City of Beverly

BOARD OF HEALTH
90 COLON STREET
BEVERLY, MASSACHUSETTS 01915

Public Health
Prevent. Promote. Protect.

William T. Burke III, R.S., C.H.O.
Director of Public Health

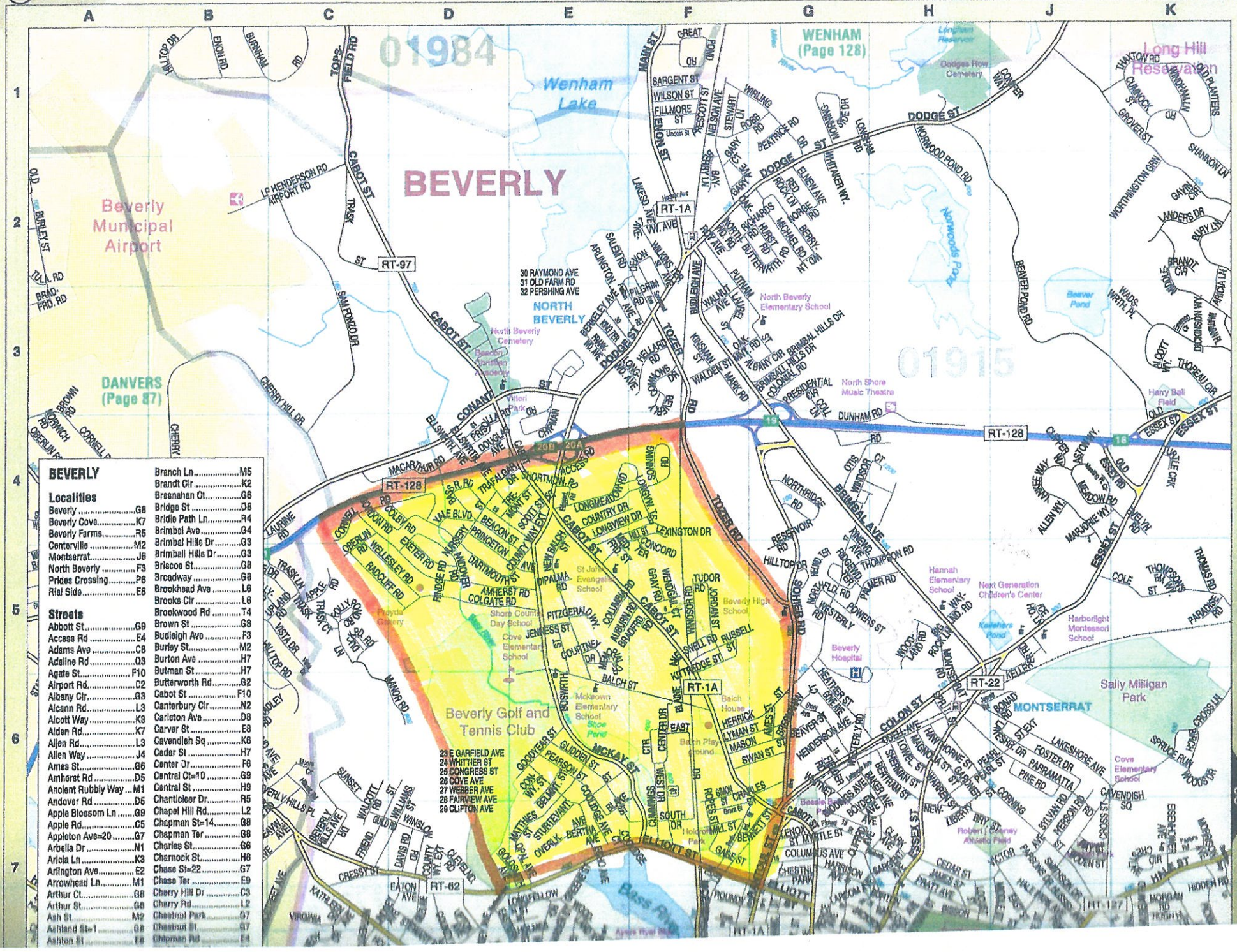
Telephone (978) 921-8591
Fax (978) 922-5695

Swift Phone Message 9-4-13

Important Public Health Notice: The Northeast Massachusetts Mosquito Control District will conduct a targeted adulticide treatment the evening of Thursday, September 5th to reduce mosquito populations in the Raymond Farms, Shingleville and portions of the Ryalside areas of the city. Spraying will take place at any time between the hours of 8:00 pm and midnight. The spraying of the targeted area is in response to a positive West Nile Virus (WNV) pool/sample of mosquitoes from this section of Beverly. Consider staying indoors when the spray truck is in the immediate area of your home, and close windows and shut off fans and air conditioners until the truck passes.

