

COUNTY OF MONMOUTH

Mosquito Control Division

1901 Wayside Road, Tinton Falls, NJ 07724

Board of Chosen Freeholders

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March 1, 2016



732-542-3630

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TO: Municipal Administrator
FROM: Monmouth County Mosquito Control Division

The Monmouth County Mosquito Control Division is distributing this packet of materials in compliance with Sections 9.10 of the New Jersey Pesticide Control Regulations (N.J.A.C. Title 7, Chapter 30) Notification: community or area wide applications. The purpose of this packet is to provide municipal officials with pertinent information regarding our treatment operations to control adult mosquitoes, also known as adulticiding.

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

In our adulticiding operations, all pesticides used are registered by the USEPA and NJDEP and recommended for use by the New Jersey Agricultural Experiment Station for the control of adult mosquitoes.

Upon request the Monmouth County Mosquito Control Division shall provide a resident with notification at least 12 hours prior to the application, except for Quarantine and Vector Control only (i.e. to prevent or reduce incidence of mosquito-borne disease, such as West Nile Virus), when conditions necessitate pesticide applications sooner than that time. Should a resident request notification please direct them to contact our offices at 732-542-3630 to be placed on our "Adulticide Notification List."

For the most up to date information can be found on our website www.visitmonmouth.com/mosquito on the "Mosquito Control Schedule and Maps" page. Residents can also call our Mosquito Control Hotline at 732-578-1600. This phone number is for updated information on time and location of application.

Mosquito control adulticide application may be made at any point from May 1st through November 30th as is necessitated by the presence of extreme nuisance and/ or mosquito-borne disease. Applications may be made by ground or air using truck or helicopter mounted aerosol application equipment. One of the following products will be used for adulticiding applications:

<u>Trade Name</u>	<u>Active ingredient</u>	<u>EPA Registration #</u>	<u>Signal Word</u>
Duet® Dual Action Adulticide	Prallethrin 1%, Sumithrin 5%, Piperonyl Butoxide 5%	1021-1795-8329	Caution
Atrapa™ ULV	Malathion 95%	1812-407	Caution
Scourge® 4-12	Resmethrin 4.14%, Piperonyl Butoxide 12.42 %	432-716	Caution
Zenivex® E4 RTU	Etofenprox 4%	2724-807	Caution
Zenivex® E20	Etofenprox 20%	2724-791	Caution

Enclosed you will also find a NJ DEP approved fact sheet for each of the above mentioned pesticides. In addition you find a Questions & Answers sheet about pesticides, pesticide exposure, mosquito mitigation for the homeowner, and related topics. We can also provide a variety of brochures and educational materials upon request. Municipalities are encouraged to share this information with all the residents in their community.

If you have any questions please call our office at 732-542-3630.



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

“Duet Dual-Action[®] Adulticide”

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

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

Duet Dual-Action[®] contains two pesticides called ***Prallethrin*** and ***Sumithrin***, and a synergistic compound called ***piperonyl butoxide*** 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 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:

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

For pesticide regulation & misuse complaints:

NJDEP Pesticide Control Program **609-984-6507**

For 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 mosquito control recommendations:

Rutgers University, Department of Entomology **732-932-9774**

For local mosquito control information:

Monmouth County Mosquito Control Division **732-542-3630**

For health related pesticide information:

The Monmouth County Health Department **732-431-7456**



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

“Zenivex[®] Adulticide”

This **Fact Sheet** answers some basic questions about mosquito control products in use in your county. The Monmouth County Mosquito Control Division, 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 pesticide. 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 *Zenivex[®]*?

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 *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. *Zenivex*[®] rapidly degrades in sunlight at the soil and water surface into its constituent elements: Carbon, Hydrogen, and Oxygen.



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“Scourge[®]”

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

What is Scourge[®] and how is it used?

Scourge[®] is an insecticide product that is recommended for mosquito control in New Jersey by Rutgers, The State University of New Jersey. Scourge[®] contains the pesticides called **“Resmethrin and Piperonyl Butoxide (PBO).”** The U.S. Environmental Protection Agency’s (EPA) current evaluation considers Pyrethroid/piperonyl butoxide containing products to be slightly toxic with minimal potential risk to people when used properly as part of an integrated mosquito control program.

Scourge[®] is used for the control of adult mosquitoes. While habitat management and measures to control immature mosquitoes in water are preferred, 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. As reported on EPA pesticide fact sheets, ULV applications involve small quantities of active ingredient in relation to the size of the treated area which minimizes exposure and risks to people and the environment.

