION COMMISSION

## QUESTIONS & ANSWERS

### Q: What is the life cycle of a mosquito?

A: Despite all the different mosquito species and various mosquito habitats in Ocean County, they all have at least one thing in common; all mosquitoes require water to complete their life cycle.

Mosquitoes have 4 different developmental stages: egg, larva, pupa, and adult. Depending on the species, female mosquitoes will lay their eggs either on the water's surface, edges of emergent vegetation or damp soil depressions that will become inundated by rain and or tide.

The eggs hatch into the aquatic life stage known as larvae. Larvae grow by feeding on organic matter in the water and go through 4 growth stages called instars. After the 4th instar, the larvae molt into pupae, beginning to prepare for adulthood.

The pupa is still an aquatic stage and is where the mosquito undergoes metamorphosis in order to become the flying adult.

Shortly after emerging, the female mosquitoes fly off to seek a bloodmeal. The mosquito does not gain nutrition from blood feeding. Instead, the proteins from the blood are used to help her eggs to develop. Once egg laying is completed, she will host seek for another bloodmeal to lay further batches of eggs.

### Q: What mosquitoes do we have in Ocean County?

A: In Ocean County, we have identified over 40 different mosquito species that are found in a wide variety of habitats. These include roadside ditches, flooded woodlands, freshwater swamps, storm water basins, artificial containers, and coastal salt marshes.

Salt marsh breeding species constitute the majority of pest problems throughout the county. The heaviest populations of these mosquitoes occur in Southern Ocean County. These mosquitoes can travel over 20 miles for a bloodmeal and can be found to the western borders of the county.

The Asian Tiger Mosquito (*Aedes albopictus*) is an invasive species that has made adapted well to Ocean County. These aggressive biters lay eggs in artificial containers found outside of the home. All they need is enough water to fill a bottle cap to lay eggs! Common breeding spots for the Asian Tiger Mosquito include flowerpots, buckets, uncovered garbage cans and lids, folds in tarps, and old tires.

### Q: What human and animal diseases do mosquitoes transmit?

A: It is through this blood "feeding" behavior that a mosquito can act as a vector, or transmitter, of diseases between humans and animals. Depending on the species, mosquitoes can transmit diseases like malaria, yellow fever, dog heartworm, encephalitis (such as Eastern Equine Encephalitis and West Nile Virus), chikungunya, and Zika virus.

West Nile Virus (WNV) was first recognized in the New York/Metropolitan area in 1999. Fortunately, WNV activity in Ocean County has been minimal. We still monitor WNV from May through November in our local mosquito population to protect the human and horse population.

Historically, Eastern Equine Encephalitis (EEE) has been the major human health concern in Ocean County. In previous years, EEE outbreaks have caused sickness and even fatalities and can account for the development of mosquito control in Ocean County.

Animals can also be the targets of mosquito diseases. Dog Heartworm is an ever-present threat to your pet's life and is costly to treat once it has been contracted. Horses can contract EEE and it is important to have them vaccinated against this disease. Horses are susceptible to WNV and a vaccine has been approved. Contact your veterinarian for more information. WNV has been responsible for deaths in several species of birds, particularly in wild populations.

### Q: What does the Mosquito Commission do?

A: By state mandate, the Ocean County Mosquito Extermination Commission was established in 1913. Since that time, our goal has been to control mosquitoes, to eliminate disease, and enhance the quality of life to the people of Ocean County.

The Commission's mosquito control program is a comprehensive, integrated pest management program that utilizes a balance of various control techniques and a detailed surveillance program to monitor the effectiveness of those techniques. Our control techniques focus on the aquatic larval stage of the mosquito. This aquatic stage of the life cycle is more concentrated and accessible than that of the adult stage.

The larval control program utilizes pesticides to eliminate breeding by directly treating the larval mosquito habitat by use of ground trucks or helicopters. A routine system has been developed and breeding sites are continually inspected throughout the breeding season (April-October).

Our water management program utilizes a technique called Open Marsh Water Management to eliminate mosquito breeding in the salt marshes (i.e. grassy tidal lands surrounding Barnegat Bay) of Ocean County. This technique controls mosquitoes by increasing tidal flow or providing access to predacious fish or other natural predators. It also eliminates the use of pesticides on these managed areas.