Most importantly, please remember the most effective way to protect yourself is to continue to take personal precautions against mosquitoes, such as: using insect repellent, wearing long sleeves or other protective clothing, minimizing outdoor activity between dusk and dawn, and eliminating standing water around your home. Detailed information about the spray treatment (including: map of the spray area, material label, text of this Swift Phone message, WNV Public Health Fact Sheet and FAQ about spraying) are available for viewing on the City's webpage at www.beverlyma.gov and at the Beverly Health Department located at 90 Colon St, within the Beverly Senior Center

Scale 1:24,000
1 in = 2,000 ft



BEVERLY

Localities

Beverly	G8
Beverly Cove	K7
Beverly Farms	R5
Centerville	M2
Montserrat	J6
North Beverly	F3
Prides Crossing	P6
Rial Side	E8

Streets

Abbott St	G9
Access Rd	E4
Adams Ave	C8
Adeline Rd	Q3
Agate St	F10
Airport Rd	C2
Albany Cir	G3
Alcann Rd	L3
Alcott Way	K3
Alden Rd	K7
Aljen Rd	L3
Allen Way	J4
Ames St	G6
Amherst Rd	D5
Ancient Rubbly Way	M1
Andover Rd	D5
Apple Blossom Ln	G9
Apple Rd	C5
Appleton Ave=20	G7
Arbella Dr	N1
Aricia Ln	K3
Arlington Ave	E2
Arrowhead Ln	M1
Arthur Ct	G8
Arthur St	G8
Ash St	M2
Ashland St=1	G8
Ashton St	E8
Branch Ln	M5
Brandt Cir	K2
Brasnahan Ct	G6
Bridge St	D6
Bridle Path Ln	R4
Brimbal Ave	G4
Brimbal Hills Dr	G3
Brimbal Hills Dr	G3
Briscoe St	G8
Broadway	G6
Brookhead Ave	L6
Brooks Cir	L6
Brookwood Rd	T4
Brown St	G8
Budleigh Ave	F3
Burley St	M2
Burton Ave	H7
Butman St	H7
Butterworth Rd	G2
Cabot St	F10
Canterbury Cir	N2
Carleton Ave	D8
Carver St	E8
Cavendish Sq	K6
Cedar St	H7
Center Dr	F6
Central Ct=10	G9
Central St	H9
Chanticleer Dr	R5
Chapel Hill Rd	L2
Chapman St=14	G8
Chapman Ter	G8
Charles St	G6
Charnock St	H8
Chase St=22	G7
Chase Ter	E9
Cherry Hill Dr	C3
Cherry Rd	L2
Chestnut Park	G7
Chestnut St	G7
Chipman Rd	E4

DUET™
Dual-Action Adulticide

For use only by federal, state, tribal or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

A Quick Knockdown, Oil Soluble Synergized Synthetic Pyrethroid for Effective Control of Adult Mosquitoes, Gnats, Biting and Non-Biting Midges and Blackflies in Outdoor Residential & Recreational Areas.

ACTIVE INGREDIENTS

Prallethrin: (RS)-2-methyl-4-oxo-3-(2-propynyl) cyclopent-2-enyl-(1RS)-cis,trans-chrysanthemate	1.00%
Sumithrin®: 3-Phenoxybenzyl-(1RS, 3RS,1RS, 3SR)-2,2-dimethyl-3-(2-methylprop-1-enyl) cyclopropanecarboxylate	5.00%
Piperonyl Butoxide*	5.00%
OTHER INGREDIENTS**	89.00%
	100.00%

Contains 0.075 lbs of Prallethrin/Gallon, 0.375 lbs of Sumithrin/Gallon and 0.375 lbs of Piperonyl Butoxide (PBO)/Gallon

*(butyl carbityl) (6-propylpiperonyl) ether and related compounds

** Contains petroleum distillate

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta haya sido explicado ampliamente

FIRST AID	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents, call 1-888-740-8712.	
IF SWALLOWED:	Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or a doctor. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person.
NOTE TO PHYSICIAN: Contains petroleum distillates - vomiting may cause aspiration pneumonia.	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE): Mixers, loaders, applicators, and other handlers must wear the following: long-sleeve shirt, long pants, shoes and socks. See engineering controls for additional requirements.

User Safety Requirements: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS: Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

Engineering Controls: Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)]. Human flagging is prohibited. Flagging to support aerial applications is limited to use of the Global Positioning System (GPS) or mechanical flaggers.