How can I reduce my exposure to Scourge[®]?

While risk to the general public from the use of **Scourge[®]** may be minimal, avoiding exposure is always the safest course of action. Any possible exposure risk can be reduced by following some common sense actions:



**Monmouth County Mosquito Control Division
Pesticide Fact Sheet**

- 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.
- Keep children's toys indoors.
- Keep your pets, their food, water dishes, and toys indoors.
- 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 Scourge®?

Irritation or sensitization sometimes occurs after exposure, causing an asthmatic condition or skin rash. 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 Scourge® last in the environment?

Pyrethroid spray stays in the air for a short time until it lands on surfaces. Pyrethroids have a low persistence and break down in water and soil within 1 to 25 days. Pyrethroids break down faster in sunlight. The EPA cites that pyrethroids do not pose unreasonable risks to wildlife or the environment when used as part of a mosquito control program.



Where can I get more information on Scourge®?

The following are resources for more information regarding **Scourge®** 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 pesticide regulation & misuse complaints:

NJDEP Pesticide Control Program **609-984-6507**

For 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 mosquito control recommendations:

Rutgers University, Department of Entomology **732-932-9774**

For local mosquito control information:

Monmouth County Mosquito Control Division **732-542-3630**

For health related pesticide information:

The Monmouth County Health Department **732-431-7456**



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“*Fyfanon*[®]”

This sheet answers some basic questions about a mosquito control product in use in your county. The Monmouth 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. *Fyfanon*[®] contains the pesticides called “Malathion***.” The U.S. Environmental Protection Agency’s (EPA) current evaluation considers Malathion containing products to be slightly toxic. Malathion when applied according to the label, can be used for public health mosquito control without posing unreasonable risks to the general population.

***Fyfanon*[®]** is used for the control of adult mosquitoes. While habitat management and measures to control immature mosquitoes in water are preferred, 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. As reported on EPA pesticide fact sheets, ULV applications involve small quantities of active ingredient in relation to the size of the treated area which minimizes exposure and risks to people and the environment.

How can I reduce my exposure to *Fyfanon*[®]?

While risk to the general public from the use of ***Fyfanon*[®]** may be 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.
- Keep children's toys indoors.
- Keep your pets, their food, water dishes and toys indoors.
- Stay away from application equipment, whether in use or not.
- Whenever possible, remain indoors with windows closed and with window air conditioners on non-vent (closed to the outside air) and window fans turned off during spraying.
- Avoid direct contact with surfaces that are still wet from pesticide spraying. Do not allow children to play in areas that have been sprayed until they have completely dried (approximately one hour).
- If you must remain outdoors, avoid eye and skin contact with the spray. If you get spray in your eyes or on your skin, immediately flush and rinse with water.

What are the symptoms of exposure to Fyfanon®?

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. EPA has estimated the exposure to both adults and children posed by ULV aerial and ground applications of malathion to be hundreds or even thousands of times below and amount that might pose a health concern. 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 the above 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 lands on surfaces. Malathion has a low persistence and breaks down in water and soil within 1 to 25 days. Malathion breaks down faster in sunlight. The EPA cites that Malathion does not pose unreasonable risks to wildlife or the environment.



MONMOUTH COUNTY MOSQUITO CONTROL DIVISION

QUESTIONS & ANSWERS - ADULT MOSQUITO TREATMENTS

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

Applications of pesticides by the Monmouth County Mosquito Control Division to control adult mosquitoes may be made at any point from May 1st through November 30th as is necessary. Below is a list of common questions and answers related to this type of pesticide application.

How does the Monmouth County Mosquito Control Division (MCMCD) determine the need for applications of pesticides for adult mosquitoes?

The MCMCD treats for adult mosquitoes in response to extreme nuisance levels or the presence of mosquito-borne disease. This decision is based on a number of factors and relies heavily on our surveillance of mosquito populations throughout the county and our monitoring of mosquitoes for the presence of mosquito-borne diseases such as West Nile Virus and Eastern Equine Encephalitis. We are also in constant communication with state and local health officials who notify us when mosquito-borne diseases are found in humans, birds, horses, and other animals.

How does MCMCD apply these pesticides?

Most applications of pesticides for adult mosquitoes, known as "adulticides," are made using ground equipment. Truck-mounted machines aerosolize the pesticide into droplets that are only microns in size. This is the ideal size to contact mosquitoes in flight, minimize droplets from falling to the ground, and allow the pesticides to be applied at only ounces per acre. Thus, these machines are known as Ultra Low Volume (ULV) Sprayers. These machines possess equipment that accurately meters out the pesticides and allows us to uniformly treat an area without over application.