The Commission stocks Mosquito Fish (*Gambusia affinis*), Fathead Minnows (*Pimephales promelas*) and other mosquito predacious fish species in applicable breeding areas to reduce the use of pesticides. These fish are made available by the N.J. Division of Fish & Wildlife as part of the State mosquito Control Commission's bio-control program.

The Commission also runs a comprehensive adult mosquito surveillance program, which helps us keep at least of adult mosquito populations throughout Ocean County.

The system utilizes a countywide network of Light Traps and Landing Rate Counts to determine the size and species make-up of our mosquito population. Mosquito collections are also conducted for virus testing using gravid traps, CDC traps, BGS traps, and resting boxes.

**Q: What pesticides are used to control mosquitoes in Ocean County?**

**A:** The pesticides most often used are ones that will control mosquito larvae in their aquatic breeding habitat. These products are applied directly into stagnant, mosquito breeding water. Rarely, it may be necessary to control adult mosquitoes.

All products used are recommended for use by the New Jersey Agricultural Experiment Station/Cook College and are registered with both USEPA and NJDEP, thus legal for use in New Jersey. Both liquid and granular formulations are used in applicable situations, and they can be delivered by hand, by ground truck, or aerially by helicopter or plane.

For larval mosquito control by ground, we use liquid Bti, under the brand names Vectobac, Aquabac, and Technar. By air, our primary larvicide is Bti, brand name Vecobac. However, on occasion we utilize the granular products of Bti and Methoprene with brand names VectoPrime and MetaLarv. Also, there are occasions where very small applications of hand-applied products are made to small breeding sites. At that time, we would use Larvicide oil, brand name BVA Oil, or Bti Briquettes, brand name Mosquito Dunks.

On rare occasions, adult mosquito control may be necessary. With a ground ULV sprayer, we would use Etofenprox (with a brand name of Zenivex). If an aerial application had to be made, it would be with Malathion (with a brand name of Fyfanon), Sumithrin/Prallethrin (with a brand name of Duet) or Etofenprox (with a brand name of Zenivex).

For more information on the pesticides used for larval and adult mosquito control, and how to limit your exposure, please refer to the N.J. Department of Environmental Protection approved pesticide fact sheets. All pesticides applications are made by state licensed pesticide applicators/operators.

**Q: What can the homeowner do?**

**A:** Mosquito control begins at home. If you can eliminate any standing water around your home, mosquitoes will have no local place to breed. Anything that can hold water has the potential to become a mosquito-breeding site.

Keeping adult mosquitoes out of your house is an additional step. Make sure all windows and door screens are free of holes and close securely.

A wide variety of repellents exist for relief from adult mosquitoes or other biting insects. Many of these are available anywhere from department stores to garden centers. Repellents are generally effective but should be used with caution in accordance with label directions. Please - read the label.

**Q: What do I do if there is a possible breeding site or an adult mosquito problem around my home?**

**A:** Contact the Mosquito Commission at (609) 698-8271. Our staff will investigate your situation promptly. If an on-site inspection is deemed necessary, a service request form will be filled out and handled as soon as possible.

**Q: Where do I get more information?**

**A:** Attached is an example of a newspaper notice that the Commission places in two local newspapers every three weeks throughout the mosquito season.

Visit our Website - [www.oceancountymosquito.org](http://www.oceancountymosquito.org). There you will find more information on our program and numerous links to more information about mosquitoes. You will also find updates on any adult mosquito control, which may be necessary. You can also call the Commission for any specific information at: (609) 698-8271 Monday through Friday between 7:00 AM to 3:30 P.M.



National Pesticide Information Center - 1 (800) 858-7378  
New Jersey Poison Information and Education System - 1 (800) 222-1222  
Bureau of Pesticide Compliance and Enforcement\* - 1 (609) 984-6568

\*This number for pesticide regulation information, pesticide complaints and Health referrals.