ENVIRONMENTAL HAZARDS

This pesticide is highly toxic to aquatic organisms, including fish and aquatic invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and aquatic invertebrates. Before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist. Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material beyond the body of water in order to minimize incidental deposition into the water body. Do not contaminate bodies of water when disposing of equipment rinsate or wash waters.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply to or allow drift onto blooming crops or weeds when bees are visiting the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes, or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

USE RESTRICTIONS

For use only by federal, state, tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

IN CALIFORNIA: This product is to be applied by County Health Department, State Department of Health Services, Mosquito and Vector Control or Mosquito Abatement District personnel only.

IN FLORIDA: Do not apply by aircraft unless approved by the Florida Department of Agriculture and Consumer Services.

Do not treat a site with more than 0.0036 lbs of each a.i., Sumithrin and piperonyl butoxide (0.00072 lbs prallethrin)per acre in a 24-hour period. Do not exceed 0.1 lb of Sumithrin or piperonyl butoxide or 0.02 lb prallethrin per acre in any site in one year. More frequent applications may be made to prevent or control a threat to public and/or animal health determined by a state, tribal, or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

NOTE: When rotating products with other insecticides containing PBO, do not exceed 2 lbs PBO per acre per year.

Do not contaminate food, feed or drinking water. Do not contaminate pastureland, rangeland, cropland, poultry ranges or potable water supplies with spray drift. In treatment of corrals, feed lots, swine lots and zoos, cover any exposed drinking water, drinking water fountains and animal feed before application.

Not for use in outdoor residential misting systems. Not for use in metered release systems.

DUET cannot be diluted in water. Dilute this product with light mineral oil if dilution is preferred.

USE INFORMATION

DUET is approved for application as a thermal aerosol and as an Ultra Low Volume (ULV) nonthermal aerosol (cold fog) in mosquito adulticiding programs involving outdoor residential and recreational areas where adult mosquitoes are present in annoying numbers, and in vegetation surrounding parks, woodlands, swamps, marshes, overgrown areas and golf courses.

For best results, apply when mosquitoes are most active and meteorological conditions are conducive to keeping the spray cloud close to the ground. Application in calm air conditions is to be avoided. Apply only when wind speed is greater than or equal to 1 mph. All types of applications should be conducted at temperatures above 50 °F.

SPRAY DROPLET SIZE DETERMINATION

Ground-based, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter (VMD) is between 8 and 30 microns (Dv 0.5 < 30 um) and that 90% of the spray is contained in droplets smaller than 50 microns (Dv 0.9 < 50 um). Directions from the equipment manufacturer or vendor, pesticide registrant, or a test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

Aerial Equipment, wide area mosquito abatement application: Spray equipment must be adjusted so that the volume median diameter produced is less than 60 microns (Dv 0.5 < 60 um) and that 90% of the spray is contained in droplets smaller than 115 microns (Dv 0.9 < 115 um). The effects of flight speed and, for non-rotary atomizers, nozzle angle on the droplet size spectrum must be considered. Directions from the equipment manufacturer or vendor, pesticide registrant, or a test facility using a wind tunnel and laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

GROUND U.L.V. APPLICATION

To control Mosquitoes and other listed insects, apply DUET at a flow rate of 2.5 to 7.4 fluid ounces per minute at an average vehicle speed of 10 mph using a swath width of 300 feet for acreage calculations (see chart below). Under normal residential conditions a flow rate of 4.6 fluid ounces per minute is rec-

SAMPLE LABEL

ommended. If a different vehicle speed is used, adjust rate accordingly. These rates are equivalent to 0.00024 to 0.00072 pounds of prallethrin and 0.0012 to 0.0036 pounds of sumithrin and piperonyl butoxide per acre. Vary flow rate according to vegetation density and mosquito population. Use higher flow rate in heavy vegetation or when populations are high. DUET may also be diluted with a suitable solvent such as mineral oil and applied by GROUND ULV equipment so long as 1.23 fluid ounces per acre of DUET is not exceeded. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of DUET.

Pounds a.i./Acre		DUET Fl. oz/Acre	Application Rates in Fl.oz./Minute at truck speeds of:			
Prallethrin	Sumithrin/ PBO		5 MPH	10 MPH	15 MPH	20 MPH
0.00072	0.0036	1.23	3.7	7.4	11.2	14.9
0.00044	0.0022	0.75	2.3	4.6	6.8	9.1
0.00036	0.0018	0.61	1.9	3.7	5.6	7.4
0.00024	0.0012	0.41	1.2	2.5	3.7	5.0

DUET may also be applied with non-thermal, portable, motorized backpack equipment adjusted to deliver ULV particles of less than 100 microns VMD. Use 0.41 to 1.23 fl.oz. of the undiluted spray per acre (equal to 0.0012 to 0.0036 lb sumithrin/acre) as a 50 ft swath while walking at a speed of 2 mph. Dilute with a suitable mineral oil if dilution is preferred. Do not exceed 1.23 fl.oz. of the undiluted spray per acre. Do NOT use portable backpack equipment for application in enclosed spaces.