Another type of ground application equipment for adulticides are handheld sprayers. These use the same aerosolizing mechanism as the truck mounted machines, but are small enough to be carried through an area by a technician on foot.

On rare occasions the MCMCD may determine that an area needs to be treated with adulticides by air. Aerial applications of adulticides are generally made to control an outbreak of mosquito-borne disease. Aerial application equipment may also be used when an extreme mosquito nuisance problem is spread over a large area and cannot be effectively treated by ground equipment. Aerial adulticide applications are made using helicopter mounted spray equipment. The helicopter is equipped with spray booms that disperse the adulticide using a series of nozzles to produce the appropriate droplet size.

What if I have more/ specific questions?

More information about our treatments for mosquitoes, including any specific plans for adulticide treatments can be found at www.visitmonmouth.com/mosquito or you can contact our office at 732-542-3630 or email us at mosquitoes@co.monmouth.nj.us. For general pesticide specific questions you can also contact the National Pesticide Information Center at 1-800-858-7378.

What can I do to reduce adult mosquitoes around my home?

Reducing mosquito habitat around your home is both essential and greatly appreciated. A third of mosquito nuisances reported by Monmouth County residents in 2014 were a result of “home grown mosquitoes.” Unfortunately, MCMCD does not have the resources to abate mosquitoes at every home in the County and home grown mosquitoes detract from control efforts in other areas like fresh water swamps and salt marshes.

The most effective strategy for controlling mosquitoes around your home is to not give larval mosquitoes a place to live and grow. Mosquitoes are very resourceful and larvae can live in nearly any water filled container that lays stagnant for 7 days or more. These mosquitoes prefer not to fly very far and stick close to your home feeding off your family, pets, and neighbors.

Eliminate standing water by:

- Disposing of items that you don't need and may collect water. Those containers that you need, like buckets or watering cans, should be turned over so as not to collect water.
- Drilling drainage holes in the bottom of garbage bins.
- Keeping roof gutters clean of debris and properly pitching downspout extensions so they don't hold water.

Don't forget: check for containers under your porch or deck, under bushes, and behind sheds.

If you need advice or assistance call us at 732-542-3630 or email us at mosquitoes@co.monmouth.nj.us.

How can I tell if I am being physically affected by the pesticides?

The chance of experiencing symptoms of exposure with proper use is low. The USEPA has estimated the exposure to both adults and children posed by ULV aerial and ground applications of adulticides to be hundreds or even thousands of times below an amount that might pose a health concern. Symptoms of acute over exposure will vary according to the pesticide used and can include skin rash, difficulty breathing, eye and nasal irritation, abnormal sensations of the skin (tingling or prickling), irritation headache, nausea, dizziness, fatigue, excessive sweating, salivation, excessive tearing, and a runny nose.

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 the above symptoms following exposure to pesticide spraying.

What do I do to avoid exposure to pesticides while MCMCD is conducting treatments?

The United States Environmental Protection Agency does not require relocating or taking special precautions during mosquito control spraying. However, the Division realizes that some people may prefer to avoid or minimize exposure by practicing common sense precautions. These precautions include: staying indoors during and immediately after treatments, keeping windows shut, and turning window air conditioners and window fans off during spraying.

What if I have questions or concerns about pesticide regulations or misuse of pesticides?

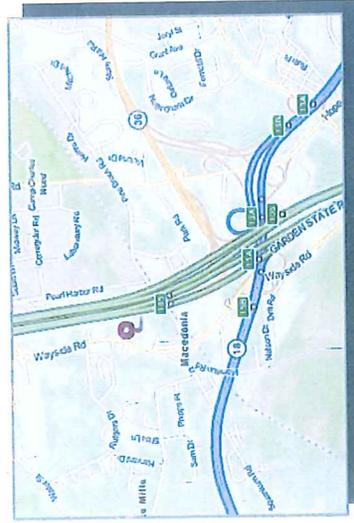
If you believe that pesticides are being misused in any way or have questions about pesticides regulations please call the New Jersey Department of Environmental Protection, Pesticide Control Program at 609-984-6507.

DIRECTIONS TO MCMCD

From the South: Take the Garden State Parkway North to Exit 105. Immediately upon exiting, take the ramp for Route 18 (New Brunswick). Once on 18 take Exit 15A (Wayside Road North). Continue straight ahead on Wayside Road over the railroad tracks and past the first traffic light (Pine Brook Road). The Division building (#1901) is located 1500 feet past the traffic light on the right hand side.