Ocean County Mosquito Extermination Commission  
Fact Sheet

***“Duet Dual-Action® Adulticide” ®***

**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* 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®* 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 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 commonsense 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: <b>National Pesticide Information Center</b>	<b>300-858-7378</b>
For pesticide health information & possible exposures – 24 hours: <b>New Jersey Poison Information &amp; Education System</b>	<b>800-222-1222</b>
For New Jersey pesticide regulation & misuse complaints: <b>NJDEP Bureau of Pesticide Compliance and Enforcement</b>	<b>609-984-6568</b>
For Federal pesticide regulations: <b>USEPA Region 2 Office of Pesticide Programs</b>	<b>877-251-4575</b>
For state-wide mosquito control information: <b>NJDEP Office of Mosquito Control Coordination</b>	<b>609-292-3649</b>
For local mosquito control information: <b>The Ocean County Mosquito Extermination Commission</b>	<b>609-698-8271</b>
For mosquito control recommendations: <b>Rutgers University, Department of Entomology</b>	<b>848-932-9774</b>



# Ocean County Mosquito Extermination Commission Fact Sheet

## “Fyfanon” Adulticide

This sheet answers some basic questions about mosquito control products that may be used in your county. The Ocean County Mosquito Commission, along with several other resources (listed at the end of this sheet), can provide more detailed information.

### What are these insecticides and how are they used?

They are an insecticide product that is recommended for mosquito control in New Jersey by Rutgers, The State University of New Jersey. They contain the pesticide 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.

**Malathion** is used for the control of adult mosquitoes. While habitat management and measures to control immature mosquitoes in water are the preferred routine approaches, 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.

### How can I avoid exposure to these products?

Risk to the general public from the use of **Malathion** 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 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 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 these products?**

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 these products last in the environment?**

The 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 these products?**

The following are resources for more information regarding these products 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 and possible exposures – 24 hours:

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

For New Jersey pesticide regulation & misuse complaints:

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

For Federal pesticide regulation:

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

For state-wide mosquito control information:

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

For local mosquito control information:

**The Ocean County Mosquito Commission** 609-698-8271

For mosquito control recommendations:

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

# Ocean County Mosquito Extermination Commission Fact Sheet

## ***“Zenivex™”* Adulticide**

This sheet answers some basic questions about mosquito control products that may be used in your county. The Ocean County Mosquito Commission, along with several other resources (listed at the end of this sheet), can provide more detailed information.

### **What is *Zenivex™* adulticide 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 a 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 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.

### **How can I reduce my exposure to *Zenivex™*?**

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 the following 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 *Zenivex™*?**

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 *Zenivex™* last in the environment?**



The non-ester pyrethroid in *Zenivex™* has a half-life of 1.7 days in water and 4.4 days in soil. The *Zenivex™* 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 *Zenivex™*?**

The following are resources for more information regarding *Zenivex™* 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 and possible exposures – 24 hours:

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

For New Jersey pesticide regulation & misuse complaints:

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

For Federal pesticide regulation:

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

For state-wide mosquito control information:

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

For local mosquito control information:

**The Ocean County Mosquito Commission** 609-698-8271

For mosquito control recommendations:

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

## PUBLIC NOTICE

In compliance with Section 9.10 & 9.15 of the New Jersey Pesticide Control Code (N.J.A.C. Title 7 Chapter 30), The Ocean County Mosquito Extermination Commission, P.O. Box 327, Barnegat, NJ 08005, may be applying insecticides for the control of adult mosquito populations on an area-wide basis, as needed, throughout Ocean County during the period from May 15 through November 30.

The pesticides used will be those recommended by the New Jersey Agricultural Experiment Station for the control of adult mosquitoes which include: Malathion (Fyfanon ULV), Prallethrin/Sumithrin/Piperonyl butoxide (Duet HD, AquaDuet) or Etofenprox (Zenivex, Aqua Zenivex). Products will be applied from the ground by truck or by aircraft, all using Ultra Low Volume techniques.

Contact the National Pesticide Information Center @ 1-800-858-7378 for routine pesticide related health inquiries. Call the New Jersey Department of Environmental Protection's Bureau of Pesticide Compliance and Enforcement @ 1-609-984-6568 for pesticide regulation information, pesticide complaints and health referrals. In the case of any pesticide emergency, please contact the New Jersey Poison Information and Education System @ 1-800-222-1222.

Upon request, The OCMEC 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.

Visit our Website @ [www.oceancountymosquito.org](http://www.oceancountymosquito.org) for updated information on mosquito operations and for further information regarding OCMEC activities. Call OCMEC @ 1-609-698-8271.

Michael Senyk  
# 26495B