DUET may be applied through truck mounted thermal fogging equipment. Do not exceed the maximum rates listed above. May be applied at speeds of 5 to 20 mph. To reduce oil requirement and sludge buildup in equipment, use a 60-100-second viscosity mineral "fog" oil or other fuel-type oil. Use a clean, well-maintained and properly calibrated fogger. Do not wet foliage since oil base formulations may be phytotoxic. For use with hand-carried foggers, use same rates of active ingredient per acre and a swath width of 50 ft with a walking speed of 2 mph. Fog downwind, with the wind at your back. Do NOT use hand-carried foggers for application in enclosed spaces.

AERIAL APPLICATION

DUET may be applied at rates of 0.41 to 1.23 fl.oz DUET per acre by fixed wing or rotary aircraft equipped with suitable ULV application equipment. Appropriate spray systems include rotary atomizers, flat fan, high pressure, and high pressure impaction nozzles characterized and oriented to achieve the droplet characteristics specified in this label.

DUET may also be diluted with a suitable solvent such as mineral oil and applied by aerial ULV equipment so long as 1.23 fl.oz. per acre of DUET is not exceeded. Refer to the dilution tables on this label for flow rate calculations for diluted end-use formulations of DUET.

Do not apply by fixed wing aircraft at a height less than 100 feet above the ground or canopy, or by helicopter at a height less than 75 feet above the ground or canopy unless specifically approved by the state or tribe based on public health needs.

DILUTION CALCULATIONS

For a 4% Sumithrin product, dilute 1 gallon DUET with 0.25 gallon oil. Finished spray contains 0.3 lb Sumithrin & PBO and 0.06 lb prallethrin per gallon.

Dosage Description	Pounds a.i./Acre		Fluid oz Finished Spray per Acre	Application Rates in Fl.oz./Minute at truck speeds of:			
	Prallethrin	Sumithrin/ PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	1.54	4.7	9.3	14.0	18.6
Recommended	0.00044	0.0022	0.94	2.8	5.7	8.5	11.4
Light Population	0.00036	0.0018	0.77	2.3	4.7	7.0	9.3
	0.00024	0.0012	0.51	1.6	3.1	4.7	6.2

For a 2.5% Sumithrin product, dilute 1 gallon DUET with 1 gallon oil. Finished spray contains 0.1875 lb Sumithrin & PBO and 0.038 lb prallethrin per gallon.

Dosage Description	Pounds a.i./Acre		Fluid oz Finished Spray per Acre	Application Rates in Fl.oz./Minute at truck speeds of:			
	Prallethrin	Sumithrin/ PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	2.46	7.4	14.9	22.3	29.8
Recommended	0.00044	0.0022	1.50	4.6	9.1	13.7	18.2
Light Population	0.00036	0.0018	1.23	3.7	7.4	11.2	14.9
	0.00024	0.0012	0.82	2.5	5.0	7.4	9.9

For a 2% Sumithrin product, dilute 1 gallon DUET with 1.5 gallons oil. Finished spray contains 0.15 lb Sumithrin & PBO and 0.03 lb prallethrin per gallon.

Dosage Description	Pounds a.i./Acre		Fluid oz Finished Spray per Acre	Application Rates in Fl.oz./Minute at truck speeds of:			
	Prallethrin	Sumithrin/ PBO		5 MPH	10 MPH	15 MPH	20 MPH
High Population	0.00072	0.0036	3.07	9.3	18.6	27.9	37.2
Recommended	0.00044	0.0022	1.88	5.7	11.4	17.1	22.8
Light Population	0.00036	0.0018	1.54	4.7	9.3	14.0	18.6
	0.00024	0.0012	1.02	3.1	6.2	9.3	12.4

STORAGE & DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

PESTICIDE STORAGE: Store in a cool, dry place. Keep container closed.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

[For 2.5-gallon Jugs]: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with mineral oil and recap. Shake for 10 secondes. Pour rinsate into application equipment or a rinse tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

[For refillable drums & totes]: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into rinsate collection system. Repeat this rinsing procedure two more times. Offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

FOR MORE INFORMATION CALL 1-800-323-5727

NOTICE: To the extent provided by law, seller makes no warranty, expressed or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use/handling of this material when use and/or handling is contrary to label instructions.