From the North: Take the Garden State Parkway South to Exit 105. After passing through the toll booth, take the jug handle immediately after the first traffic light (Hope Road). You will now be heading North on Hope Road. Cross the Parkway spur and proceed to the first traffic light (Pine Brook Road). Turn left on Pine Brook Road. Proceed over the railroad tracks and under the Parkway to the first traffic light (Wayside Road). Turn right on to Wayside Road. The Monmouth County Mosquito Control building (#1901) is on the right hand side.

From Route 18: Take Route 18 (North or South) to Exit 15A (Wayside Road North). Proceed North on Wayside Road, over the railroad tracks, and past the first traffic light (Pine Brook Road). The Division building (#1901) is located 1500 feet past the traffic light on the right hand side.



Tick-borne Diseases Program

Monmouth County Mosquito Control Division
1901 Wayside Road, Tinton Falls NJ 07724

GENERAL INFORMATION

In 1997, the Monmouth County Mosquito Control Division (MCMCD) became the first Mosquito Control in New Jersey to provide education, training, surveillance and recommendations on integrated pest management (IPM) for reducing the risk of Lyme disease and other tick-borne diseases. The Tick-borne Diseases Program of the MCMCD is devoted to education, research and services relating to ticks and tick-borne diseases in New Jersey.

To combat the threat of tick-borne diseases to the residents of Monmouth County, the Tick-borne Diseases Program of the Monmouth County Mosquito Control Division provides the service of Tick Identification and Testing as part of an on-going research program. The Tick Identification and Testing Service serves as a **'first alert'** for people receiving a tick-bite.

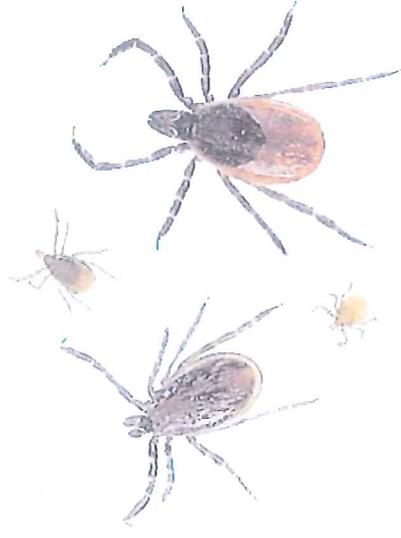
For additional information on ticks and tick-borne diseases contact:

MCMCD Tick-borne Diseases Program
Email: ticks@co.monmouth.nj.us

(Tel) 732-542-3630 • (Fax) 732-542-3267

Or online at:
www.visitmonmouth.com/mosquito/tick.html

TICK IDENTIFICATION and TESTING



A Service of the

Monmouth County
Mosquito Control Division

Tick-borne Diseases Program

Tinton Falls, New Jersey



TICK SERVICES OFFERED

Tick Identification

Individual citizens can submit ticks for identification to species, stage of development, and relative degree of engorgement. Knowing this information is helpful for the following reasons:



- 1. Tick species:** Different tick species are known to transmit different disease causing organisms, therefore knowing the species involved in the tick bite incident may alert you or your healthcare provider to watch for specific disease(s) and may aid in differential diagnosis if clinical symptoms should appear.
- 2. Tick development stage:** You cannot determine the species of tick by its size because all ticks are extremely tiny in their immature stages (larva and nymph) get progressively larger as they mature through their life cycle (adult males and females) and larger still as they become engorged with blood. In addition, different stages of ticks may be more or less likely to be infected with a disease-causing organism (larva vs. nymph) or more or less likely to transmit a disease causing organism (males vs. females).
- 3. Tick engorgement level:** If a tick is infected it may transmit that infection when it bites an individual. However transmission does not happen immediately. In the case of Lyme disease at least 24 hours is usually required before the tick will effectively transmit the pathogen. The engorgement level (flat, partially engorged, fully engorged) is a relative indication of how long the tick was attached. The longer a tick is attached, the more engorged (filled with blood) it becomes.



The longer an infected tick is attached, the greater the risk that transmission will take place. So, risk may increase with engorgement level.

All three of the most common ticks found in New Jersey are capable of transmitting diseases to humans and pets.

Tick Testing

Ticks that are identified as *Ixodes scapularis*, the blacklegged tick (a.k.a. deer tick), can be tested for infection with *Borrelia burgdorferi*, the causative agent of Lyme disease, using a DNA based technique known as Polymerase Chain Reaction (PCR). The tick can be tested whether it is alive or dead. There is a \$25.00 fee to cover the cost of the test.