DUET™ is a trademark of Clarke Mosquito Control Products, Inc.

Sumithrin™ is a trademark of Sumitomo Company Ltd.

MANUFACTURED FOR:
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
159 N. GARDEN AVENUE
ROSELLE, ILLINOIS 60172

EPA REG. NO.: 1021-1795-8329 EPA EST. NO.: 8329-IL-01

AVAILABLE PACKAGING: 2.5 GAL, 30 GAL, 55 GAL, 275 GAL TOTE

LOT NO.: Marked on Container Label

Frequently Asked Questions about Spraying and Mosquito Control

Massachusetts Department of Public Health, 305 South Street, Jamaica Plain, MA 02130

How can the risk of West Nile virus disease be reduced?

The risk of West Nile virus infection and disease can be decreased by reducing individuals' exposure to mosquitoes and by taking special precautions during periods of higher risk of infection, including reducing mosquito populations. A comprehensive mosquito control program will include several of the following activities:

- **Surveillance** – regular testing of mosquitoes for the virus
- **Education and Outreach** – education of the public about what steps they can take to prevent mosquitoes from breeding around their home (e.g., source reduction), and how to avoid being bitten by mosquitoes (e.g., repair window screens in your home, wear clothing that covers your skin when outside, use effective mosquito repellent, etc.)
- **Source reduction -** elimination of potential breeding sites by emptying water from containers such as garbage cans, flower pots, birdbaths, and discarded auto tires
- **Larviciding -** the application of chemicals or bacterial products (or larvicides) to mosquito breeding areas to kill or inhibit the growth of mosquito larvae (the early stage of the mosquito) from developing into the adult form
- **Adulticiding -** the application of pesticide chemicals to kill the adult form of the mosquito. These are applied by truck-mounted sprayers or aerially when the risk of an outbreak is apparent, as indicated by increasing numbers of mosquitoes carrying virus and/or human cases of disease.

How effective is adulticiding at reducing the number of adult mosquitoes?

The effectiveness of adulticiding depends on a number of variables that include: which kinds of mosquitoes are present; what chemicals are used; when and how often they are applied; current weather conditions; and the density of homes and streets in a community. It is generally considered an effective means of temporarily reducing adult mosquito populations and has been used in the U.S. and other countries for many years for nuisance control and more importantly, as a means of reducing and preventing mosquito-borne disease. The other activities listed above – elimination of breeding sites, education and outreach, and larviciding –precede adulticide spraying.

Is all pesticide spraying in Massachusetts in response to West Nile virus?

No. Spraying to reduce adult mosquito populations has been done for many years in Massachusetts communities primarily to reduce nuisance mosquitoes. In addition, there have been occasional years when the risk of human eastern equine encephalitis (EEE) has been significant and adulticide spraying has been used to control mosquitoes to reduce the risk of EEE. EEE is of concern mainly in the southeastern part of Massachusetts, in Plymouth, Bristol, and some portions of Norfolk Counties.

What pesticides are used for adulticide spraying in Massachusetts? Have they ever been used in the Commonwealth before?

Synthetic pyrethroid pesticides are the main pesticides used in ground spraying operations for adult mosquito control in Massachusetts. These pesticides (or adulticides) have been used in Massachusetts for many years. They are chemically similar to pyrethrums, a natural pesticide produced by chrysanthemum flowers. For ground spraying operations, resmethrin is usually used. In addition to resmethrin, adulticide contains another active ingredient called piperonyl butoxide (PBO), which increases the ability of resmethrin to kill mosquitoes upon contact and at lower application rates. Other pesticide products sold in Massachusetts contain pyrethroid ingredients and are generally used to treat head lice on children, and fleas and ticks on pets.

How are the pesticide products typically applied?

Adulticides are typically applied from truck-mounted sprayers as a fine mist. Most of each droplet is composed of the soybean oil or mineral oil carrier used to dilute the pesticide product. Mosquitoes die after they come in contact with the tiny droplets of the pesticide. Pesticide products that deposit on surfaces as part of a mosquito control program (e.g., grass, outdoor toys and furniture, etc.) degrade quickly, particularly once exposed to sunlight. Adulticiding for West Nile virus is generally performed at night to target the particular species of mosquitoes that are known to carry the virus.

Why do I see mosquitoes on my street the day after adulticide spraying was done?