Tick infection status: If a tick is positive for infection with the Lyme disease organism, the potential risk for infection of that individual to have taken place is increased, but not confirmed.

Important Facts to Keep in Mind

Tick identification and test results do not represent the diagnosis of disease in humans or animals; they do provide information that may help you and your health care provider in making diagnostic/treatment decisions. The identification and analysis of a submitted tick does not rule out the possibility that you may have had other undetected tick bites. Actual clinical symptoms should never be discounted based on the tick identification and test results. The official written report of the tick identification and testing results is an important document and you may want to save it to include in your medical file for future reference. Currently only black-legged ticks (a.k.a. deer ticks) are tested and only for the organism that causes Lyme disease. The blacklegged tick is also able to transmit other diseases such as babesiosis (*Babesia microti*) and anaplasmosis (*Anaplasma phagocytophilum*), formerly known as human granulocytic ehrlichiosis.

SUBMITTING A TICK

The Tick Identification and Testing Service is currently only available to the residents of Monmouth County. At this time all ticks must be submitted in person at the Monmouth County Mosquito Control Division located in Tinton Falls (directions to the Commission are located on the back of this brochure). The identification of the tick is free but there is a \$25.00 fee to cover the cost of testing the tick for the Lyme disease causing organism. We can only accept personal checks at this time, NO cash or credit cards. Payment is expected at the time the tick is submitted.

Results of the Tick Identification and Testing will be conveyed by the telephone (a written report will be mailed or e-mailed for your records). Ticks can be submitted at the Mosquito Division between the hours of 7:30 AM and 4:00 PM.

PERSONAL PROTECTION

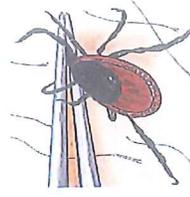
To prevent tick bites and the transmission of tick-borne diseases, follow a few common sense measures, including:

- Learn to recognize and avoid tick infested areas.
- Wear light colored clothing so that ticks can be spotted easily.
- Wear long pants and tuck pant legs into socks or boots; wear a long-sleeved shirt tucked it into your pants. Tape the area where pants and socks meet so that ticks cannot crawl under clothing.
- Use insect repellents that contain 20-30% DEET or treat clothes (especially pants, socks, and shoes) with permethrin, which kills ticks on contact. Always follow the manufacturer's usage recommendations.
- Walk in the center of trails to avoid overhanging grass and brush along the trails edge.
- Inspect yourself carefully and remove any attached ticks. It takes a minimum of 24 hours of attachment before an infected tick can transmit the Lyme disease spirochete. Therefore, the quicker you remove ticks, the less likely they can transmit any disease causing organism.

TICK REMOVAL

The best way to remove attached ticks is to grasp the tick with fine-tipped tweezers as close to the skin as possible; then pull straight up with a slow, steady force. Try to avoid crushing the tick or destroying it in any other way. Clean the area of tick attachment with an antiseptic.

Removed ticks can be saved in any sealed container to be later identified or tested. Attached ticks should not be removed with noxious chemicals or by burning. This may cause injury to the skin, and can increase the risk of transmission, by causing the tick to regurgitate disease causing organisms into the body. Do not place ticks in tape. This makes identification and testing more difficult.



COUNTY OF MONMOUTH
Mosquito Control Division

1901 Wayside Road, Tinton Falls, NJ 07724

Board of Chosen Freeholders
Director
Thomas A. Arnone
Deputy Director & Liaison
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Lillian G. Burry
John P. Curley
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732-542-3630
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March 1, 2016

TO: Municipal Administrator

FROM: MCMCD Tick-borne Diseases Program

The Monmouth County Mosquito Control Division (MCMCD) currently provides a **Tick Identification and Testing** service for the residents of Monmouth County. The Tick Identification and Testing service provides a **'first alert'** against disease for people receiving a tick-bite. In the attached brochure you will find information regarding this service. Ticks must be submitted in person at the MCMCD facility located in Tinton Falls. Ticks can be tested for the causative agent of Lyme disease using DNA-based polymerase chain reaction (PCR) techniques. Tick identification is free of charge, but there is a \$25.00 fee to cover the cost of PCR testing.

Additional information on the Tick Identification and Testing service can be found on our website at www.visitmonmouth.com/mosquito. If you would like **additional brochures to distribute regarding ticks and Lyme disease** please contact us by phone or email at ticks@co.monmouth.nj.us and we would be happy to provide them.