There are several reasons why you might see mosquitoes the day after adulticide spraying. The mist of pesticide cannot reach all mosquitoes, so you could be seeing ones that were active at the time of spraying, but did not come in contact with the droplets of pesticide. Some of the mosquitoes you see may have just emerged from their breeding sites. Also, different kinds of mosquitoes are active at different times of the day. Since adulticide spraying for West Nile virus is usually done late in the evening, those species of mosquitoes not active at that time would not be affected by the spraying.

Who decides where to spray adulticides and when? How is this decision made?

Decisions about whether to spray to reduce WNV risk are made at the city or town level. Decisions about where and when to spray are usually made by the local health department or board of health.

Does the State recommend spraying to communities?

MDPH convened meetings of local officials, academic experts, and other interested people to develop a plan for reducing the risk of West Nile virus infections. This plan emphasizes prevention and methods of reducing mosquito numbers that avoid the use of adulticides. In situations of high risk of an outbreak of human disease, the MDPH plan recommends consideration of the use of adulticide spraying to reduce mosquito numbers in those specific areas of high risk.

Who does the spraying of adulticides?

Most pesticide application for mosquito control is done by Regional Mosquito Control Projects under the management of the State Reclamation and Mosquito Control Board. The Projects have full-time professional staff to advise and assist member cities and towns on mosquito control strategies. Most types of larvicides and adulticides can only be applied in Massachusetts by the Projects. Cities and towns that do not belong to a Project and wish to begin mosquito control activities can either join or contract with a Project, or hire commercially licensed pesticide applicators.

Are pesticide applicators licensed?

Pesticide applicators must be licensed or certified by the Massachusetts Department of Food and Agriculture Pesticide Bureau. Training for certification emphasizes integrated pest management and includes training on the proper use of pesticides, identification of the specific pest, and knowledge of pest life cycles.

Can some people experience health effects from adulticide spraying?

Most people are not expected to experience any adverse health effects after pesticide spraying for adult mosquito control. Some individuals may be particularly sensitive to ingredients within the product and experience short-term adverse health effects such as eye, skin, nose and/or throat irritation, breathing problems, and nausea. You should call your doctor if you believe that you are experiencing any symptoms that may be related to pesticide exposure.

What about health effects related to exposure for pregnant women?

A number of laboratory studies have been conducted that have specifically addressed the question of whether or not these pesticides are linked to any developmental or health effects in unborn children. From these studies, it has been determined that unless a unique and unpredicted exposure occurred, the spraying of these pesticides for mosquito control should pose no added risk to pregnant women and unborn children.

Can these targeted ground sprays with adulticides harm other insects or wildlife?

The US Environmental Protection Agency (EPA) has evaluated these pesticides for their safety and has determined that they do not pose an unreasonable risk to birds or mammals if used according to the product label directions. However, the pyrethroid adulticides are considered highly toxic to fish and bees. Therefore, these products are not permitted to be applied to or near open water bodies or in sensitive environments such as wetlands.

What kinds of precautions should I take when adulticide spraying is scheduled for my street?

You can reduce your exposure to the insecticide by staying indoors during spraying. There are otherwise no special precautions that should be taken. The active ingredients of the pesticide product generally break down quickly and do not leave a toxic residue.

If individuals want to take extra steps to minimize or avoid exposure, what steps can be taken?

Common sense steps that can be followed in areas where adulticide spraying is scheduled to take place include:

- People with asthma and/or other respiratory conditions may wish to stay indoors, since it is possible that if exposure to pesticide spray occurred, it could aggravate those conditions. These individuals may want to consult their physician or local health department for further advice.
- If the immediate area of your home is being sprayed, keep windows closed and fans off. Shut off air conditioners unless they have a setting for recirculating indoor air. If it is very hot weather, make sure you open the windows and/or turn fans and air conditioners back on soon after the truck passes your home.

- Rinse any homegrown fruits and vegetables with water as is typically done before cooking or eating them.
- Keep pets indoors during spraying to minimize their risk of exposure.
- If skin and/or clothes or other items are exposed to the sprayed pesticide, wash with soap and water.
- If the spray gets in your eyes, immediately rinse them with water or eye drops, and call your doctor.

Homeowners can ask to exclude their property from public area-wide pesticide applications under the Department of Agricultural Resources' regulation, 333 CMR 13.03, titled Pesticide Board, Exclusions for Application. To request the exclusion, residents should send a certified letter to their town or city clerk by March 1st of each year.

After March 1st, Mosquito Control Projects will still try to accommodate requests. Specific questions regarding the regulation can be answered by calling the local health department, the city or town clerk, or the appropriate Regional Mosquito Control Project. The Department of Agricultural Resources, Pesticide Bureau can also be reached by calling 617-626-1700.

If you think that you are experiencing any health effects from pesticides, call your doctor or the Massachusetts Poison Control Center (800) 222-1222. The MDPH, Bureau of Environmental Health Assessment may also be consulted by calling (617) 624-5757.

Should I be concerned about covering the swimming pool in my yard?

All types of pesticides used in spraying operations for adult mosquito control break down quickly in sunlight and water. Therefore, no special precautions or waiting periods are recommended for outdoor swimming pools. However, if a pool is not being used during the summer months (e.g., if it not being chlorinated or filtered), it should be covered or drained. Any standing body of water is a potential breeding ground for mosquitoes.

How do I find out if spraying for mosquitoes will occur in my neighborhood and when?

Your local health department or board of health will know best if spraying for mosquitoes is likely to occur in your community. The MDPH State Laboratory Institute tests mosquitoes for the virus on a regular basis. A community's decision to spray may depend on a number of factors including the results of mosquito surveillance efforts. During the summer, this information can change from one week to the next; therefore, it is possible that the decision to spray will be made only a few days before it will occur. For this reason, check your local newspaper, radio station, cable television station, the Mosquito Control Project website at www.state.ma.us/dfa/mosquito/districts.htm, or your community's website for updates.

If I work or spend time in other communities where I do not live, how do I find out if those communities are scheduled for spraying?

Each community's health department or board of health or the office of the Mosquito Control Project to which that community belongs would have the most accurate information. However, not all Massachusetts communities belong to a Project. The telephone numbers for each Project are listed below. Information on the Projects may also be found on the Massachusetts Department of Agricultural Resources' website at www.state.ma.us/dfa/mosquito/districts.htm.

Who can I call if I have more questions?

Call your local health department or board of health if you have any questions about West Nile virus or mosquito control. This document and fact sheets about the virus are available on the Massachusetts Department of Public Health website (http://www.state.ma.us/dph) or you can call the MDPH Public Health Information line at 1-866-MASS-WNV or 1-866-627-7968.

What are some other sources of information on West Nile virus and pesticides?

You may find additional information at your local library or by searching the following websites.

For more information about pesticides:

- U.S. Environmental Protection Agency, www.epa.gov/pesticides/factsheets
- National Pesticides Telecommunications Network (NTPN), http://ace.orst.edu/info/nptn/wnv/
- Mosquito Control Districts, www.state.ma.us/dfa/mosquito/districts.htm
    - Berkshire at (413) 447-9808
    - Bristol at (508) 823-5253
    - Cape Cod at (508) 775-1510
    - Central Massachusetts at (508) 393-3055
    - East Middlesex at (781) 899-5730
    - Plymouth at (781) 585-5450
    - Norfolk at (781) 762-3681
    - Suffolk County at (617) 361-0550
    - North East Management (Essex County) at (978) 463-6630

For more information about West Nile virus:

- Massachusetts Department of Public Health, http://www.state.ma.us/dph
- Centers for Disease Control, www.cdc.gov/ncidod/dvbid/westnile

This document was developed in cooperation with the Massachusetts Department of Public Health, the Harvard School of Public Health, the Department of Agricultural Resources, and local Boards of Health.

Revised May 2009

PUBLIC HEALTH FACT SHEET

West Nile Virus

Massachusetts Department of Public Health (MDPH), 305 South Street, Jamaica Plain, MA 02130

What is West Nile Virus (WNV)?

West Nile virus (WNV) is a mosquito-carried virus that can cause illness ranging from a mild fever to more serious disease like encephalitis or meningitis. It was first identified in the United States in 1999.

How is WNV spread?

WNV is most commonly spread to people through the bite of an infected mosquito. More information about different types of mosquitoes that can spread WNV can be found on the MDPH website at www.mass.gov/dph/wnv.

WNV may also be spread through blood transfusion or organ transplant. In addition, there are rare reports of WNV being passed from pregnant or breastfeeding women, who are infected with WNV, to their babies. Since these reports are rare, the health effects on an unborn or breastfeeding baby are unclear and still being studied.

People do not become infected by having direct contact with other infected people, birds or animals.

Why don't I need to report dead birds anymore?

From 2000 to 2008, MDPH collected reports and ran tests for WNV on dead birds in Massachusetts as one of several ways to monitor WNV activity across the state. In recent years, this method has become less useful for finding the virus. Many other states have discontinued dead bird reporting and testing. Mosquito collection and testing gives the most reliable indication of current WNV activity and this is where monitoring activities will continue to be focused.

Dead birds are no longer being tested for WNV and do not need to be reported to MDPH. Dead birds can be safely disposed of in the trash. Using gloves, a shovel or plastic bags covering your hands, the dead bird should be double-bagged and placed in the trash. You should then wash your hands.

What are the symptoms of WNV?

The majority of people who are infected with WNV (approximately 80%) will have no symptoms.

A smaller number of people who become infected (~ 20%) will have symptoms such as fever, headache, body aches, nausea, vomiting, and sometimes swollen lymph glands. They may also develop a skin rash on the chest, stomach and back.

Less than 1% of people infected with WNV will develop severe illness, including encephalitis or meningitis. The symptoms of severe illness can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness and paralysis. Persons older than 50 years of age have a higher risk of developing severe illness.

How common is WNV in Massachusetts?

Because most people who are exposed to WNV have no symptoms, it is difficult to know exactly how many people have been infected. People who develop severe illness with WNV are most often reported. Between 2000 and 2010, 67 people were reported with WNV infection in Massachusetts. Six of these people died. Cases have been identified from around the state.

Is there any treatment for WNV?

There is no specific treatment for WNV infections. People with mild WNV infections usually recover on their own. People with severe WNV infections almost always require hospitalization. Their symptoms may last several weeks and neurological effects may be permanent. Approximately 10% of people who develop severe illness will die from the infection.

What can you do to protect yourself from WNV?

Since WNV is most commonly spread by mosquitoes, here are some things you can do to reduce your chances of being bitten:

- Schedule outdoor events to avoid the hours between dusk and dawn, when mosquitoes are most active.
- When you are outdoors, wear long pants, a long-sleeved shirt and socks. This may be difficult to do when the weather is hot, but it will help keep mosquitoes away from your skin.
- Use a repellent with **DEET** (N, N-diethyl-m-toluamide), **permethrin, picaridin** (KBR 3023), **IR3535** (3-[N-butyl-N-acetyl]-aminopropionic acid) or **oil of lemon eucalyptus** [p-menthane 3, 8-diol (PMD)] according to the instructions on the product label.
  - DEET products should not be used on infants under two months of age and should be used in concentrations of 30% or less on older children.
  - Oil of lemon eucalyptus should not be used on children under three years of age.
  - Permethrin products are intended for use on items such as clothing, shoes, bed nets and camping gear and should not be applied to skin.
  - More information on choosing and using repellents safely is included in the MDPH Mosquito Repellents fact sheet which can be viewed online at www.mass.gov/dph/wnv. If you can't go online, contact the MDPH at (617) 983-6800 for a hard copy.
- Keep mosquitoes out of your house by repairing any holes in your screens and making sure they are tightly attached to all your doors and windows.
- Remove areas of standing water around your home. Here are some suggestions:
  - Look around outside your house for containers and other things that might collect water and turn them over, regularly empty them, or dispose of them.
  - Drill holes in the bottom of recycling containers that are left outdoors so that water can drain out.
  - Clean clogged roof gutters; remove leaves and debris that may prevent drainage of rainwater.
  - Turn over plastic wading pools and wheelbarrows when not in use.
  - Change the water in birdbaths every few days; aerate ornamental ponds or stock them with fish.
  - Keep swimming pools clean and properly chlorinated; remove standing water from pool covers.
  - Use landscaping to eliminate standing water that collects on your property.

Did you know?

Mosquitoes can begin to multiply in any puddle or standing water that lasts for more than four days! Mosquito breeding sites can be anywhere. **Take action** to reduce the number of mosquitoes around your home and neighborhood. Organize a neighborhood clean up day to pick up containers from vacant lots and parks and to encourage people to keep their yards free of standing water. Mosquitoes don't care about fences, so it's important to remove areas of standing water throughout the neighborhood.

Where can I get more information?

- Your doctor, nurse, or health care clinic, or your local board of health (listed in the telephone directory under local government)
- The Massachusetts Department of Public Health (MDPH), Division of Epidemiology and Immunization at (617) 983-6800 or toll-free at (888) 658-2850, or on the MDPH Arbovirus website at www.mass.gov/dph/wnv
- **Health effects of pesticides**, MDPH, Center for Environmental Health at 617-624-5757
- **Mosquito control in your city or town:** Mosquito control in Massachusetts is conducted through nine mosquito control districts. The State Reclamation and Mosquito Control Board (SRMCB) oversees all nine districts. Contact information for each district can be found online at www.mass.gov/agr/mosquito/districts.htm. You may also contact the SRMCB within the Massachusetts Department of Agricultural Resources at 617-626-1777 or your local board of health.

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